DATA CENTER MARKET SWITZERLAND

Niche real estate segment with increasing potential
FOREWORD
Why data centers matter

Did you know that Switzerland is among the top ten data center markets in Europe in terms of the number of data centers? And did you know that the Zurich region ranks sixth after Frankfurt, London, Amsterdam, Paris and Dublin in terms of data center power supply and still offers a large pipeline of hyperscaler developments?

The following presentation aims at exploring in more detail why data centers have not only displayed more resilience in the current Corona crisis but continue to benefit from different structural trends and an increasing investor demand in the long run.

The growing significance of digitalization has been transforming all sectors of activity over the last two decades, with the real estate industry being no exception, and has translated into new needs for infrastructure, transmission networks and data storage. The steep uptrend in data consumption patterns observed after the outbreak of COVID-19 and fueled by home office, video streaming, online gaming, e-commerce etc. has highlighted the growth potential of this burgeoning segment in Switzerland as well.

Over the last years already, the emergence and rise of e-commerce has been profoundly impacting the retail and logistics real estate sectors. But more recently, data centers have blossomed out to become another interesting asset class with a risk / return profile sitting between real estate and infrastructure.

At this stage of the economic and real estate cycle, characterized by a low yield environment and constrained rental growth in the traditional real estate segments, investors are seeking to diversify their exposure to operating real estate assets, with structural long-term trends as the bedrock for value creation. Even though Switzerland’s market for data centers is still considered as a niche given its relative share in the commercial property (investment) market, private equity firms and increasingly infrastructure funds are discovering this growth market for themselves.

The data center market requires specific know-how that differs from other property types. Even though traditional real estate investors do not yet show a large interest in data centers, they should keep a close eye on this market as it offers rapidly growing potential for alternative property investments.
DATA CENTERS
Main features and drivers

WHAT IS A DATA CENTER?
A data center is a network of computing and storage resources in physical racks that enables the delivery of shared software, business applications and data. Instead of running their own data centers, companies can opt for cloud services or colocation data centers (unmanaged or managed), where they can rent physical storage space and connect their own IT equipment.

Customers lease power in data centers rather than floor area. Therefore, the colocation data center market (supply, vacancy, absorption etc.) is often measured by the IT load capacity in megawatts (MW). The more MW and power usage effectiveness (PUE), the higher is the rent.

A data center is equipped with a guaranteed power supply and high bandwidth connectivity. Resilience is critical, so redundancy (duplication) of networks, power and other infrastructure (e.g. cooling and generators) is common to ensure continuity.

MAIN FEATURES

Security
Cope with rising risks of cyber attacks thanks to physical and virtual security measures

Power
Redundant power supply with high energy-efficiency to enhance performance, to reduce costs and to limit environmental footprint (PUE)

Connectivity
Ensure carrier-neutral business continuity and provide fastest independent fiber connections

DEMAND DRIVERS

Cloud / Edge Computing

Internet of Things / 5G

Industry 4.0

Big Data

EXPOENTIAL GROWTH OF THE GLOBAL DATASPERHE

Source: CBRE based on IDC, 2018
GROWTH OF CLOUD COMPUTING

Approx. 80% of the current take-up of data center capacity in Europe originates from cloud providers. The applications that are being run by these companies are seeing record usage.

The largest cloud providers (Amazon, Microsoft, Google, Oracle or IBM) are expanding their facilities closer to their customers across the globe. They have been opening new cloud data center regions in Switzerland more recently.

CLOUD IS THE NEW CORE DATA REPOSITORY

Businesses as the primary source of data creation as well as consumers find it increasingly attractive to store their data in private and public clouds that offer fast and ubiquitous access to their data. Corporate and on-premise data centers are therefore being replaced by enterprise private, hybrid and especially public cloud services.

With better access to cloud services, the proportion of data stored in endpoint devices (e.g. PCs, smartphones) will decrease. The growing need for real-time data can best be handled from centralized enterprise or cloud data centers. The same holds true for enterprise-hardened edge data centers (on a lower level though).

CHANGING INFRASTRUCTURE

The growing demand for cloud services is gradually leading to the closure of corporate data centers and taking demand away from traditional data centers. In addition, managed colocation data centers are replacing colocation models consisting in renting rack space and infrastructure only.

Shrinking hardware size and higher power density / efficiency are changing data center demand: less space is needed for equivalent data storage capacity. Large hyperscaler data centers can be operated more efficiently and ecologically, which leads to a market consolidation.

WHERE IS THE DATA STORED?

Source: CBRE based on IDC, 2018
**Types of Data Centers**

*The most important concepts*

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td><strong>Colocation DC</strong></td>
<td>Leasing of server room capacities, Specialised operators</td>
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<tr>
<td><strong>Hyperscale DC</strong></td>
<td>Type of wholesale colocation, Large data centers mainly for cloud providers</td>
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<tr>
<td><strong>Enterprise DC</strong></td>
<td>IT infrastructure for corporates, Corporate groups</td>
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<tr>
<td><strong>Telecom DC</strong></td>
<td>Often old data centers with telecom infrastructure, Telecom companies</td>
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<tr>
<td><strong>Edge DC</strong></td>
<td>Small data centers catering to local requirements to reduce latency, Specialised operators or telecom companies</td>
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**Retail Colocation DC**

- Highly connected
- Hundreds of customers who rent rack / cage space
- Small deal sizes (5-250 kW)
- Contract lengths typically 1-3 years
- Colocation pricing is much higher
- Power inclusive deals

**Wholesale Colocation DC**

- Less fibre connectivity
- Handful of customers who build their own environment
- Deal size larger (250 kW+)
- Contract lengths typically 5-10 years +
- Colocation pricing is lower
- Power exclusive deals

**Hyperscale DC**

- Wholesale colocation, built-to-suit or self-built
- Deal size typically 1 MW+
- Contract lengths typically 5-15 years +
- Colocation pricing is lower
- Power exclusive deals
DATA CENTER REQUIREMENTS

**Key site ingredients**

- High voltage power in close proximity
- Close vicinity to internet exchange points
- Greatest number of carriers (neutral)
- Proximity to other data centers
- Cooling (≤ 27 °C)
- Redundancy
- High floor loading capacity
- Good ceiling heights of min. 4 m
- Raised floor
- Multiple, redundant generators or independent power grid access
- Server racks
- Back-up systems
- Fire suppression systems
- Skilled labour
- Good accessibility (for maintenance teams)
- Land availability
- Georedundancy / no hazards
- Favourable zoning and planning conditions
- Multiple security measures
- Fence / security gates / motion detectors
- CCTV / biometric systems
- Close vicinity to internet exchange points
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Growing Tier 2 markets

- The main markets (Tier 1) in Europe are the business and financial centers of Frankfurt, London, Amsterdam and Paris ("FLAP").
- More recently, the hyperscale activity is accelerating its expansion into Tier 2 markets such as Dublin, Zurich, Milan, Stockholm, Warsaw or Madrid.
- While these Tier 2 markets already have an adequate supply of retail colocation, large-scale builds to cater for increasing hyperscale cloud requirements is now driving the demand as the need for lower latency and more efficiency is growing.

Zurich demand hits the tipping point for cloud

- New customer wins with financial services firms, a growing fintech sector, and continuing migration to cloud by Switzerland’s home-grown international companies, have encouraged cloud providers to build cloud regions in Switzerland. Switzerland also has its own data protection requirements that encourage sovereignty, but allow international companies to operate with a European base without having to comply with European Union requirements such as the General Data Protection Regulation (GDPR).
- Zurich currently offers 68 MW of carrier-neutral supply. The market is currently comprised of a mix of wholesale and retail providers. New providers are entering the market and investors are seeking options. We expect hyperscaler requirements to grow. Once a cloud availability zone gains traction, it will expand, leading to spiraling requirements across the region.
- Like many of Europe’s data center hubs, Zurich has challenges with providing land and power for data center builds. As a result, providers are looking further away than Zurich’s city center. The market can be challenging to build in, with Swiss requirements leading to long planning processes. The cantons, which take issues around environment and sustainability seriously, are expected to pay closer attention to the power draw of this fast-growing market.
93 DATA CENTERS on 154,000 sqm as of Q3 2020

77% CONCENTRATED IN ZURICH – GENEVA – BERNE

131 MW POWER CAPACITY*

19% VACANCY RATE (MW)*

> CHF 1,000 AVERAGE RENT PER RACK PER MONTH

COLOCATION SUPPLY*

ZURICH 68 MW REGIONAL POWER CAPACITY
15% VACANCY RATE (MW)

OTHER REGIONS

31 MW POWER CAPACITY
31% VACANCY RATE (MW)

GENEVA 32 MW REGIONAL POWER CAPACITY
18% VACANCY RATE (MW)

NEW CONSTRUCTION

+8,000 sqm OF NEW COMPLETION P.A. SINCE 2010

52,000 sqm AVAILABLE FOR EXTENSIONS ON EXISTING SITES

+14,000 sqm OF NET ADDITION IN 2017-2020

45,000 sqm OF PROJECTS UNDER CONSTRUCTION

53,000 sqm OF PROJECTS PLANNED

CLOUD SERVICES PROVIDERS OPERATING IN SWISS-BASED DATA CENTERS

Source: CBRE, 2021 – Total surface underestimated due to unknown details on ca. 10% of the properties. *MW data known for main colocation data centers only (57 units).
By far the largest number of colocation data centers is located in the canton of Zurich. The region is even more considered as a hub when including the canton of Aargau, where Green Datacenter currently operate three data centers in the municipality of Lupfig and is planning to open three more.

Other cantons with large data center volumes are Vaud, Geneva and Berne with their many international and para-public companies.

Zurich, being the largest and most connected data center hub in Switzerland, is where most cloud regions, or availability zones, are expected to be located. Geneva has seen more limited cloud demand and Geneva tends to be seen as a market for DR purposes or to serve local, Geneva-based needs.

Source: CBRE, IT-Markt.ch, computerworld.ch, various other sources, 2021
The size of the circles reflects the lettable area of the colocation data centers by canton. The figures in brackets reflect the number of datacenters by canton.
With at least 154,000 sqm of colocation space, the Swiss market is very large compared to the country size and among the top ten countries in Europe (UK: ca. 900,000 sqm, Germany: ca. 600,000 sqm, Netherlands: ca. 500,000 sqm). After the Netherlands, Switzerland has the second highest density of data centers compared to its population*.

The average size of data centers has only slightly grown between 2017 and 2020 to ca. 1,660 sqm, but much faster compared to 10 years ago (+20%), mirroring the current consolidation of the sector.

The Zurich region is considered as the main Swiss data center hub with 68 MW of colocation space offered and further 50 MW to be delivered by 2022, while the Geneva region offers total capacities of roughly 32 MW.

The main Swiss colocation data centers show an average occupancy rate of 81% in terms of MW (80% according to the occupation in sqm).

Generally, vacancy rates are lower in Zurich and Geneva (< 20%) compared to the rest of the country (> 30%).

In the Zurich region, as of Q3 2020 another 38,000 sqm were under construction (UC) such as the Vantage Data Centers campus in Winterthur with Phases 1 and 2, Intenxion in Glattbrugg with ZUR3 or the SafeHost property in Rafz (completed in Q4 2020). Furthermore, Green Datacenter in Dielsdorf just got the planning permission for Phase 1 of their Metro-Campus (already included in the pipeline UC).

Source: CBRE, IT-Markt.ch, Computerworld, various sources, 2021
*Only countries with more than one million inhabitants considered **Estimated stock according to date of completion (where applicable)
**CITY SPOTLIGHTS**

**Zurich and Geneva supply (selected data centers, Q3 2020)**

**Demand**  
ICT, banking and insurance, large corporates

**Key facts**  
Colocation supply of 68 MW. Important new tenants since 2019: Google, Microsoft, Oracle.

**Trends**  
Approx. 50 MW of colocation supply in the pipeline until 2022. More data centers planned by Vantage Data Centers in Winterthur (2 UC, 2 planned), by Green Datacenter in Lupfig (3 existing, 3 planned) and in Dielsdorf (1 UC, 2 planned).

Source: CBRE, 2021

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**Geneva**

**Demand**  
Financial sector, corporates / SMEs, international organisations

**Key facts**  
Colocation supply of 32 MW. Equinix data center in the CBD under major renovation. One hyperscaler acquired large colocation capacities in 2019.

**Trends**  
Local provider Infomaniak expanding in Switzerland. Increasing vacancy due to market consolidation. Enterprise data centers being vacated (e.g. Thomson Reuters).

Source: CBRE, 2021
Domestic operators of data centers in Switzerland represent a large share of the market, including colocation providers SafeHost and Green Datacenter (owned by infrastructure-focused investor InfraVia Capital Partners) or telecommunication provider Swisscom.

International operators such as Equinix or Interxion are still expanding in Switzerland, mostly in the greater Zurich region.

Cloud providers such as Google, Oracle and Microsoft have developed their facilities in the last two years, while AWS will open their data centers by 2022. These cloud companies typically join-up with domestic or international operators to run their data centers.

The dominant form of data center transactions is merger and acquisition deals (M&A), representing ca. 75% of the transactions across Europe and funded by international private equity firms and infrastructure funds. The same trend holds true for Switzerland, as reflected by the recent takeover of the Swiss provider Green Datacenter.

Only very few data center asset deals have been recorded in Switzerland so far. Nevertheless, transactions of mixed-use buildings accommodating a proportion of data center space have amounted to approx. CHF 550 million over the last 10 years (source: RCA). Most of these deals consisted of data center space of telecommunication companies (e.g. former Swisscom properties).

With the rise of cloud solutions, one can expect more enterprise data center asset (sale and lease-back) transactions to take place in the foreseeable future.
Operational Exposure

Risk / Return

POWERED SHELL
- Pricing comparable with prime industrial
- Leased on a CHF/sqm basis. Comparable to industrial rent with +20–30% premium.
- The real estate component of a data center often represents only 20–30% of the overall investment, with mechanical and electrical (M&E) infrastructure accounting for 70–80%.
- Tenant owns and has responsibility for M&E maintenance / replacement capex, which reduces the landlord risk.

FULLY FITTED
- Higher risk and returns reflecting increased operational exposure by investor.
- Rent calculated on a price per kW basis
- Landlord is responsible for M&E maintenance / replacement.

TURNKEY
- Single asset or platform transactions where the investor typically inherits all service level agreement (SLA) liabilities, supplier contracts etc.
- Wholesale facilities attract higher multiples vs. retail facilities thanks to larger and longer term lease contracts.

Transaction Models

⇒ Often used in the case of sale and lease-back transactions and of special interest to investors with no data center experience.
⇒ Prime yields are comparable to prime industrial yields (4-6% NIY).
⇒ Full fit-out is made available to the lessee and the owner assumes full operator responsibility (M&E included in the rent).
⇒ Hybrid models (e.g. triple net lease), where the tenant is responsible of maintaining the equipment, can also be applied.
⇒ Full fit-out is made available to the lessee and the owner assumes full operator responsibility.
⇒ Typical M&A transaction model
CBRE SERVICES
How can we assist?

FULL SERVICE DATA CENTER REAL ESTATE OFFERING

CONSULTING
ADVISORY & TRANSACTION SERVICES
PROJECT MANAGEMENT
INTEGRATED DATA CENTER OPERATIONS

Strategic Planning
Needs Analysis
Site Selection & Acquisition
Design & Construction Management
Operations & Maintenance
Upgrades & Modifications
Dispositions

EMEA
339 DCs, 2.94M sqm, 26 Countries

Americas
342 DCs, 2.96M sqm, 11 Countries

APAC
123 DCs, 1.07M sqm, 13 Countries

6.97M sqm
Managed Space

800+
Managed Data Centers

6,000+
Data Center Technicians

300+
Data Center Project Managers

TOTAL
End-To-End Services

Enterprise
403 DCs, 3.49M sqm, 50.12%

Colocation
291 DCs, 2.52M sqm, 36.19%

Cloud
110 DCs, 0.96M sqm, 13.68%

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