

# PAR1

## CyrusOne Data Center

📍 1 Boulevard Arago, 91320  
Wissous, Paris, France



### Introduction

CyrusOne PAR1 is a brand-new data centre utilising a pre-existing industrial building located within a designated industrial zone of 120 acres. At 52,240 sqm, CyrusOne's data centre occupies less than 11% of the industrial zone in the municipality of Wissous, in the department of Essonne (91) approximately 9km south of the municipal limits of Paris.

The facility will ultimately deliver a total IT capacity of 27 MW across 10,396 sqm of technical space in six data halls. At the time of writing there were 4.5 MW of IT capacity in operation, with a total incoming power of 7 MVA.



## Development Phases

The project is being developed in three phases:

### PHASE 1

In 2020 CyrusOne received formal planning permission in line with French law and regulation, enabling the development of a single data hall delivering 4.5 MW of IT capacity across 1,810 sqm of technical space, constructed within a pre-existing industrial warehouse, and equating to approximately 20% of the total planned build.

#### Capacity and Power Solution

- One data hall of 1,810 sqm with an IT capacity of 4.5 MW in operation
- Interim utility power supplies of 7 MVA from Enedis

### PHASE 2

In Q1 2024 CyrusOne received formal planning permission in line with French law and regulation to expand the building occupancy, enabling the development of an additional two data halls delivering 6.9 MW of IT capacity across 3,310 sqm of technical space, constructed within a pre-existing industrial warehouse and equating to approximately 50% of the total planned build. At the time of writing the 6.9 MW were not in operation.

#### Capacity and Power Solution

- Two data halls of 3,310 sqm with an IT capacity of 6.9 MW
- Upgraded interim utility power supplies of 17 MVA from Enedis

### PHASE 3

At the time of writing CyrusOne had not received environmental authorisation or planning permission. Once this is received CyrusOne will progress the development of the remaining three data halls delivering 15.6 MW of IT capacity across 5,276 sqm of technical space, completing the total planned build.

#### Capacity and Power Solution

- Three data halls of 5,276 sqm with an IT capacity of 15.6 MW
- Dual redundant active / active utility power supplies of 60 MVA from RTE

### ALL PHASES 1–3:

- Low Power Usage Efficiency (PUE) (<1.3) achieved through highly efficient design and equipment selections, utilising free-cooling technology and optimised operating temperatures in accordance with ASHRAE Standards
- Low Water Usage Efficiency (WUE) achieved through utilisation of closed loop chilled water system and no evaporative cooling
- Dedicated low voltage electrical infrastructure to each data hall
- 900 mm heavy duty raised floor with 3,000 mm clear height in the data hall
- Carrier neutrality and diversely routed fibre connectivity from multiple providers
- Secure managed delivery bay with goods lift
- Multi-layer industry leading levels of physical and electronic security with 24/7 year-round onsite support

#### DEVELOPMENT PHASES

PHASE 1

PHASE 2

PHASE 3



## Sustainable Design and Construction



**BEFORE**

363 Rue André Dolimier 91320 Wissous, France



**AFTER**

363 Rue André Dolimier 91320 Wissous, France

## AESTHETICS AND BIODIVERSITY

CyrusOne is committed to investing in design and materials to transform the original industrial buildings into a warm, natural, and sustainable aesthetic whilst enhancing biodiversity and habitat including:

- The installation of elegant vertical wood cladding sourced from FSC and PEFC certified suppliers on the north and west building, facades including the guardhouse, existing canopies, removable vent covers and chimneys.
- Wildlife shelters for birds and bats.
- Over 5,250 sqm of green spaces will be incorporated with native species including 127 high stemmed trees proposed including the varieties shown below.



LAVANDULA ANGUSTIFOLIA



VIBURNUM-OPULUS



ASARUM EUROPAEUM



VIBURNUM OPULUS



CORNUS SANGUINEA



QUERCUS PETRAEA



CORNUS SANGUINEA HIVER



PHILADELPHUS BELLE

## Sustainable Design and Construction



### BREEAM CERTIFICATION

---

The building is designed to achieve a BREEAM certification, ensuring it complies 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

---

- Provision within the design to export waste heat from the chilled water system for phases 2 and 3.

### EMISSIONS AND RENEWABLE ENERGY

---

- Traffic associated with the operation of the data centre will be limited and significantly less if the site was used for logistical distribution. Generators will only be used in an emergency and occasional testing reducing overall greenhouse gas emissions.
- Generators can run on HVO fuels procured from secondary oil sources, in order to reduce CO2 emissions. NOx levels from HVO fuels are typically 5 times less than that of a diesel generator.
- Power is procured from 100% renewable energy sources as is all CyrusOne's data centre portfolio in Europe since 2021.

### OPERATED TO INTERNATIONAL STANDARDS

---

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

## Technical Specifications

### POWER

---

- Derived from 100% renewable energy sources
- Low PUE (<1.3) achieved through highly efficient design and equipment selections, utilising free-cooling technology and optimised operating temperatures in accordance with ASHRAE Standards
- Mains power supplied via 100% rated A&B 225 kV incomers diversely routed active / active with a capacity of 60 MVA
- All IT power metered and charged as consumed
- 9 MW block redundant topology with 7 independent and compartmentalised 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 1500 KW UPS system per power stream
- Fully rated block redundant LV back-up generators with 48-hour fuel autonomy, capable of continuous running in an emergency paired with each power stream
- Re-fuelling contracts to ensure timely replacement
- Integration of office-based EV Charger

### COOLING

---

- TECHNICAL SPECIFICATIONS
- Low WUE achieved through utilisation 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
- Use of chillers running on R513A, a new fluid in compliance with the Kyoto Protocol
- 4.5 MW IT capacity cooling solution per hall
- Computer Room Air Handling Units at N+4
- 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

### CONNECTIVITY

---

- Carrier neutral access and diverse fibre connectivity is provided from multiple telecommunications providers.
- Four diverse fibre routes one provided onto site.
- Diverse fibre rings are provided around the entire facility to permit multiple building/hall connectivity.

### FIRE DETECTION AND SUPPRESSION

---

- Three-stage fire detection systems into data halls, 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
- 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 centre
- 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) programmes
- Real-time monitoring of electrical and mechanical systems

## Technical Specifications

### SECURITY

---

- 2.5-metre-high security perimeter fence cast within concrete base
- Vehicle lock at the entrance to site with PAS 68 rated gates to protect from physical attack
- Gatehouse at the entrance to site for both vehicle and pedestrian management
- Extensive external CCTV to cover external areas of the buildings, roadways and site extents including the perimeter fence
- Extensive internal CCTV and access control throughout the facility
- 24/7 year-round-on-site security located in a secure control room, with mobile patrols
- Progressive layers of security to restrict access through the site
- Mantraps with biometric readers into data halls and other areas as required