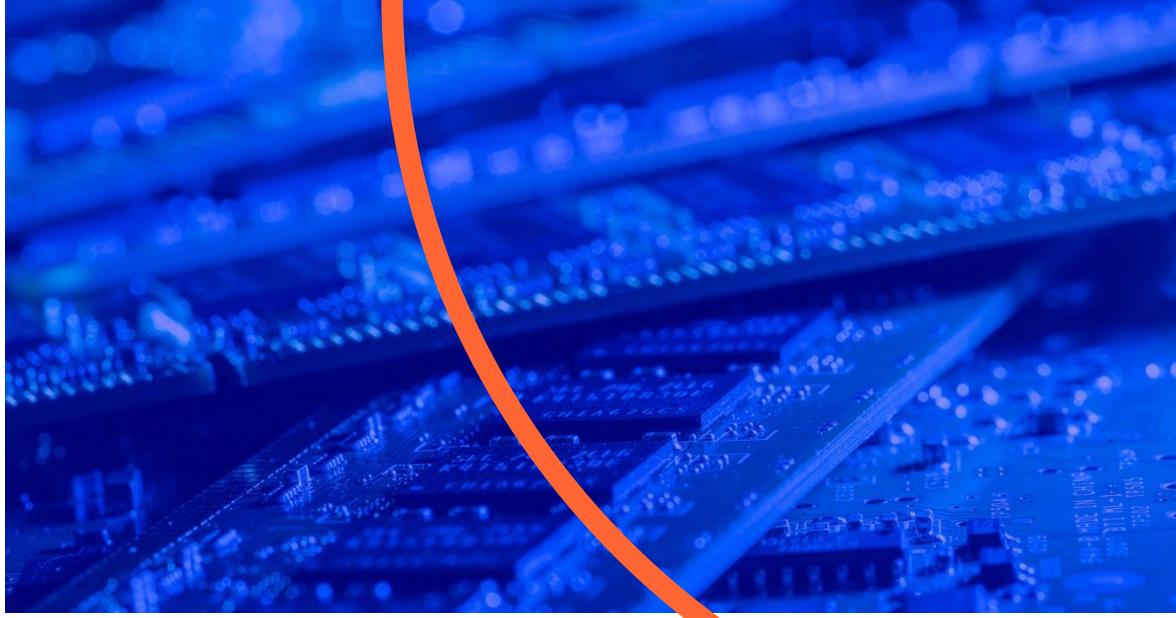
GTS Telecom

CLUJ-NAPOCA DATA CENTER

GENERAL DESCRIPTION



CLUJ-NAPOCA GTS TELECOM DATA CENTER (DC4)

The Cluj GTS Data Center is **a data center, with redundant N+1 technologies,** having a maximum installed power of 500kW (with **an estimated annual PUE of 1.4**) and a current colocation capacity of 60 racks, with an extension potential.

The premises completed in December 2018, occupies a total of approximately 300 square meters, consisting of:

- **2 independent colocation rooms**, hosting 60 racks (30 cabinets per colocation room)
- **Technology room dedicated** to Data Center assets (UPS, batteries, extinguishing system, security systems, etc.)
- **Staging room** (the area intended for troubleshooting operations for the colocated equipment)
- **Office** (area dedicated to the sales staff and to the ones who operate the Data Center)
- **Meeting room** (area dedicated to GTS external meetings)

LOCATION: LIBERTY TECHNOLOGY PARK

The GTS DC4 Data Center is located inside the L**iberty Technology Park**, 1 Garii Street, **Cluj-Napoca**.

ARCHITECTURAL.
CIVIL WORKS

1 WALLS

which separate the perimeter space of the GTS Cluj Data Center, as well as the interior walls of all the technical spaces, have **a nominal thickness of 150mm** and **a fire resistance of 120 minutes**, like the doors that separate the external imprint and the technical spaces.

2 FLOORING

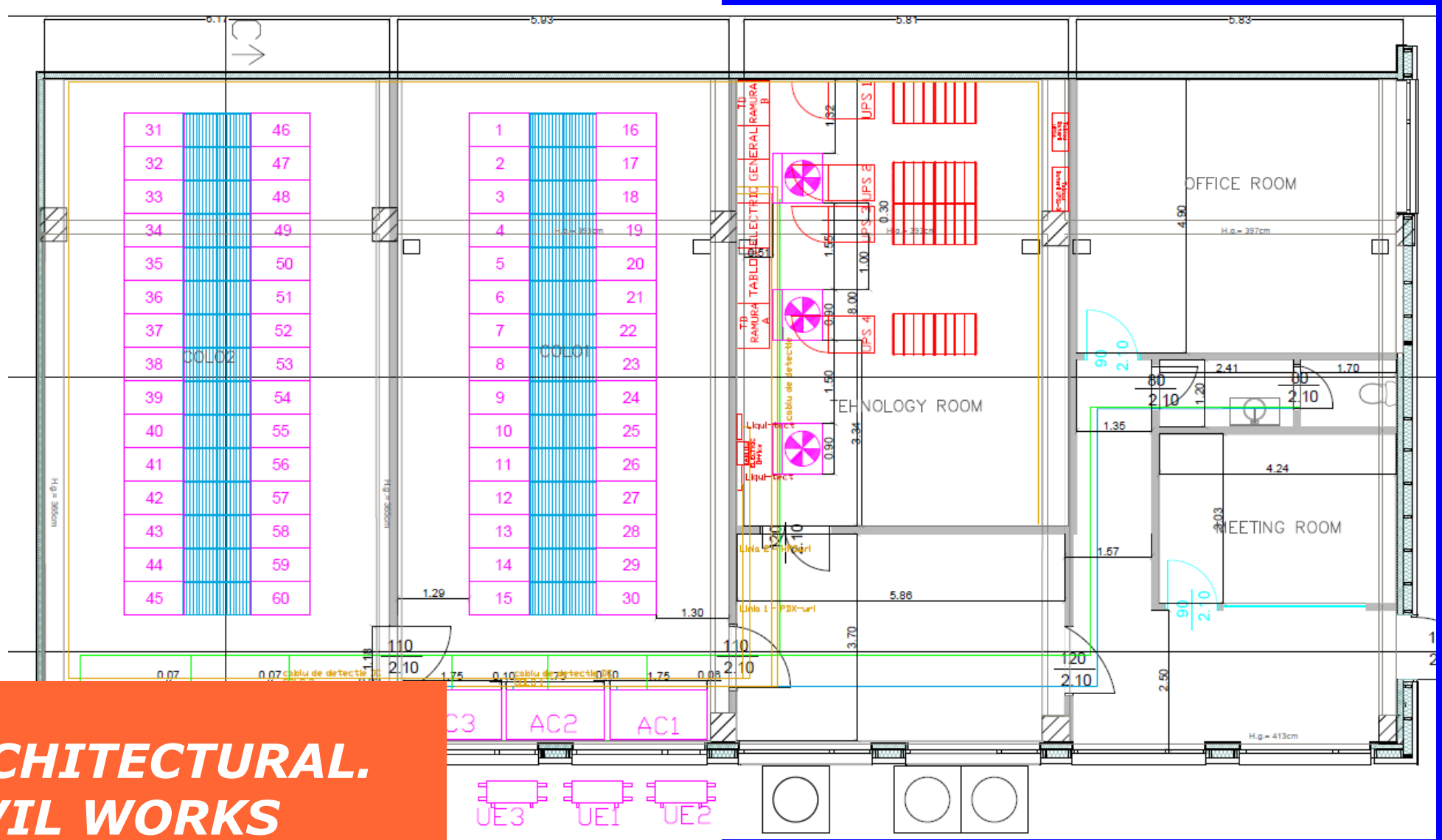
the anti-static float, with a height of 800mm (in technical areas), is **designed to withstand loads of 16kN/m2** and has an important role both in the distribution of cold air and in the routing of electrical routes.

3 CEILING

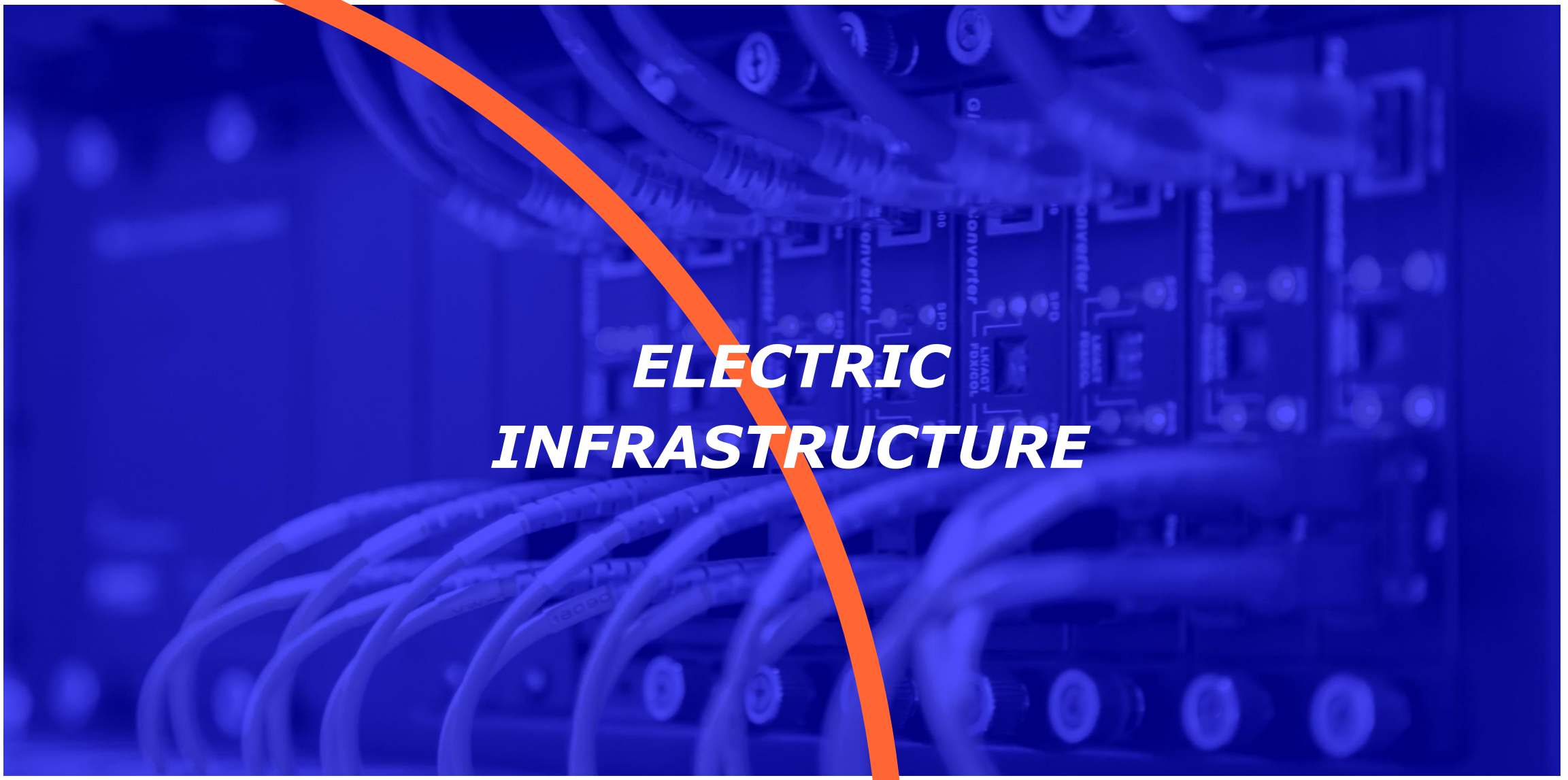
a perforated cassette, with a metal structure, that plays the role of air cushion (plenum) in the colocation room, **streamlining the entire cooling system** by faster and more concentrated absorption of hot air, generated by the colocated equipment.

4 LIGHTING

it is made with **LED panels**, both for **low consumption and high efficiency**, and for alignment with the "Green" standards of the host building.



ARCHITECTURAL. CIVIL WORKS



ELECTRIC INFRASTRUCTURE

ELECTRIC INFRASTRUCTURE

- The electrical infrastructure is dimensioned to supply a total load of **500kW** Data center.
- The electric infrastructure allows the power supply of High Density racks, ready for an active power of **10kW**, and the standard ones, prepared for an active power of **5kW**.

ELECTRIC PANEL

- The electrical panel, provided by EATON Romania and made in partnership with a local panel manufacturer, **integrates a redundant and diverse multifilament diagram** both in terms of power supply and vital consumers distribution.
- The main distributions of the electrical panel are equipped with Janitza network analyzers, which, together with the dedicated software solution, perform **a real-time x-ray of the entire electrical network**, while ensuring the monitoring of electrical parameters and calculating the efficiency of the Data Center.

UPS SYSTEM

The UPS system consists of four Riello Multi Sentry MST 120 units with a power of 125kVA/125 kW to ensure **a level of N+1 redundancy.** It can sustain the continuity of power supply for about 15 minutes in case of a maximum charge of **300kW IT**.

DIESEL GENERATOR

If there are power supply interruptions at the level of the supply line found in the main distribution network, the power supply will be taken over by **a redundant N+1** diesel generator **system** consisting of two TEKSAN generator sets with DOOSAN engine and MARELLI alternator, which offers a power of **639 kVA/511 kW** (PrimePower).

AIR CONDITIONING

COLOROOM

For the air conditioning of each colocation room are used **3 types of equipment (in redundancy setting of N+1)** close control with double circuit, Vertiv brand, type PDX PX092EA, with extended height, Downflow Down Smart Aisle configuration. These have **a net sensitive cooling capacity of 100kW** on each unit.

ECO AISLE

- Eco Aisle is the system that ensures, **at a high level of quality and reliability**, the closure of the cold aisle, being an integral part of the cooling solution.
- Eco Aisle is **an intelligent heat retention solution**, designed to increase **the efficiency of the cooling system** and also **to protect critical IT staff and equipment**. Eco Aisle system adapts to different rack heights and depths and aisle widths in order to support the insulation of the hot or cold aisle.

FGS (OPTICAL FIBER GUIDING SYSTEM)

- The FGS device from ADC Krone acts as **a guide for the optical fiber patch cords** between the two dedicated ODFs and the customer racks. The optical fiber reaches the Data Center on two separate routes, without a common point, and connects the GTS Data center to the two POP-ups from our own national network.

RACKS

- The installed racks are 42U (60 pcs) NetShelter SX AR3100 APC cabinets, with external dimensions of 600x1070x1991mm (WxDxH).
- With **a strong focus on cooling**, power distribution, cable management and environmental monitoring, the NetShelter SX rack enclosure provides a **reliable rack-mount environment for mission-critical equipment.**

PDU (POWER DISTRIBUTION UNIT)

Considering the need to load 10 kW/rack for the high-density area and 5kW/rack for the rest of the cabinets, the following distribution was used:

- **APC model AP8881** (2 PDUs/rack, powered variously and redundantly from two switchboards). These PDUs are three-phase powered and can supply equipment up to a total of 11 kW.
- **APC model AP8853** (2 PDUs/rack, powered variously and redundantly from two switchboards). These have single-phase power supply, support a total input current of 32A and can supply equipment up to a total of 7 kW, active power.

Rack power distribution units (PDUs) include active measurement function to allow monitoring and optimization of power consumption.

ACCESS CONTROL.
VIDEO MONITORING

ACCESS CONTROL AND ANTI-BURGLARY

It is made with the help of the integrated DSC system. It performs **automatic surveillance of spaces** where burglary attempts, audible alarm with the help of outdoor and indoor sirens in case of an event, manual signaling of armed attack attempts by panic button, continuous self-testing for detectors and panel control, with the possibility of remote diagnosis, sabotage protection, as well as access control in high-risk premises can take place.

VIDEO SURVEILLANCE

- The closed-circuit video system is **a complex system, consisting of 8 indoor video cameras and 3 outdoor cameras** installed in points of real interest. These cameras are connected to a digital equipment system (NVR), which performs the simultaneous tracking of the 11 cameras on a monitor and the successive switching, manual or automatic, of the cameras on the monitor assigned to it.
- **Multiplexed or individual images of all cameras are recorded on digital support**, in a compressed format and with the possibility of transferring data to a mobile storage medium such as a USB stick or a CD. According to the IGP rules, the stored images will be archived for at least 30 days.

DETECTION AND FIRE EXTINGUISHING

DETECTION AND WARNING SUBSYSTEM

Performs the following options:

- Automatic monitoring of the onset of fire (fire, smoke or change in temperature)
- Manual fire signaling
- Operation signaling / control of other auxiliary installations
- Ensures the evacuation possibilities under the conditions involved by the existence of an access control installation.

FIRE-FIGHTING SUBSYSTEM

The inert gas fire extinguishing subsystem (INERGEN) for Colo Room and Technology Room consists of:

- Conventional extinguishing control panel
- Electromechanical extinguishing system
- Mechanical transport and discharge system extinguishing agent
- Alarm sirens in case of fire.

PROJECT DEFINING ELEMENTS

	EQUIPMENT	PIECES	DETAILS
SPECIFICATIONS	Data Center with a total dedicated area of 300sqm		Partitioning: colocation room, Technology Room, Office, Meeting Room
	Colocation capacity of 60 cabinets		Installed Racks (APC AR3100)
			-
	Fireproof certified walls and doors with a propagation resistance of 120 minutes		Knauf, Ninz
	Metal false ceiling - role of air bag (plenum)		
	False flooring at 800mm		
	LED lighting		
ELECTRIC	Electrical infrastructure sized for an active installed power of 500kW		Eaton xVTL modular electrical panel, redundant distributions
	UPS Riello Multi Sentry MST 125 kVA/125 kW	4	N+1 redundancy
	Diesel Generator TEKSAN, motor DOOSAN, MARELLI 639 kVA/511 kW alternator (PrimePower)	2	N+1 redundancy
	High Density racks active power - 10kW/rack.	10	Equipped with redundant PDUs (2pcs/rack)
	High Density racks active power - 5kW/rack.	50	Equipped with redundant PDUs (2pcs/rack)
AIR CONDITIONING	Emerson Liebert Hiross PX092EA - cooling capacity 100kW	6	N+1 redundancy, Downflow Down Smart Aisle configuration
	Cold aisle insulation system - APC EcoAisle	2	
OTHERS	Access control, video surveillance		Data center dedicated systems
	Fire detection and extinguishing		Inert gas extinguishing systems (INERGEN)

Thank You!