Openfield Smart Building Platform ↔ ADT Azure Digital Twins integration

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Openfield Smart Building Platform introduction

- We provide a unique **Data Platform** that supports : Data **collection, transformation & correction**, Spatial **adjustments** and outliers filtering, **KPIs & alerts generation** and aggregation among a **wide variety of business uses cases** tailored to the real estate and smart building.

- Our platform was born in the Stadium/Entertainment industries, connecting various infrastructure and business systems, and progressively expanded to the retail and real estate, integrating Asset & Facility manager oriented KPIs that help Space, Energy, Comfort, and Operations optimization.

- We are experts in **Location Intelligence** and **Data Science** tailored to the smart building Industry.

2013
Founded year

25
Employees

+8 M€
Invested in R&D

30
Clients

23
Sites

Illustrative References

Awards

BATiMAT AWARDS INNOVATION *le mondial du bâtiment 2019*
2019 challenge winner

SBA SMART BUILDINGS ALLIANCE FOR SMART CITIES
Active member of the French Smart Building Alliance (AI workgroup)

2019 Trophee winner for real estate digital transformation

Openfield Smart Building sample KPIs

Hypervision KPIs

- **Energy consumption and cost** and across the portfolio, and **related to real occupancy**
- Average consumption /sq.m, occupant, with HDD, and comparisons across assets
- **Occupancy metrics and costs across the portfolio**
- Aggregated **air quality and health / risks indexes**
- **Discomfort time** computations
- **Occupancy** split by **assets, levels, space type, client departments**

Flow KPIs

- **Social interaction flows** across the building / **department** (using WiFi data)
- **Facilty service provider** (eg. canteen) **KPIs** such as Nb of visitors, **waiting queue length and duration**, visit duration and split by arrival, **Attendance prediction**

Comfort KPIs

- **Exhaustive Comfort and Air quality metrics analysis** : Temperature, Humidity, CO_2, VOC, NO_2, PM2.5/PM10, Radon, temperature,…
- **Spatial distribution, discomfort time** per occupant and **per** associated **business department**
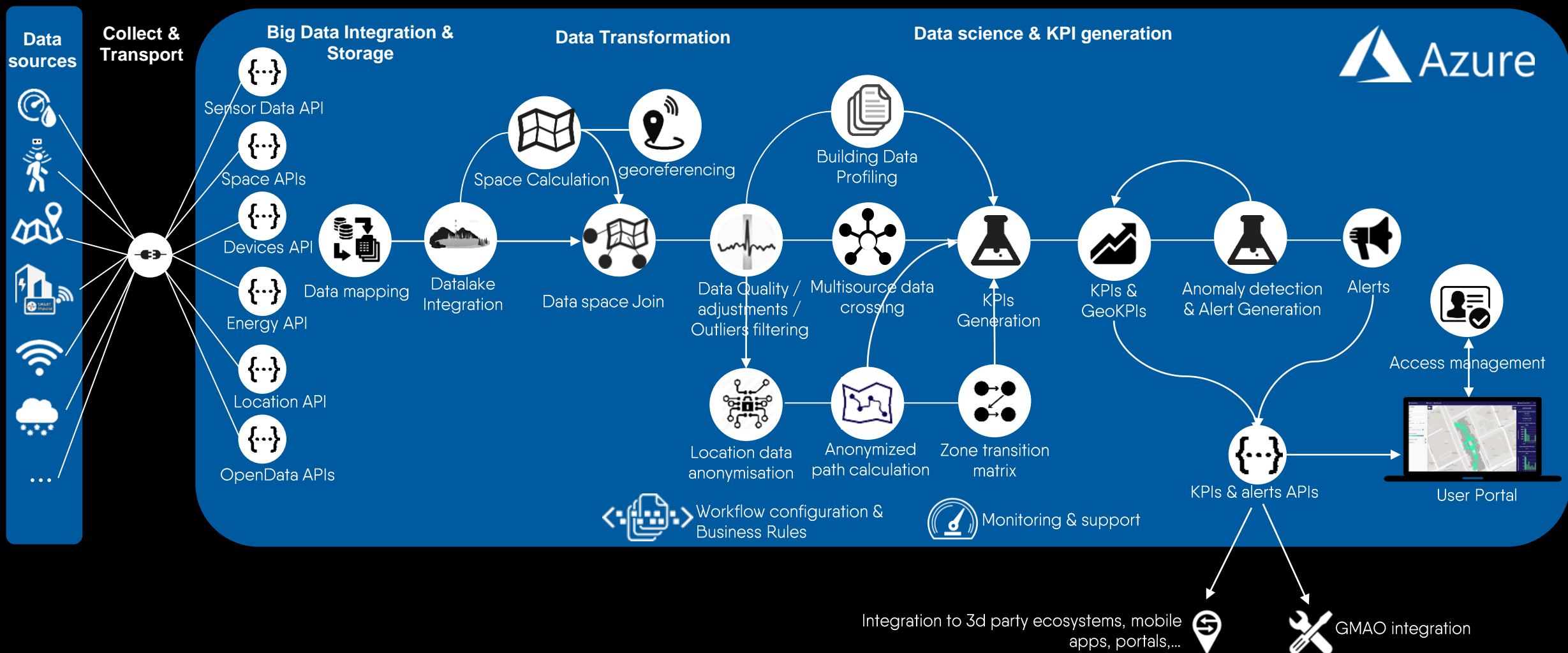- **Virus propagation** and **Health indexes** processing

Energy efficiency KPIs

- **Energy consumption KPIs** by: day, occupant (real), building, type of usages (split between HVAC, Heating, IT, others,..)
- **Consumption profile** computation
- **Calendar and timeseries** analysis
- Consumption correlated **with working period** and outside **T°**
- **Carbon footprint impact**

Occupancy KPIs

- **Occupancy rate and cost** (per building, level, day, occupant,..)
- **Simultaneous filling rate,** meeting room availability, occupancy **duration by Department, occupancy profiles** (by weekday and hours)
- **Remote working and Space availability simulator**, with minimum & optimum rental strategy definition

Openfield Smart Building logical flow

Openfield Smart Building Platform key features

Spatial joins and Data joins

Data correction

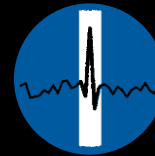Advanced spatio-temporal analytics

Multi-sources data crossing

Advanced ML / Datascience
processing & KPI generation

K-anonymization processing
for location data

API Based Data exchanges
(IN / OUT)

Advanced anomaly detection
components

Fully scalable / Big Data Architecture

Fully configurable dataviz portal

Configurable workflows (functional /
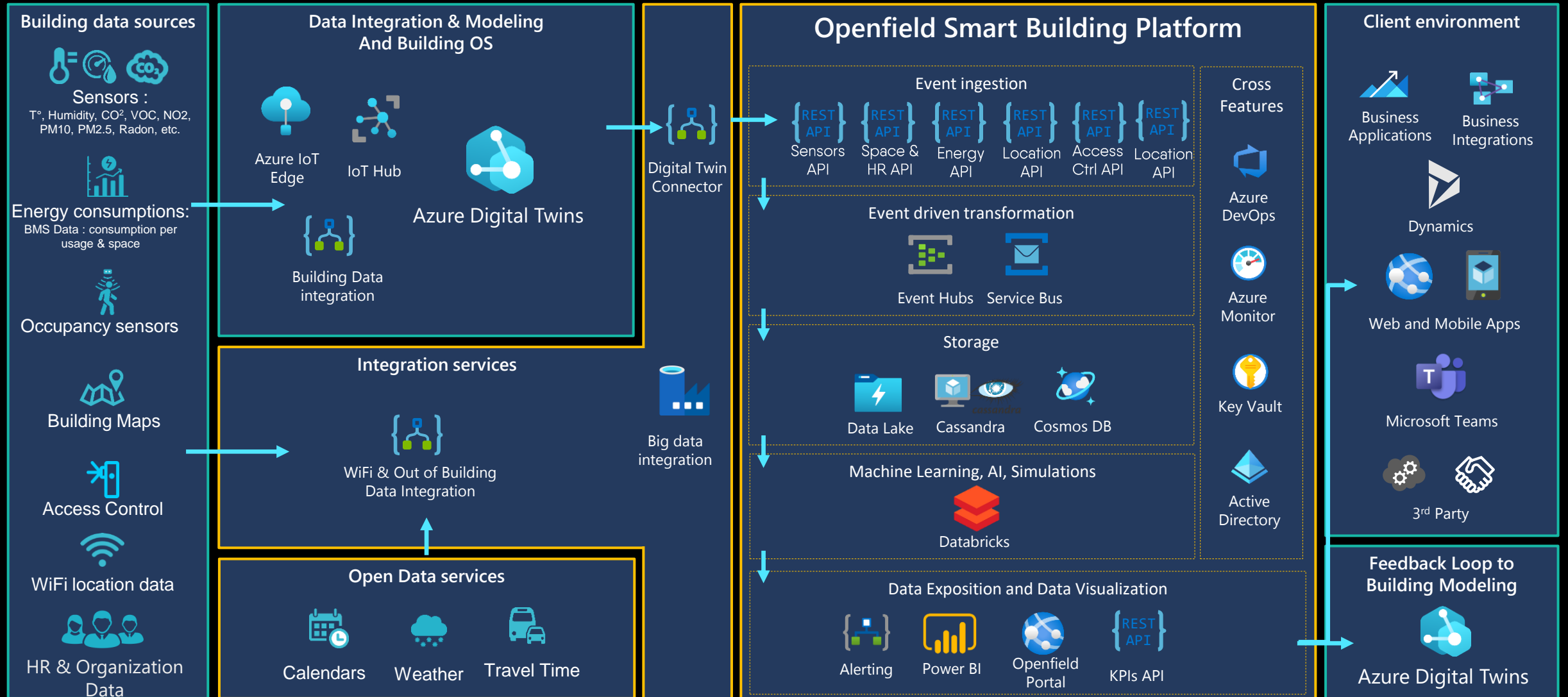spatial / temporal configs)

Powered by Microsoft Azure

Openfield Smart Building / ADT integration

Client Environment

Openfield Environment

Building data sources

Sensors :
T°, Humidity, CO², VOC, NO2, PM10, PM2.5, Radon, etc.

Energy consumptions:
BMS Data : consumption per usage & space

Occupancy sensors

Building Maps

Access Control

WiFi location data

HR & Organization Data

Data Integration & Modeling And Building OS

Azure IoT Edge

IoT Hub

Azure Digital Twins

Building Data integration

Integration services

WiFi & Out of Building Data Integration

Open Data services

Calendars

Weather

Travel Time

Digital Twin Connector

Big data integration

Openfield Smart Building Platform

Event ingestion

REST API — Sensors API

REST API — Space & HR API

REST API — Energy API

REST API — Location API

REST API — Access Ctrl API

REST API — Location API

Event driven transformation

Event Hubs

Service Bus

Storage

Data Lake

Cassandra

Cosmos DB

Machine Learning, AI, Simulations

Databricks

Data Exposition and Data Visualization

Alerting

Power BI

Openfield Portal

KPIs API

Cross Features

Azure DevOps

Azure Monitor

Key Vault

Active Directory

Client environment

Business Applications

Business Integrations

Dynamics

Web and Mobile Apps

Microsoft Teams

3rd Party

Feedback Loop to Building Modeling

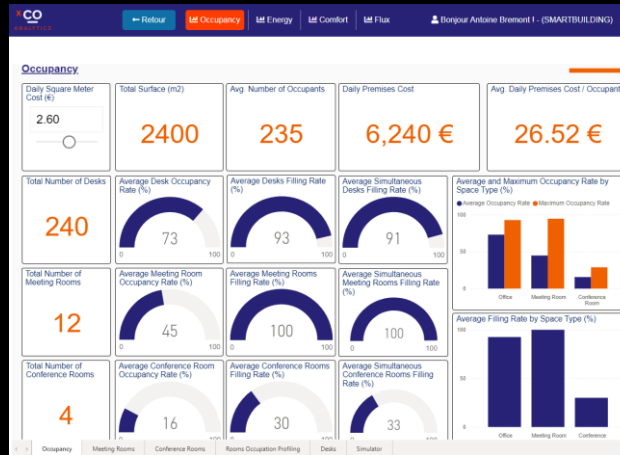Azure Digital Twins

Hypervision dashboards

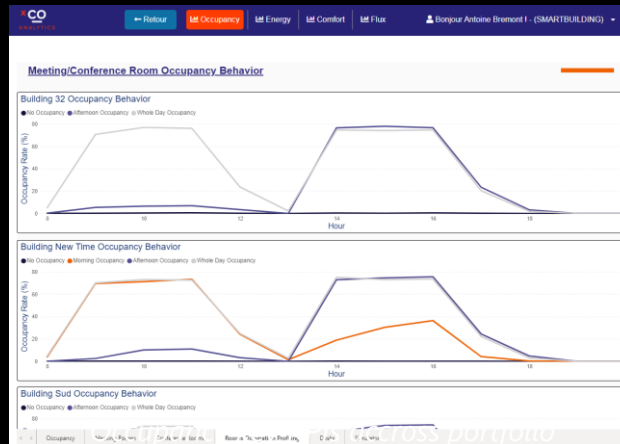Energy, occupancy and comfort KPIs across portfolio

Occupancy Dashboard and Remote working simulator

Detailed Office / Meeting Room / Conf Room
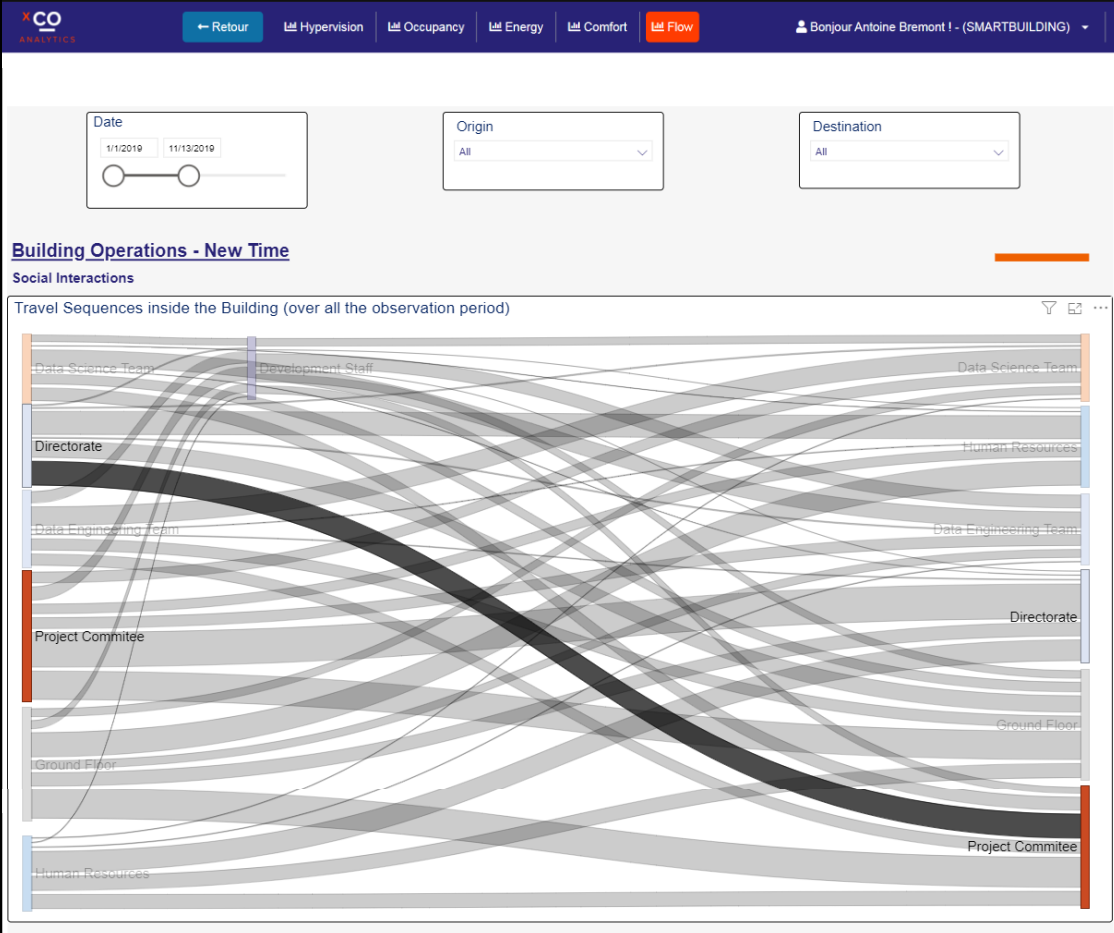multi-site dashboards

Occupancy key KPIs accross portfolio
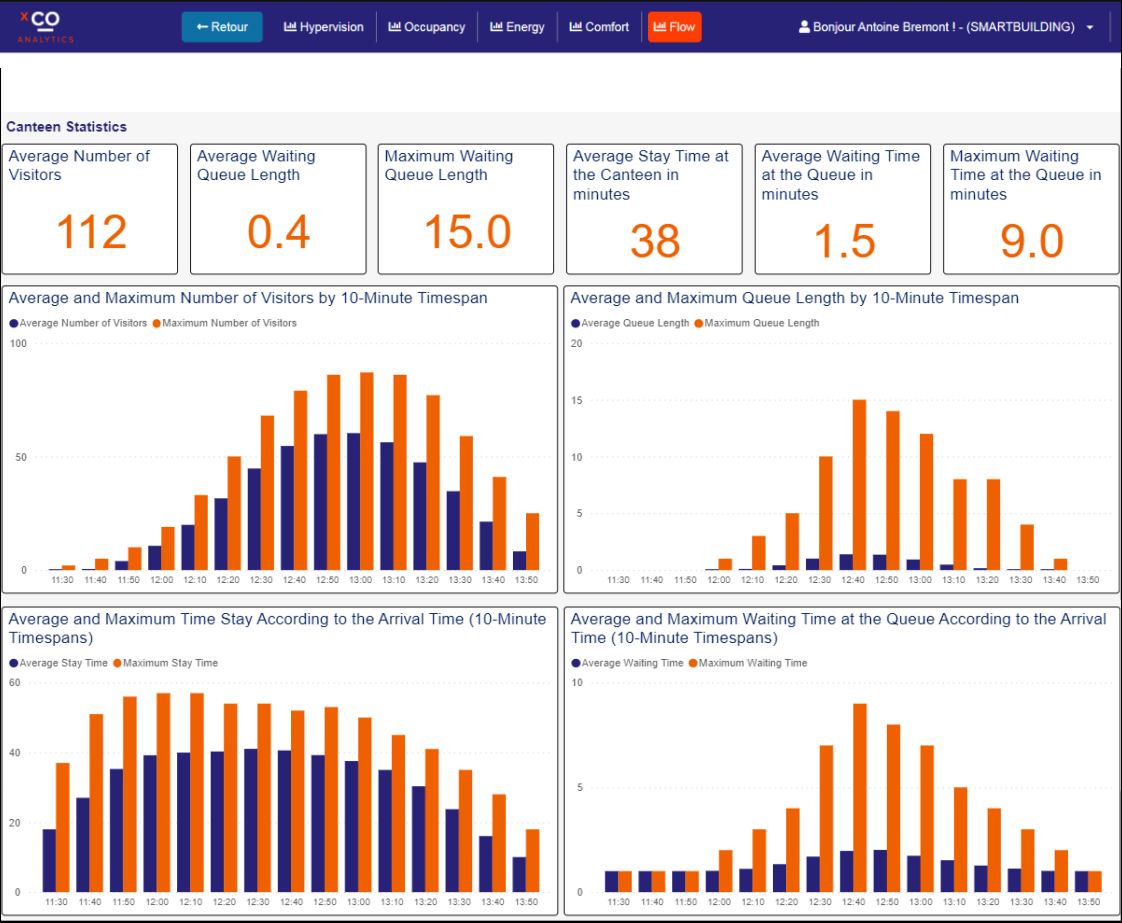

Building occupancy profiles across portfolio

Remote Working detailed analytics and
Simulator

Building usage flows and waiting time
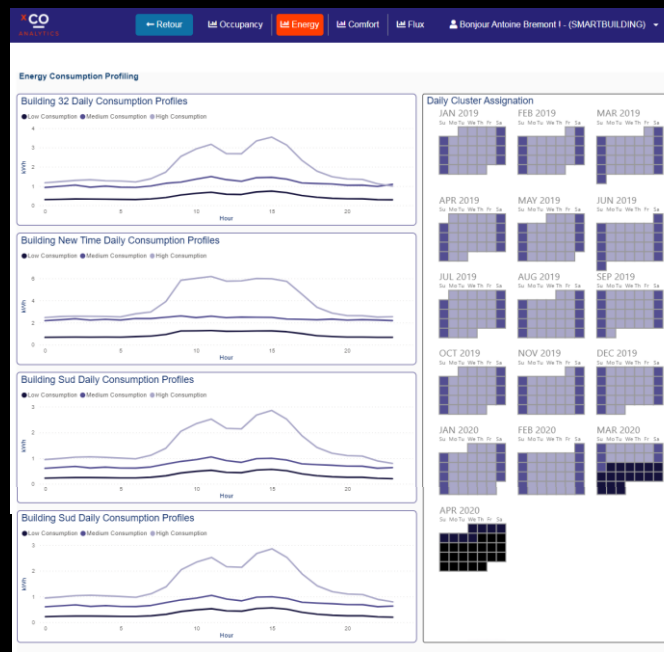

Building usage flows across entities

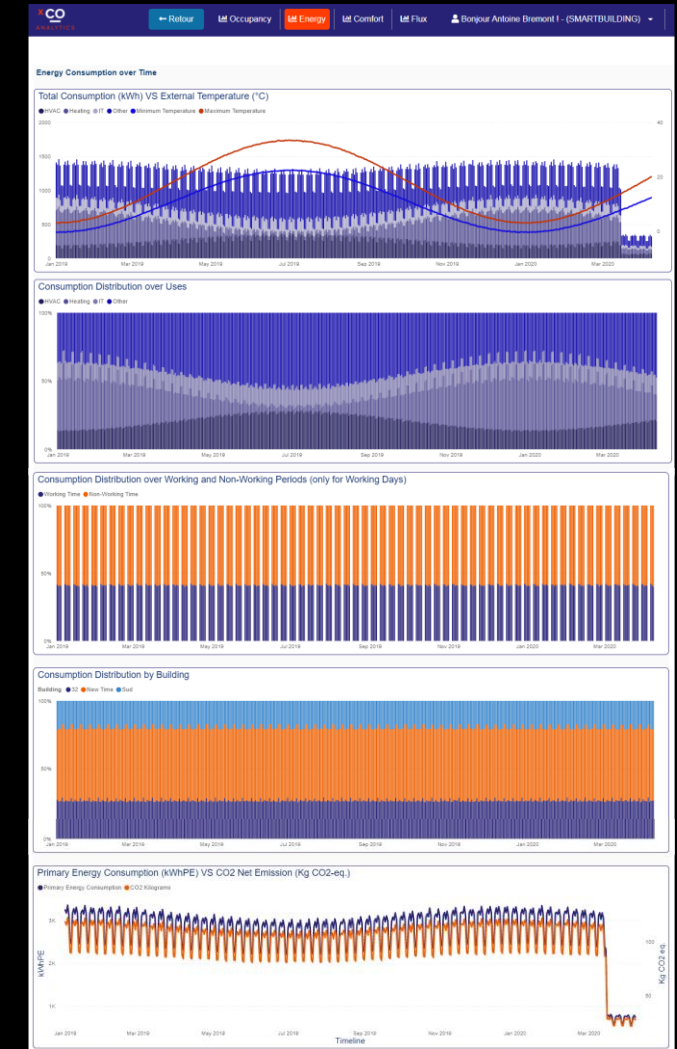*Waiting and arrival time at service zones*

Energy consumption Dashboards

Detailed Energy Consumption monitoring across portfolio

Building energy profiles across portfolio

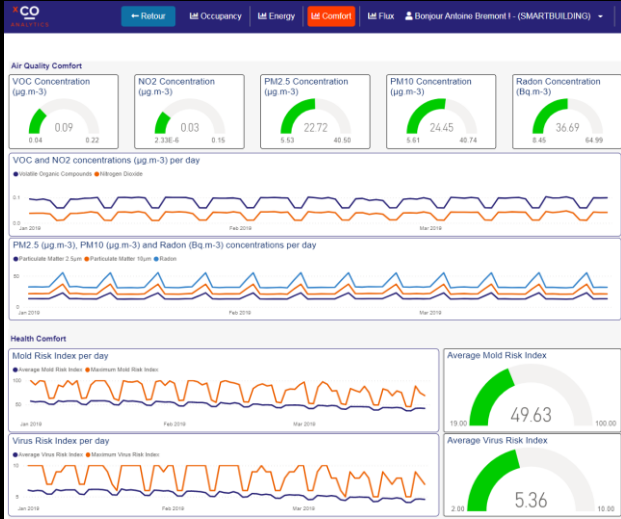*Consumption timeseries analytics*

Comfort and Air Quality Dashboards

Multi-site comfort dashboards

Spatial comfort and average Discomfort durations

Air Quality and Health Comfort metrics accross portfolio

Thank you!