



CitA | **TECHLIVE** 2022

Challenge, Change, Learn

Welcome to TechLive 2022

by CitA, Ireland's premier
multidisciplinary construction
network.



- **Siemens introduction**
- **Smart Buildings**
- **Digitally enabled Building Services**
- **IoT Solutions**
- **Reference cases**



174 years of innovation

**R&D expenditure of €4.9 billion¹
holding 43,400 granted patents²**

**First major industrial company to
commit to becoming carbon neutral**

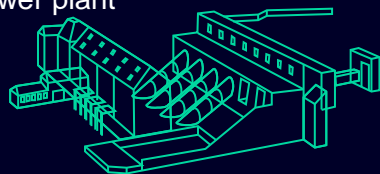
¹ In fiscal 2021 | ² As of September 30, 2021





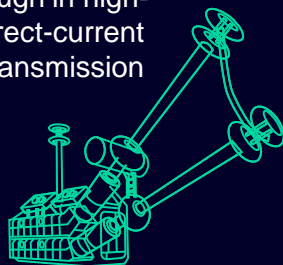
1925

Siemens electrifies the Irish Free State with the Ardnacrusha hydroelectric power plant



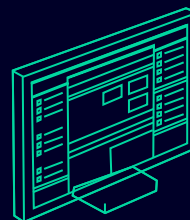
1975

Breakthrough in high-voltage direct-current (HVDC) transmission



2010

TIA Portal takes automation a stage further



2015

Launched Desigo CC advanced building management platform

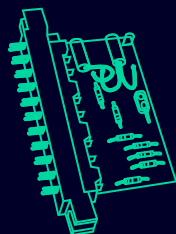
2020

Enlighted IoT Solutions and Comfy workplace app makes it safe to return to the office during the coronavirus pandemic



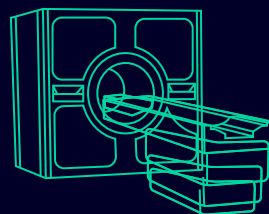
1959

SIMATIC revolutionizes automation



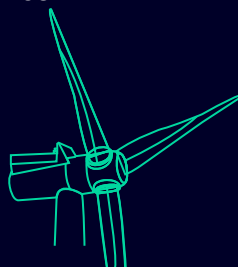
1983

First magnetic resonance imaging scanner



2012

Test operation of the world's largest rotor for offshore wind turbines



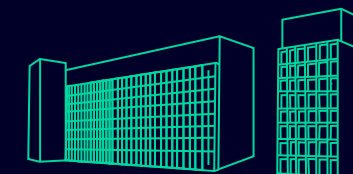
2018

Charter of Trust, a joint initiative for a secure digital world

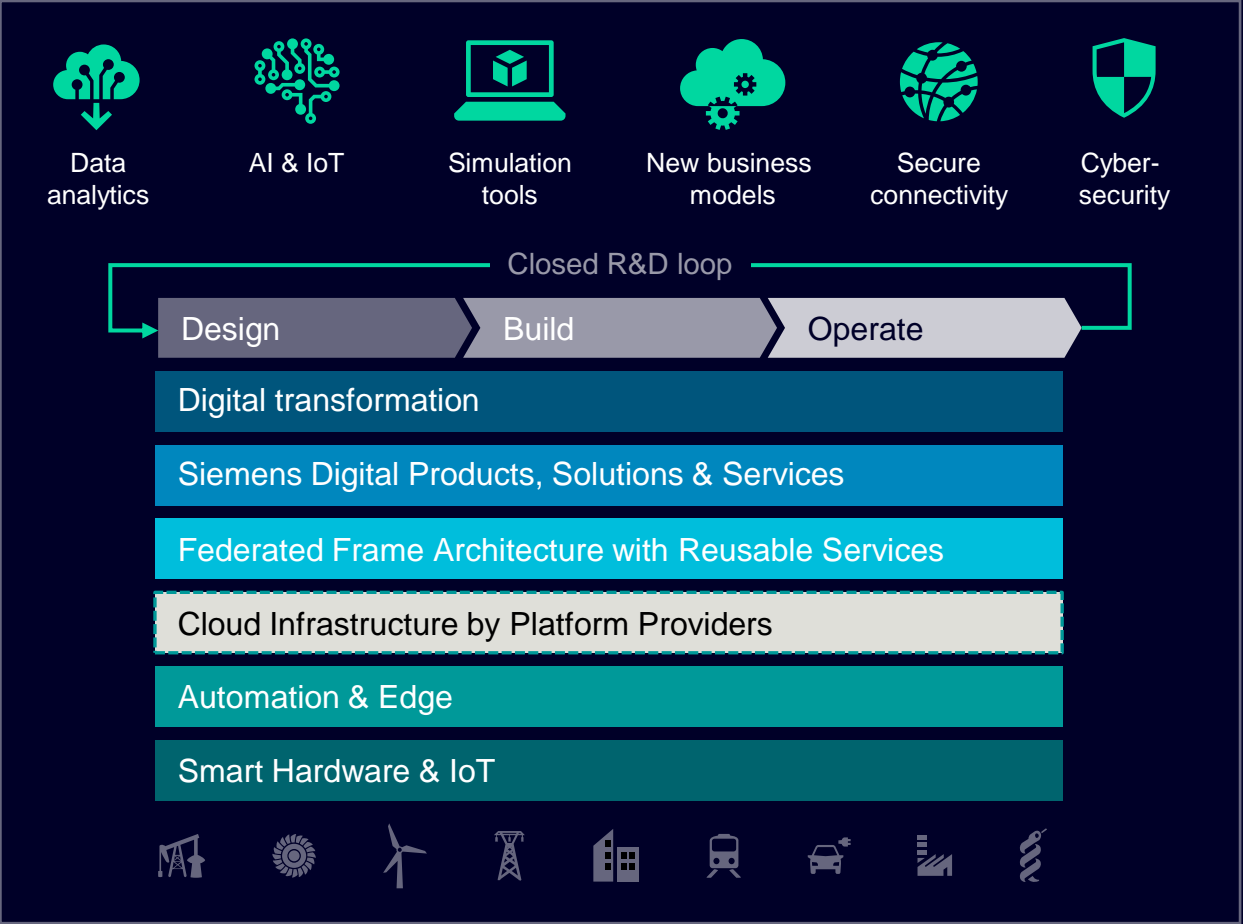


2022

Acquisition of EcoDomus' software to expand digital twin for buildings offering



Siemens Digital portfolio



Top 10

Siemens is one of the top 10 software companies¹

€5.6 billion

digital revenue¹ to grow with 10% CAGR until FY25

~44,000

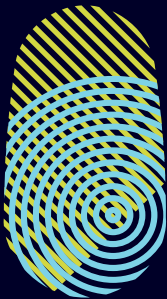
employees in digital jobs at Siemens²

~430

digital offerings¹

€10 billion

invested in digital companies in the past 10 years¹



Charter of Trust

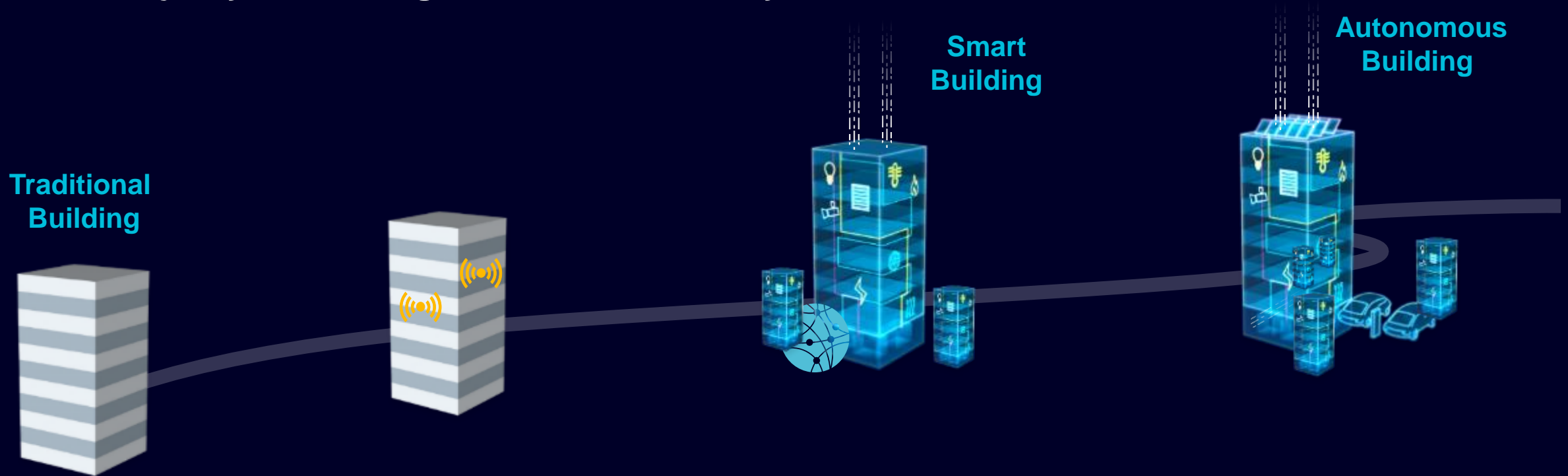
charteroftrust.com

¹ In fiscal 2021 | ² As of September 30, 2021



So where are we on the journey from a traditional to a smart building and beyond?

Will the majority of buildings that we build today meet our 2030 demands?



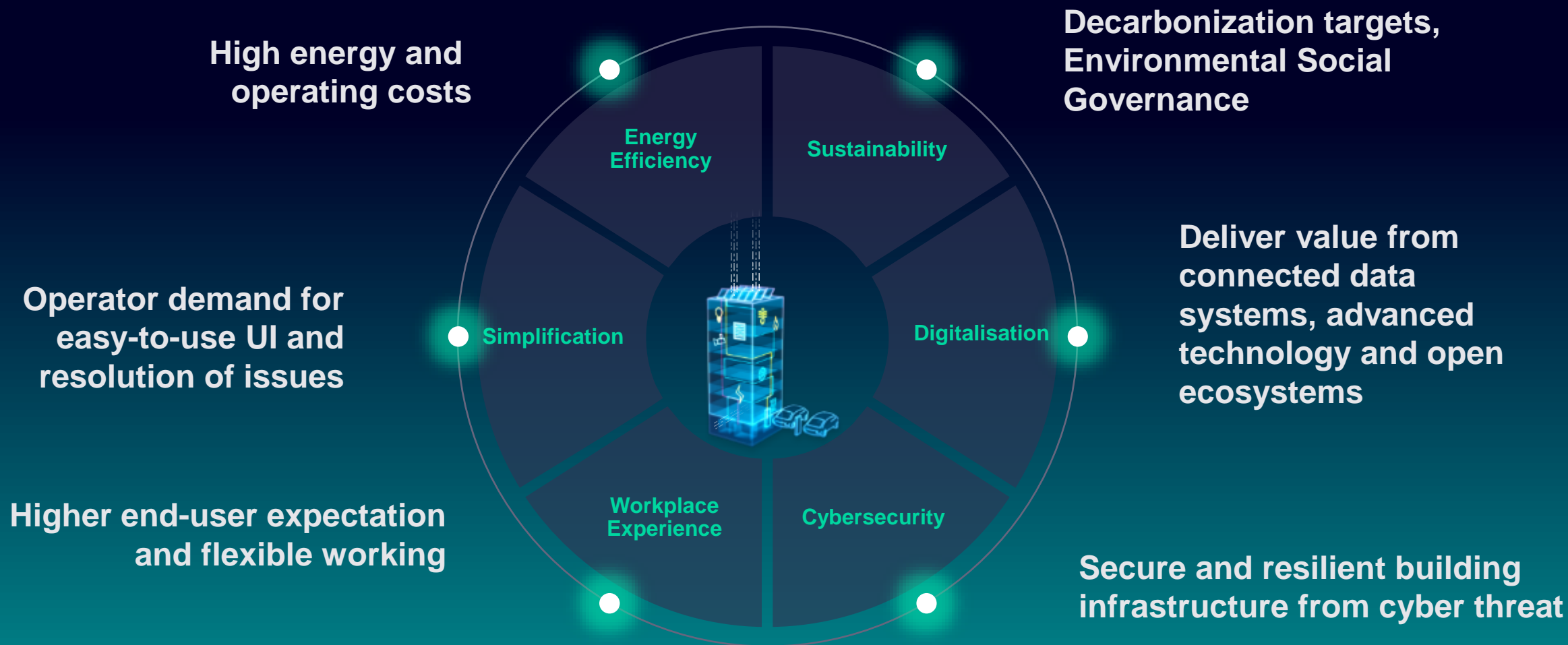
From ...

- Reactive on-site service & connected remote
- On-site solutions
- Complex integration process
- Siloed domain control
- Time scheduled operation, limited flexibility

To ...

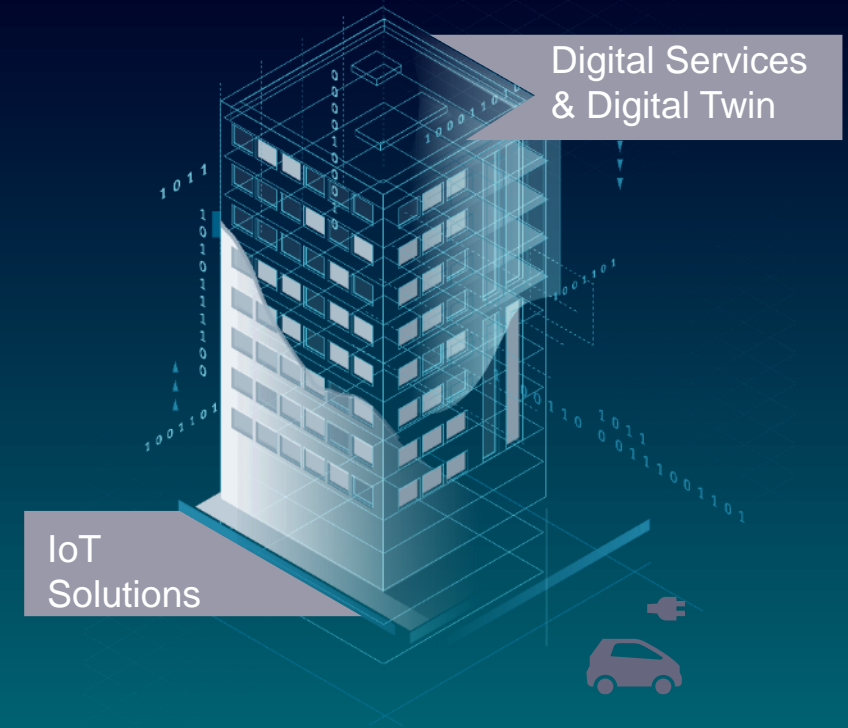
- Predictive & prescriptive
- AI-enabled remote operations
- Simple & easy integration
- Intuitive access to common data environment
- User centric, responsive & self-adapting workplace
- Interaction with surrounding systems

Customer needs and trends reshaping the building industry

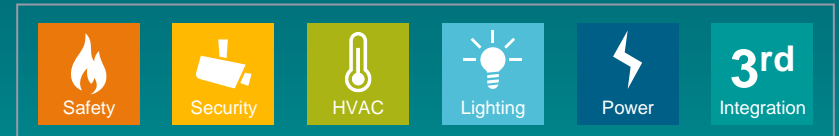


Delivering value: increase productivity, flexibility and sustainability with smarter, digitally enabled buildings

User-centric	<ul style="list-style-type: none">✓ Delight employees creating the best workplace experience that integrates work and life and by enabling high performing services, increasing productivity and retention✓ Provide the right spaces based on feedback on the way buildings are actually being used✓ Find the easiest way to colleagues, spaces, assets and amenities.✓ Notify employees about emergencies, incidents or events in an effective and efficient way✓ Ensure health and safety and maintain business continuity✓ Buildings that actively respond, learn and contribute towards the purpose of the space
Flexible	<ul style="list-style-type: none">✓ Create a collaborative, resource efficient workplace experience, delivering a data-driven portfolio optimisation,✓ Gain productivity and satisfaction of your employees while offering the right amenities✓ Ensure frictionless business operations with predictive maintenance, advanced planning, automated workflows, responsive systems and easy issue reporting
Sustainable	<ul style="list-style-type: none">✓ Drive sustainability and decarbonisation while making mobility green✓ Continuously monitor and optimise operations and increase resource efficiency✓ Comply with targets & directives while creating transparency about your energy management efforts✓ Striving for ESG improvement while automatically collecting and reporting relevant data
Standards	<ul style="list-style-type: none">✓ Cyber secure and resilient infrastructure for business continuity - iso 27001✓ Embrace and drive standards - iso 19650, iso 52000, EN15232.....✓ Bring data sources together from design, build, operation for advanced data analytics



User-centric | Flexible | Sustainable



Every industry has its unique challenge that can be answered with IoT Solutions & Digital Building Services



Smart Hospital

- Patient safety and quality of care
- Resource and process efficiency
- Patient and staff digital enabled experience



Smart Office

- Digital office experience
- Agile workplaces and workflows
- Space use feedback & improvement



Smart Campus

- Digital university campus experience
- Engaged students and enriched faculty
- Equipment and energy optimization



Retail & Hospitality

- Improve customer experience
- Optimize layout & asset performance
- Energy savings & sustainability



Warehouse & Logistics

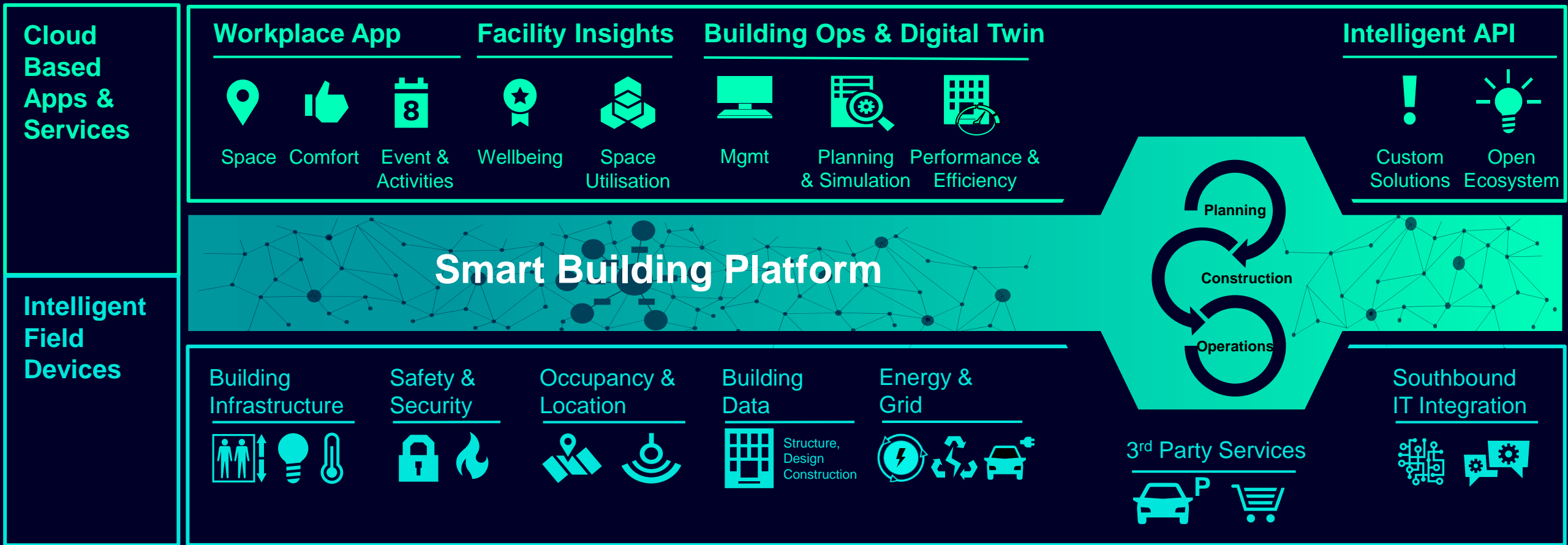
- Improve productivity of logistics
- Optimize and automate processes
- Energy savings & sustainability



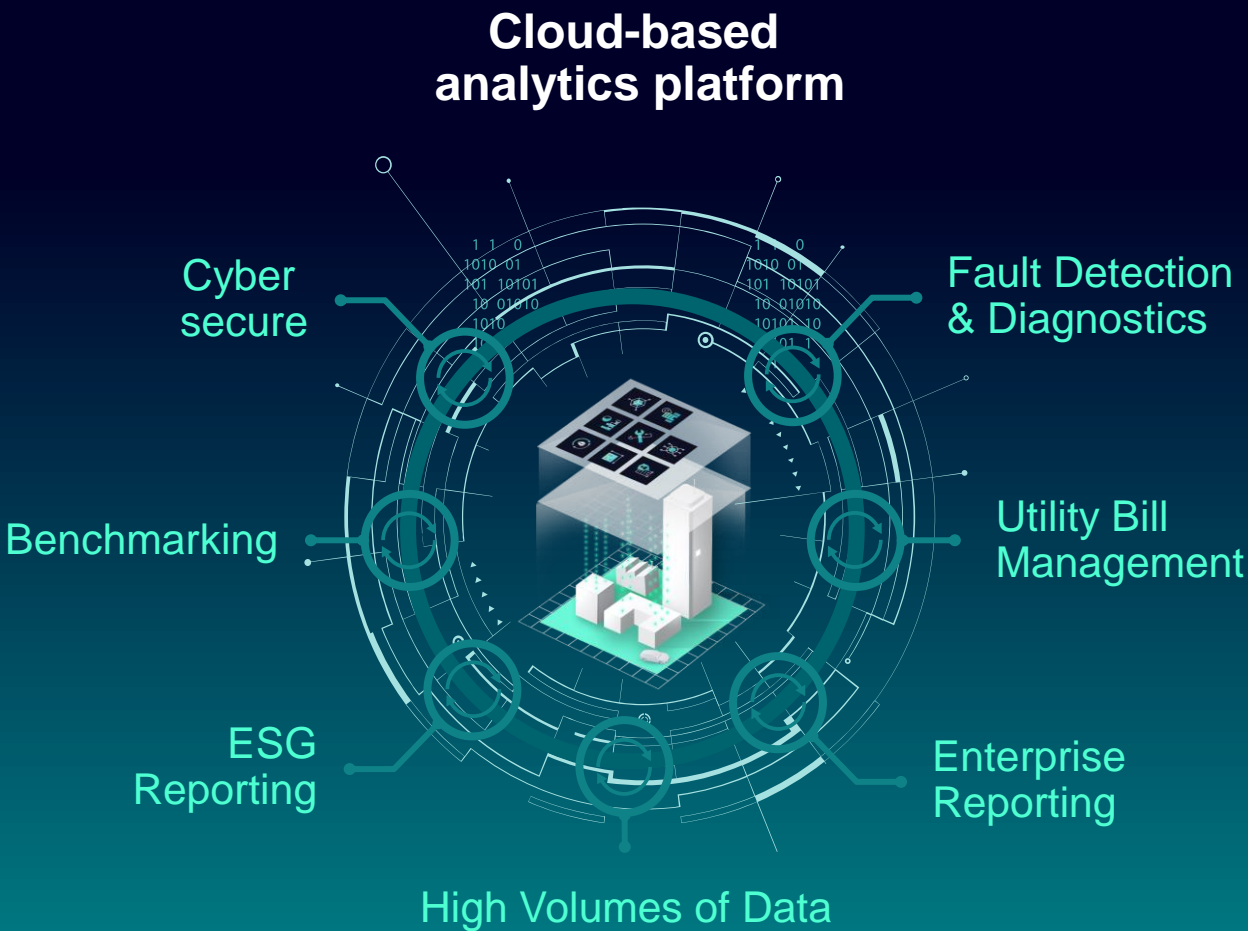
Manufacturing

- Ensure production quality and continuity
- Employee safety and security
- Process and energy optimization

Smart Building Platform – Example Architecture



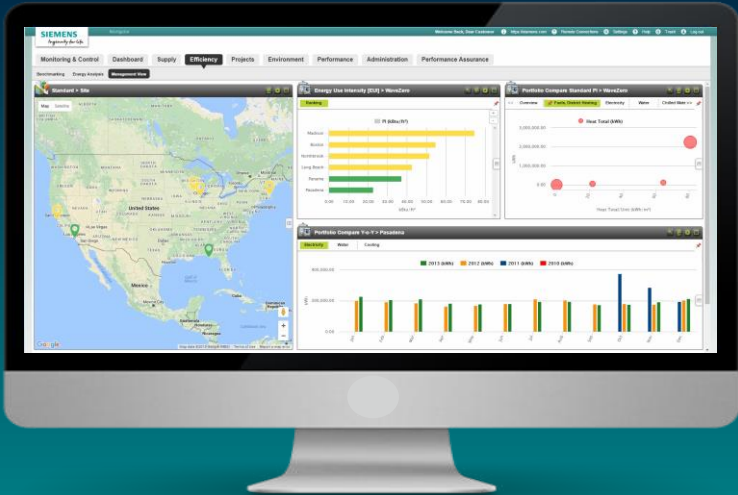
Cloud-based analytics platform for building performance and KPI reporting



75,000 connected buildings and counting

350+ pre-defined smart building analytics rules

400m data-values collected and analysed each day

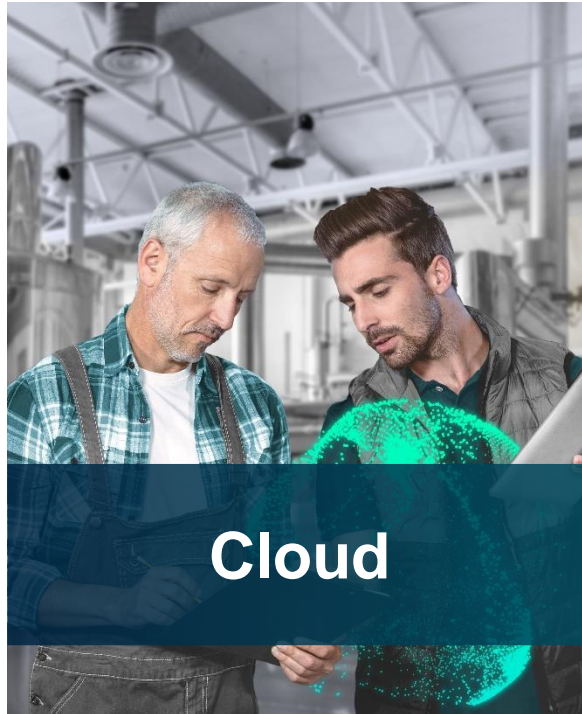


IoT Solutions turn real-time data from the building, its occupants and their surroundings into actions & actionable insights, to enhance our experiences



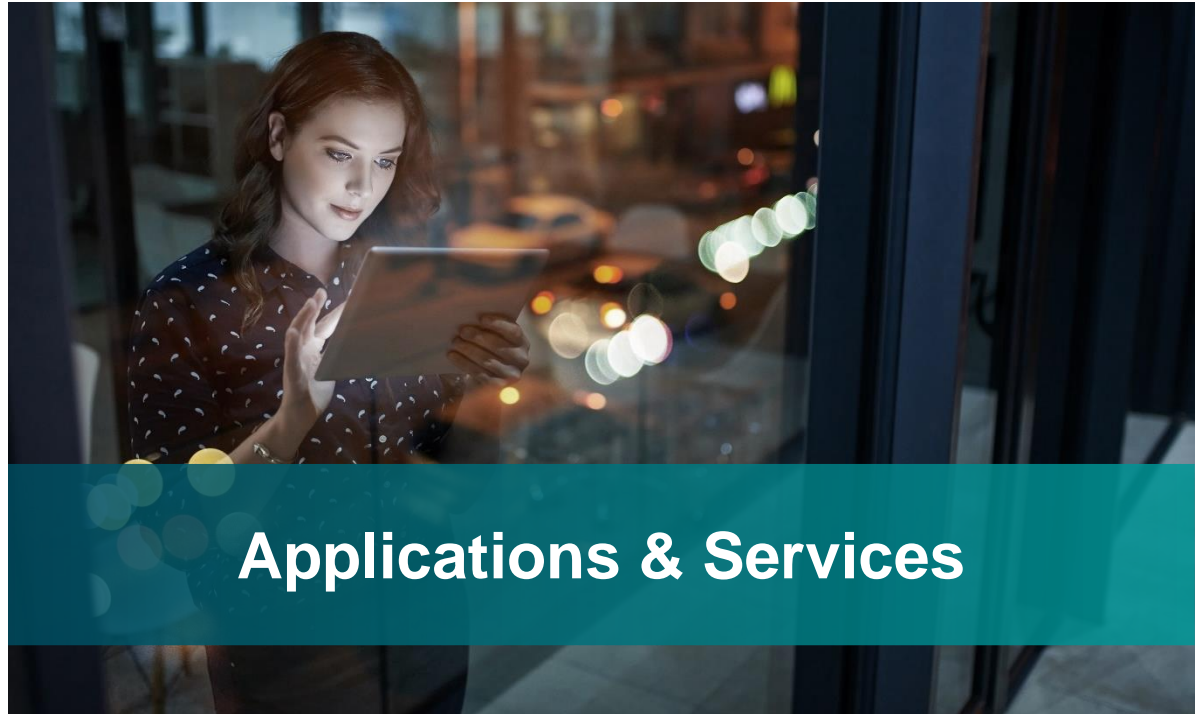
Smart Sensors & Devices

IoT endpoints capture, store and process valuable data and complete procedures and interactions based on detected conditions



Cloud

Near real-time data is collected and managed securely in the cloud. Assets are controlled, managed and updated.

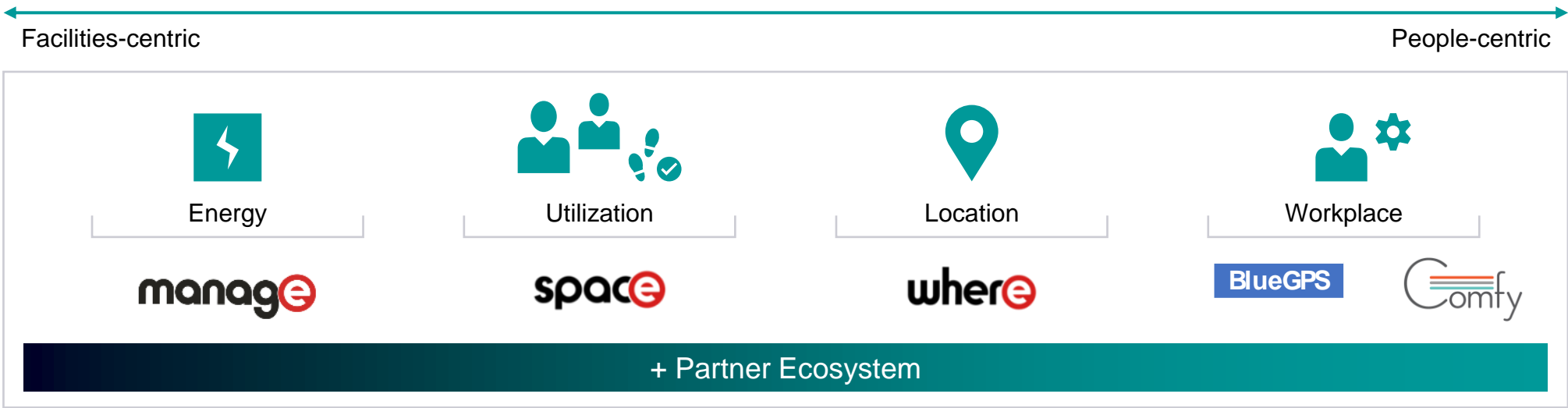


Applications & Services

Advanced analysis delivers actionable insights, system learning and opens up opportunities for AI.

To support our people, businesses, buildings, and operations to reach their full potential

Enlightened IoT Solutions enhance our Smart Buildings offering with smart sensors, applications, services and an open ecosystem



IoT solutions
Cloud
Applications
and Services

Smart
Sensors



Measure:



Energy



Motion



Ambient
light



Temperature

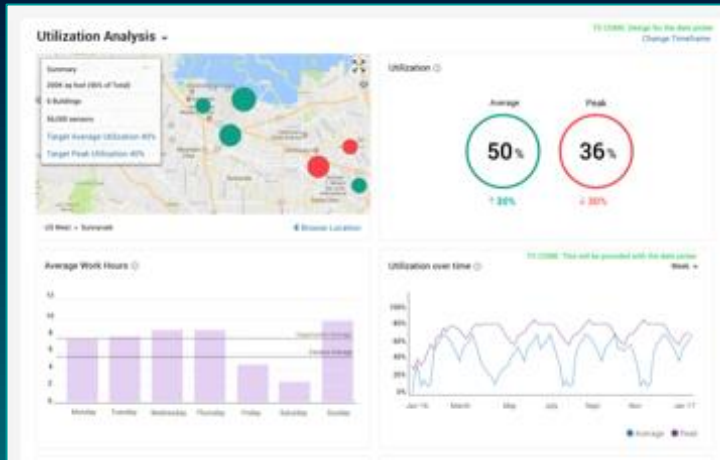


Bluetooth



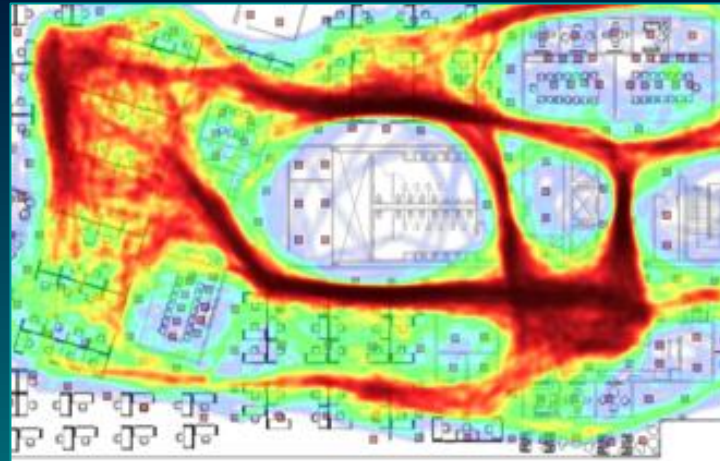
Dashboards

Key portfolio-, building-level metrics



Analyse Space

Utilisation, motion, occupancy per zone and/or floor with visualisations and reports



Data-driven Actions

- Increase space utilisation
- Optimise space design
- Improve workspace flow
- Facilities management





UNIVERSITY OF
BIRMINGHAM



“The University of Birmingham partners with Siemens to create the smartest university campus in the world”

- 10-year collaborative partnership
- Measures proposed will translate into reducing emissions by nearly 3,000 tCO₂ p/a
- Energy performance services
- Off-balance sheet financing solution
- Roadmap and first step in transition to Net-Zero CO₂
- Campus wide energy upgrades
- Data driven energy and asset intelligence
- Enlighted IoT Solution
- Research & Innovation collaboration including Living Lab
- Access-to and integration-of a wide variety of datasets that can be embedded into the curriculum

SIEMENS



Ankara City Hospital, Turkey

"As a team we built a totally digital hospital and Siemens Smart Infrastructure played a major role here."

Murat Bayar – CEO, CCN Holding

1.3m m²

one of the world's largest hospitals

22

subsystems controlled by one single management platform

24/7

on-site technical support

Ankara City Hospital Integration Overview

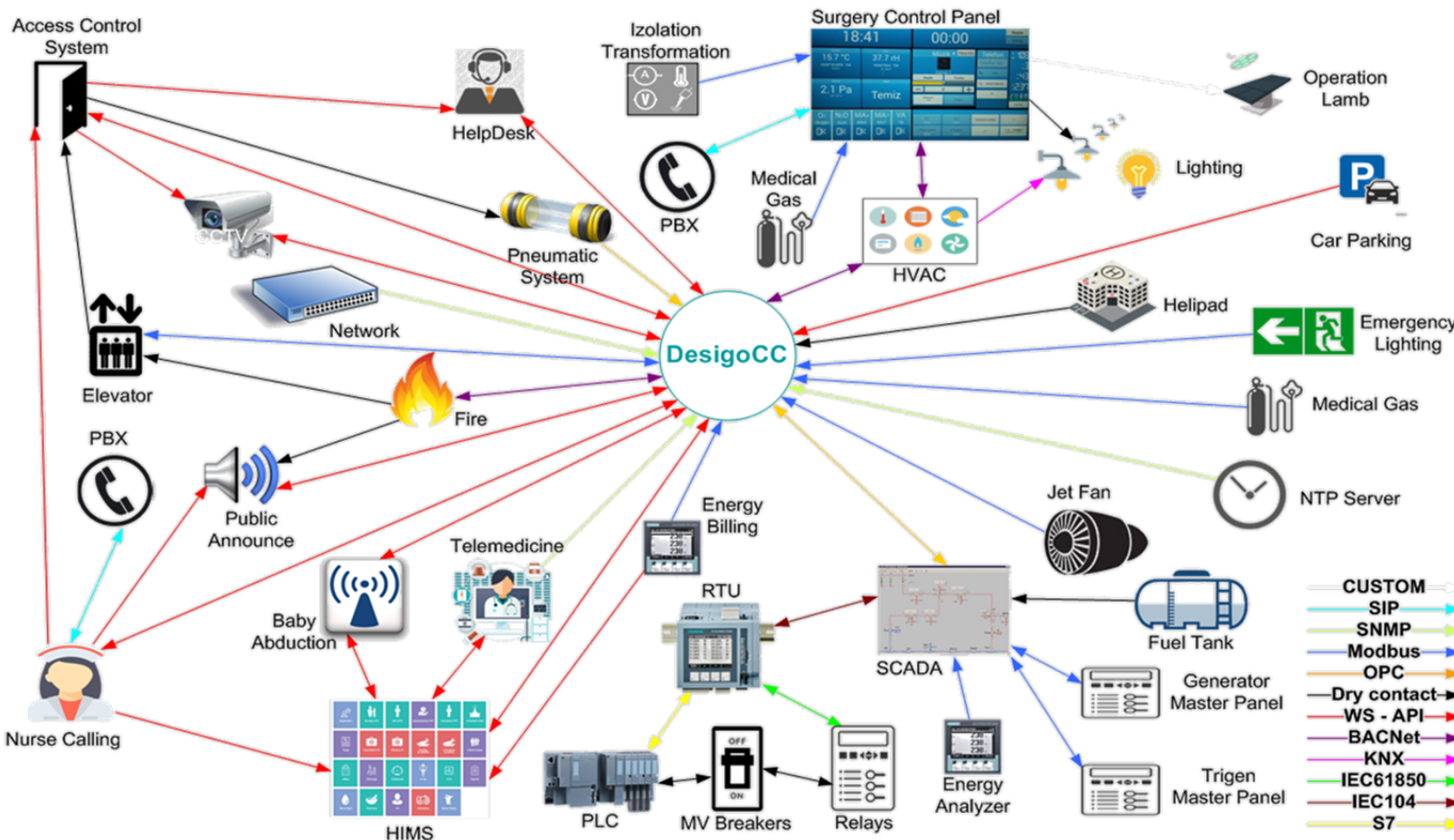


Customer Benefits

- Operational efficiency due to **one integrated management platform** for mechanical & electrical subsystems.
- One Energy** system to monitor and control all subsystems
- Ensure reliable**, available and safe **energy supply**
- Improve operational efficiency due to load shedding
- Back to back SLA responsibility.
- Operational excellence due to active & emergency scenarios to be performed automatically
- Elimination of one point of failure** due to Distributed Server Architecture

Design supply, installation, testing & commissioning of **22 systems** integrated under Desigo CC w. a total of **800,000 data points**:

- Fire alarm, HVAC & KNX, Access, MCC panels & Energy SCADA
- Other systems: PAVA, IP CCTV, Nurse Call, Data Network, Baby Tracking, Car Park Automation Systems, Pro-A/V, Telemedicine, Surgery Automation, Central Clock
- 5 Years of Service Agreement with SLA responsibility



Improving how people live and work by making smart buildings real



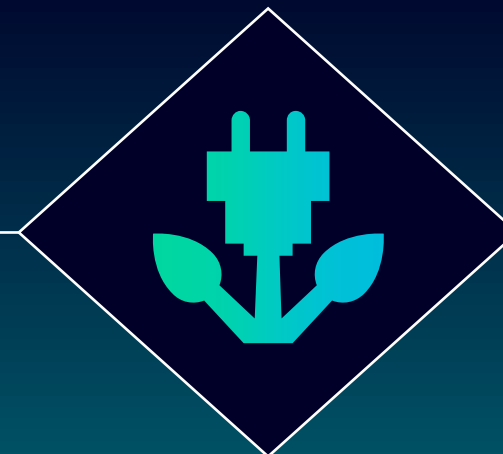
**People centric for
improved experience**



**Building assets
and business goals**



**Sustainability and
energy-efficiency**



Siemens with our partners and customers makes smart buildings real by combining the real and the digital worlds to create sustainable, innovative value for people, businesses and the generations to come