DATASHEET

CyrusOne

FRA7

CyrusOne Data Center

Stroofstraße 49, 65933
Frankfurt am Main, Germany

Introduction

CyrusOne FRA7 is a brand-new state of-the-art data center campus strategically located in FRANKFURT WESTSIDE; Frankfurt's largest 73-hectare commercial and industrial mixed-use regeneration project managed by BEOS AG and Swiss Life Asset Managers Deutschland GmbH.

The facility will initially deliver 81 MW IT capacity to 25,266 sqm (271,964 sq ft) of world class technical space within two separate three-story buildings.

Overview

- 81 MW IT capacity delivered to two separate three-story buildings
- 25,266 sqm (271,964 sq ft) total technical space
- Designed to achieve BREEAM Very Good certification as a minimum
- Capable of deploying a potential 40MW of waste heat for re-use across the wider campus heating network when at full capacity
- Utilization of 100% renewable energy sources
- 150MVA utility power supply at 110kV
- New redundant high-voltage grid connection and a dedicated substation serving the data centers
- PV cells on the roof to generate power for the office areas and other ancillary spaces
- Low PUE (<1.3) achieved through highly efficient design and equipment selections, utilizing free-cooling technology and optimized operating temperatures in accordance with ASHRAE standards
- Low WUE achieved through utilization of closed loop chilled water system and no evaporative cooling
- Carrier neutrality and diverse fiber connectivity to site
- Multi-layer industry-leading levels of physical and electronic security with 24/7 year-round onsite support

Sustainable Design and Construction

BREEAM CERTIFICATION

With sustainability at the heart of the FRANKFURT WESTSIDE project, the campus has already been pre-assessed for DGNB Platinum and CyrusOne's Data Centers are designed to achieve a BREEAM 'Very Good' certification and comply with multiple sustainable criteria including:

- Sustainable site and waste management, best practice delivered through a Site Waste Management Plan (SWMP) and a Zero Waste to Landfill (ZWL) plan with the use of recycled aggregates.
- Lower environmental impact of the building over its full life cycle, achieved through the use of 'Green Guide' high performance materials.
- Protection of existing ecological features that mitigate the impact on the environment by investment in establishing biodiverse landscapes with native pollinating planting schemes where possible.
- Reduced impact on climate change & local environment, using materials with low global warming potential (GWP) provision of electric vehicle charging, sourcing staff locally and supporting the local economy.
- Best practice design for health, well-being, and occupancy ensuring thermal comfort, lighting and control, indoor air quality, and acoustic performance, encouraging reduction in car travel through the provision of cyclist facilities.

HEAT RE-USE

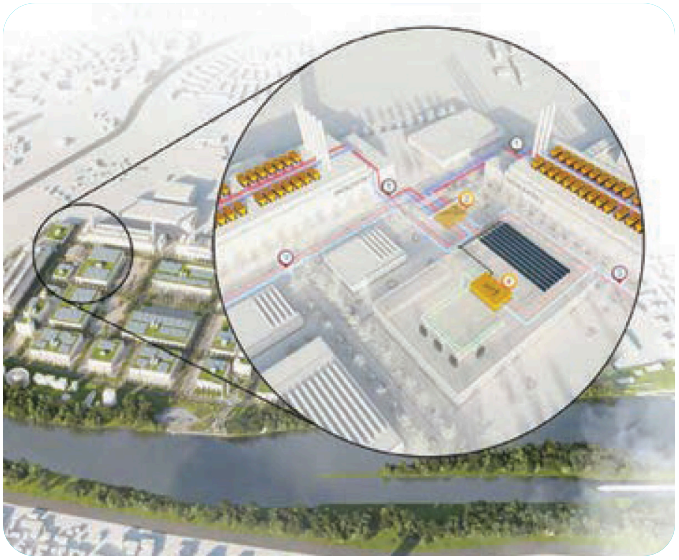
The data centers will be capable of deploying up to 40MW of waste heat for re-use across the wider campus heating network when at full capacity.

The process is designed to enable heat from the servers in the data halls to be absorbed into a water system that will be connected via heat exchangers to pipe network infrastructure, that will in turn connect to the buildings on the development.

Depending on the heat requirement, the temperature of the water will be increased via a heat pump within each building

EMISSIONS AND RENEWABLE ENERGY

- Power is procured from 100% renewable energy sources as is all CyrusOne's data center portfolio in Europe since 2021.
- Integration of PV cells to contribute towards office power supplies and other ancillary spaces
- To reduce NOX emissions, all generators are provided with Selective Catalytic Reduction (SCR) systems and can run on HVO fuels procured from secondary oil sources. This typically offers up to 5x reduction on standard NOX emissions.



Sustainable Design and Construction

AESTHETICS, BIODIVERSITY AND COMMUNITY

TThe FRANKFURT WESTSIDE development as a whole will promote the efficient use of the existing structures, careful use of resources and provide open space designed for biodiversity, leisure, and recreation.

CyrusOne's dedicated biodiversity initiatives will also be prioritized, with ecological landscaping to increase biodiversity and provide habitats for wildlife including:

- Provision of 5,500 sqm of open green space and the planting of over sixty trees.
- Over 1,800 sqm of the facility walls and roofs will be 'green', not only creating an aesthetically pleasing outlook for the local community but also improving air quality by filtering pollutants, reducing noise, supporting thermoregulation, and increasing the buildings' energy efficiency.
- Direct access to new public transport services serving the wider campus and beyond including campus-wide dedicated pedestrian and cycle routes.

Technical Specifications

POWER

- Derived from 100% renewable energy sources
- Mains power supplied via 100% rated A&B 110 kV incomers diversely routed active / active with a capacity of 125MVA
- All IT power metered and charged as consumed
- 9 MW block redundant topology with 7 independent and compartmentalized power blocks per data hall
- 99.999% reliability with the ability for concurrent maintainability
- IT power supplies are derived from primary and reserve feeds from each block via STS's creating a meshed IT distribution topology between all 7 blocks in an N+1 configuration
- Block redundant UPS topology with 1500KW UPS system per power stream
- Fully rated block redundant LV back-up generators with 4 8-hour fuel autonomy, capable of continuous running, paired with each power stream
- Re-fueling contracts to ensure timely replacement
- Integration of office-based EV Chargers

COOLING

- Low WUE achieved through utilization of closed loop chilled water system and no evaporative cooling
- N+1 free cooling air cooled chillers
- Critical cooling distributed via multiple pipework rings per data hall for maximum resilience
- Computer Room Air Handing Units at N+4
- Chilled Water Circulation pumps N+1
- Cooling infrastructure individually managed and linked
- to BMS
- Independently regulated temperature and humidity within each hall
- Power supplies to cooling equipment for full redundancy configured in a block redundant topology
- Refrigerants contained in the cooling systems are non-toxic and are used in closed atmospheric circuits

CONNECTIVITY

- Carrier neutral access and diverse fiber connectivity to active A&B Meet Me Rooms from multiple telecommunications providers
- Four diverse fiber routes onto site
- Diverse fiber rings around entire facility to permit multiple building/hall connectivity

FIRE DETECTION AND SUPPRESSION

- Three-stage fire detection systems into data halls and MMR's
- VESDA (Very Early Smoke Detection Apparatus) for early warning, then double knock 2 zone detection
- VESDA for early warning, in LV/UPS Pods
- Fire detection in all rooms, in air plenums and in voids as required and to meet local regulations
- Nitrogen filled pre-action sprinkler system to data halls and MMR's
- Double knock approach sprinkler system to all technical areas, zone activation
- Wet sprinklers pre-charged in Offices and Ancillary spaces
- Fire detection and suppression systems interconnected to central BMS for additional monitoring and alarms

BUILDING & ENERGY MANAGEMENT SYSTEM (BMS & EMS)

- Power and building monitoring systems to provide alarms and live visual graphics in command center.
- Data collection and trend logging for reporting purposes and equipment condition monitoring
- Power surge management
- 24/7 year-round-on-site M&E engineers undertaking Planned Preventative Maintenance (PPM) programs
- Real-time monitoring of electrical and mechanical systems

OPERATED TO INTERNATIONAL STANDARDS

- ISO 14001 Environmental Management
- ISO 27001 Information Security Management
- ISO 9001 Quality Management
- ISO 50001 Energy Management

Site Plan