

# Ingenuity for life creates perfect places.

Building Technologies Division Presentation  
2017/18

All around the globe, we work for our customers

**SIEMENS**  
*Ingenuity for life*

**400+**  
branch offices

**16**  
R&D sites

**200,000+**  
service agreements

**9**  
production  
facilities

**2,000,000 t**  
CO<sub>2</sub> savings per year

**4,300,000**  
fire and smoke detectors  
sold in fiscal year 2015

**27,000+**  
employees, 10,000 of  
those service technicians

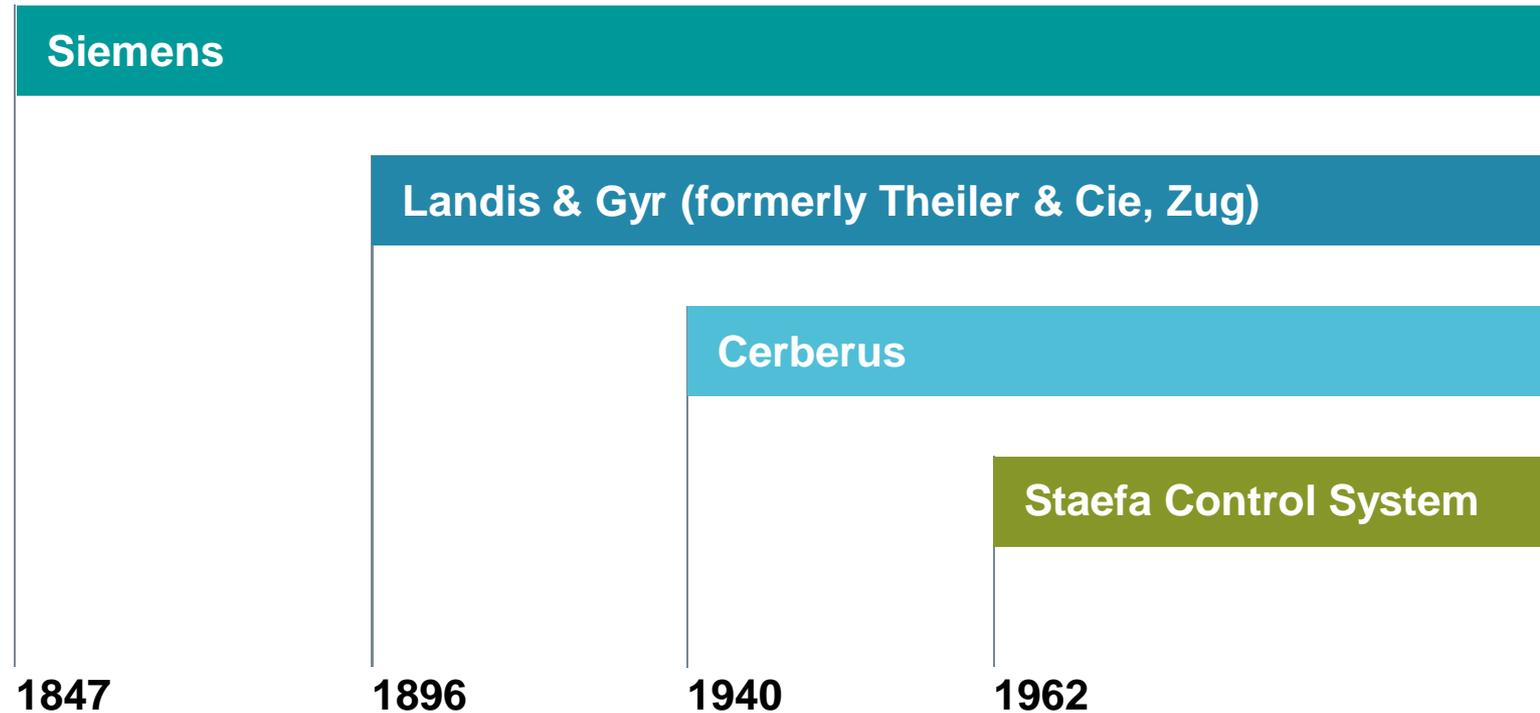
**40,000+**  
new system installations globally  
each year; 500,000+ total

# Our organization



# Our history – We can draw on more than 100 years of experience in building technology

**SIEMENS**  
*Ingenuity for life*



Our history is based on a successive merging of different companies.



Since 1998  
**Siemens Building Technologies**

Picture shows future Building Technologies Division headquarters in Zug, Switzerland

# Our organizational structure



**Matthias Rebellius**  
CEO



**Axel Meier**  
CFO

## Solution and Service Portfolio (SSP)



**Eike-Oliver Steffen**  
Head



**Beat Vanza**  
Head BA

## Region Americas



**David Hopping**  
CEO



**Anton Duvall**  
CFO

## Region Germany



**Uwe Bartmann**  
CEO



**Hubertus Bernhard**  
CFO

## Region Europe



**Carsten Liesener**  
CEO



**Thomas Stöffler**  
CFO

## Region Middle East/Asia-Pacific



**Elangovan Karuppiah**  
CEO



**Wolfgang Eger**  
CFO

## Control Products and Systems (CPS)



**Uwe Frank**  
CEO



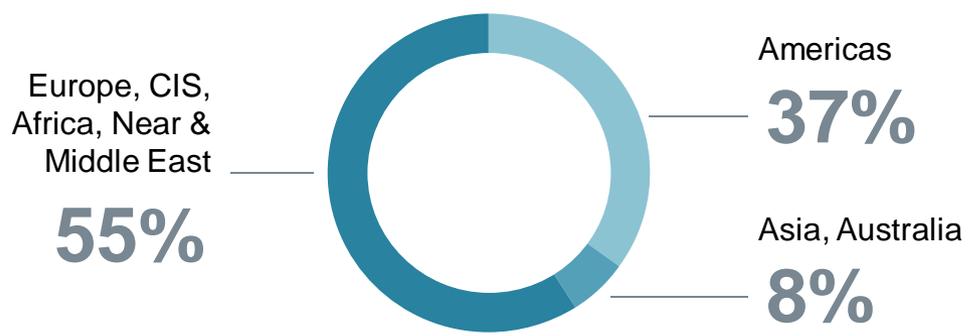
**Mariana Porley**  
CFO

# Our key figures

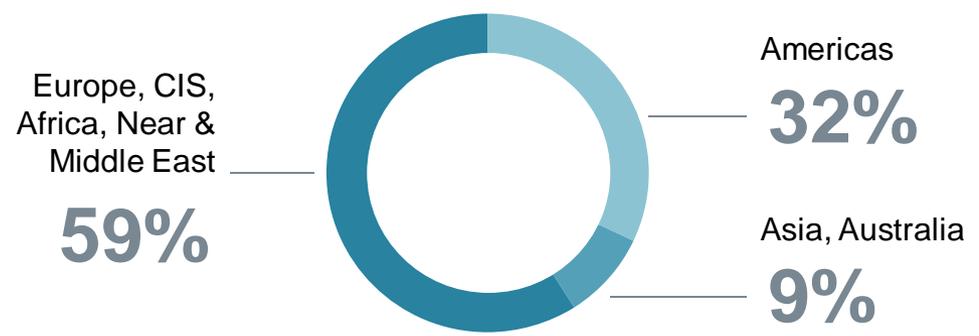


	2017 fiscal year 10/01/2016 – 09/30/2017	% Change (comp.)
<b>New orders</b> (€ million)	6,913	+8%
<b>Revenue</b> (€ million)	6,523	+7%
<b>Profit</b> (€ million)	784	
<b>Employees</b> (on 09/30, excl. trainees)	28,069	

## Revenue

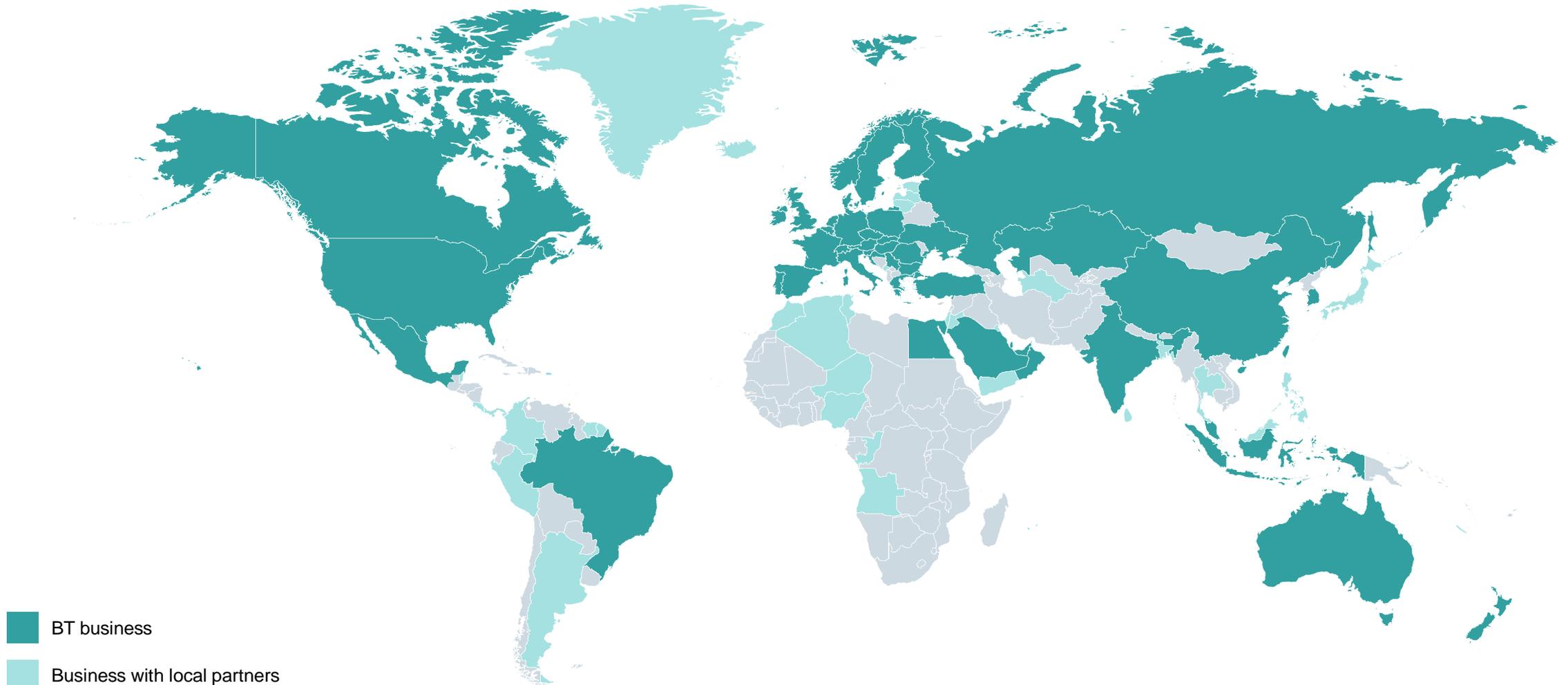


## Employees



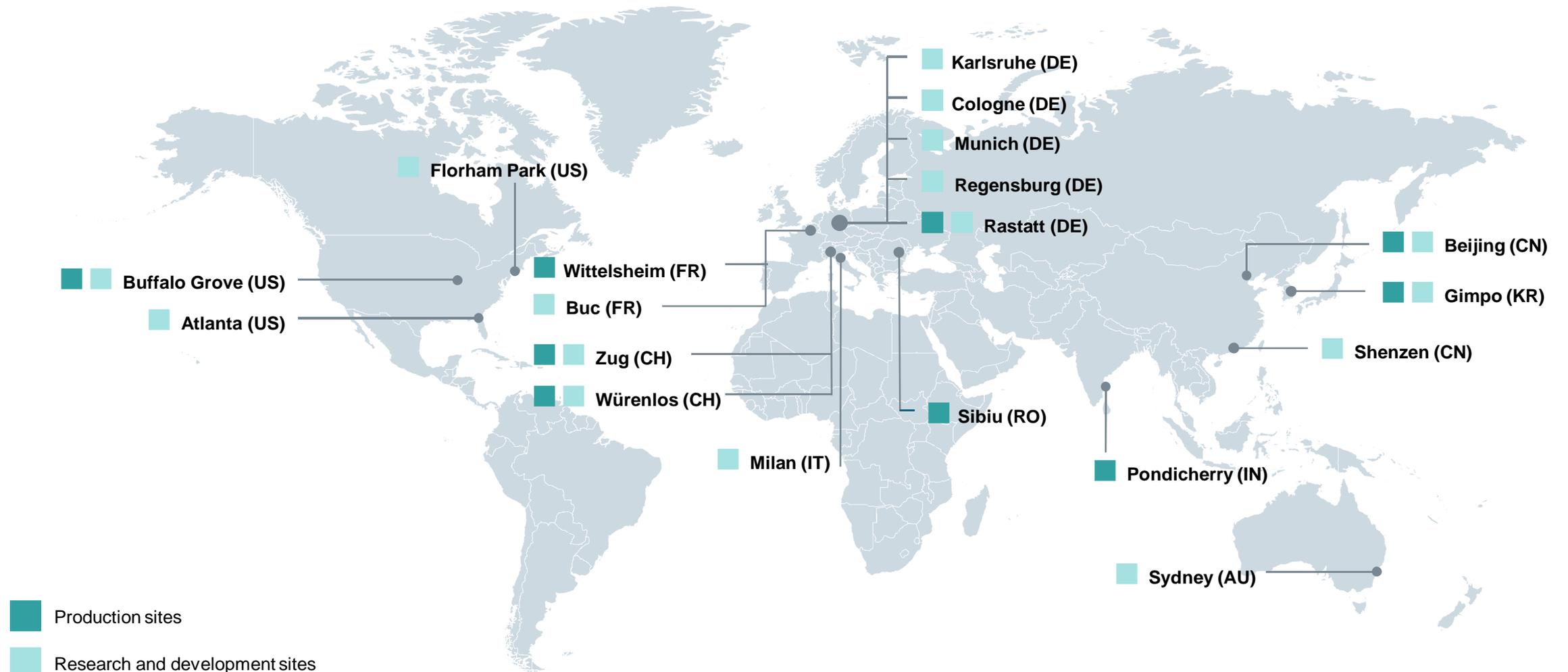
**Close to our customers in more than  
400 branch offices all over the world**

**SIEMENS**  
*Ingenuity for life*

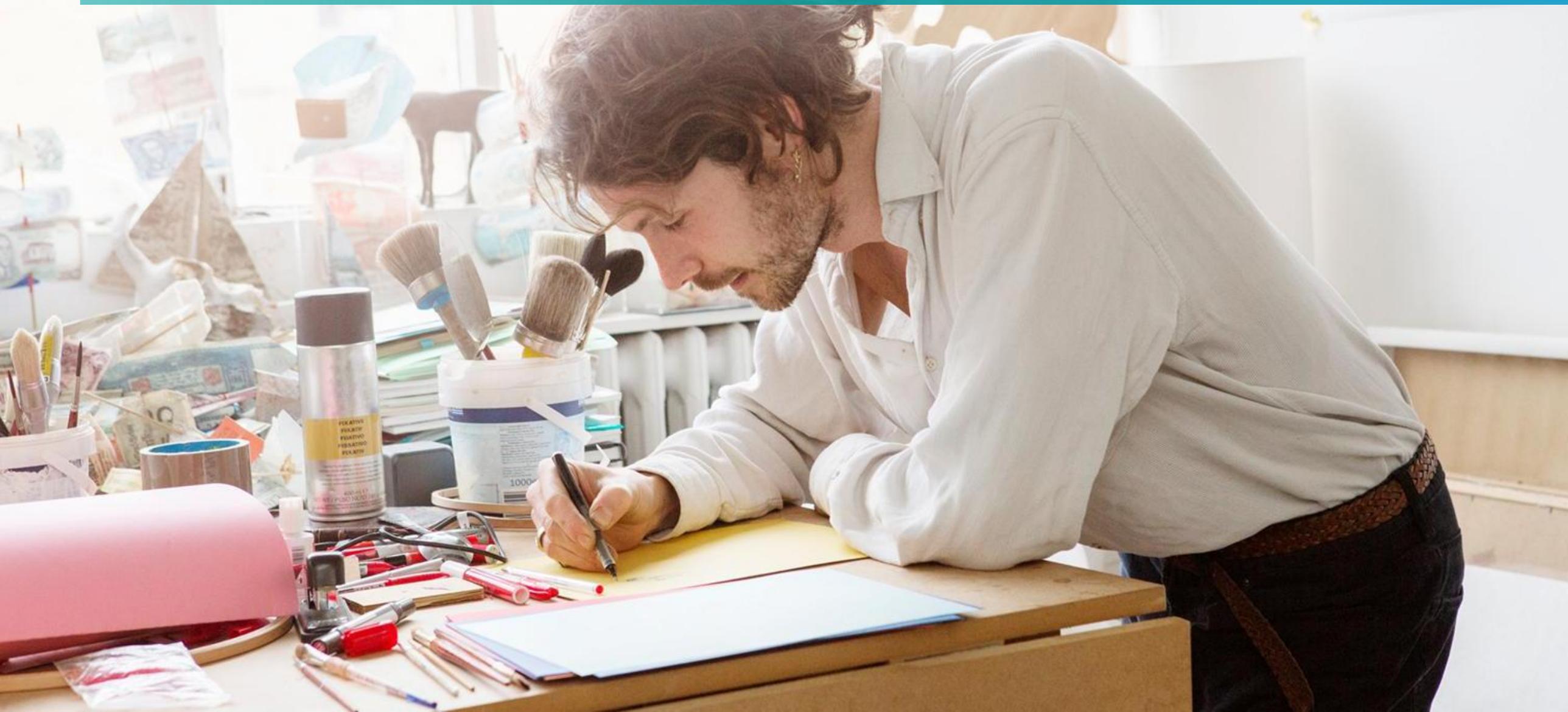


- BT business
- Business with local partners

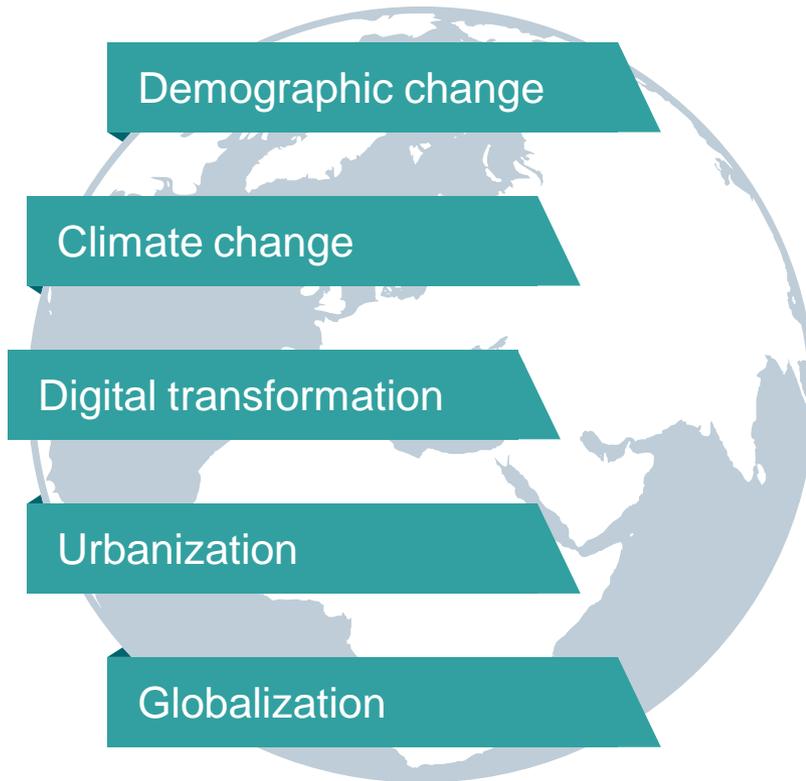
# Driving research and development of new products and solutions in 16 R&D and 9 production sites around the globe



## Our markets & customers



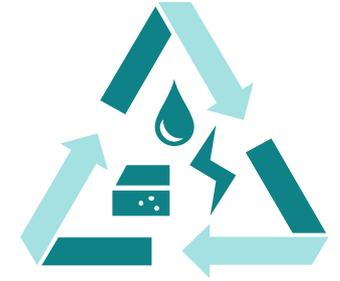
# Our world is undergoing big changes...



Higher  
innovation  
speed



Increased  
need for  
security



Growing importance  
of energy efficiency  
and sustainability

**that influence the  
building technology industry.**

# Our customers represent different industries and markets...

**SIEMENS**  
*Ingenuity for life*

Premium office



Data centers



Industrial



Hotels



Universities



Schools



Healthcare



Life science



and for all of them, buildings are a crucial factor.

Real estate is often the

**2<sup>nd</sup>**

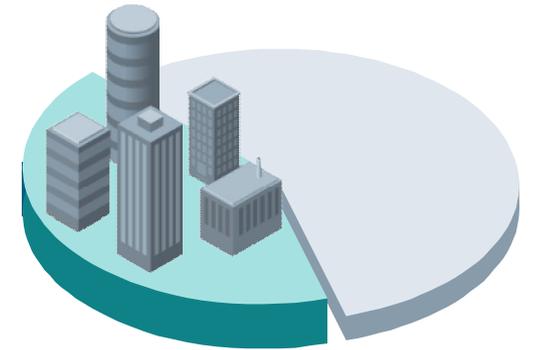
largest expense  
on organizations'  
income statement



Worldwide buildings  
account for

**41%**

of all global  
energy demand



Energy costs alone  
represent about

**30%**

of an office buildings  
total operating costs



In most organizations, the  
real estate portfolio is the

**3<sup>rd</sup>**

most valuable or  
expensive single asset



**Improving building performance is a big lever for cost saving AND efficiency increase**

## Our vision



**Something drives us every day to make buildings better.**

People spend about  
**90% of their lives indoors.**

---

We believe that the places we spend time in  
have a **great influence** on our lives.

---

They affect how we grow, how we develop,  
what we achieve, **who we become.**



## Creating perfect places for every stage of life.

We believe in “**Creating perfect places**”.

---

With our ingenuity.

Our technology.

Our products.

Our solutions.

Our services.

Our innovation.

Our people.

Our commitment.

---

Creating perfect places is our daily motivation for improving building technology to improve people’s lives.



We all begin our lives in a perfect place.

**SIEMENS**  
*Ingenuity for life*



#CreatingPerfectPlaces  
[siemens.com/perfect-places](https://www.siemens.com/perfect-places)

**Why shouldn't all our lives be lived in perfect places?  
That's our inspiration. Our vision.**

**SIEMENS**  
*Ingenuity for Life*



# Our mission



## Digitalization has a tremendous effect upon our business



By 2018 there will be more **connected devices** than people alive; Est. **50 billion** by 2020



Business **IP traffic** will grow at a **CAGR of +20%** from 2014 – 2019



**Mobile computing** to grow by **+57% CAGR** from 2014 – 2019



**Costs sinking dramatically**  
\$500 per 1 million transistors in 1990;  
**\$0.05** per 1 million transistors in **2012**

**Large amounts of data can be turned into value for our customers**

# Our mission – we are the leading automation and digital service provider

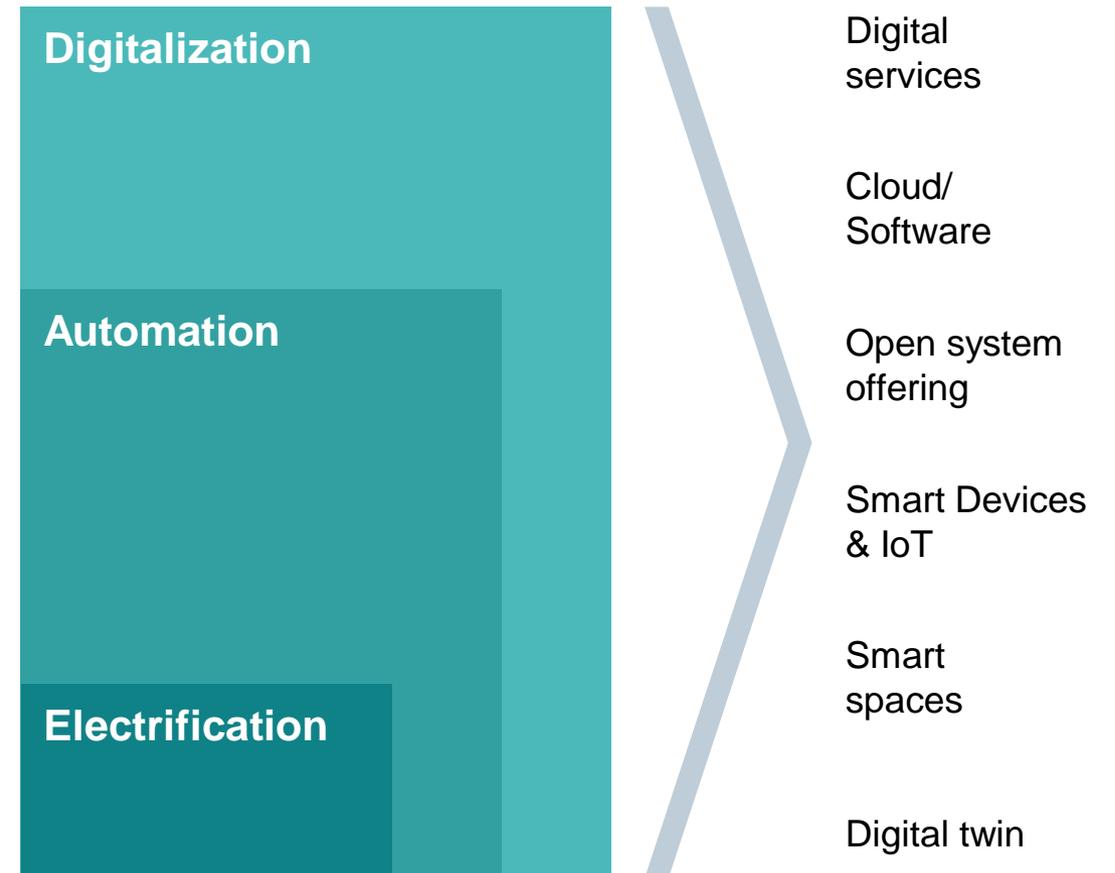


Based on a strong core in automation...



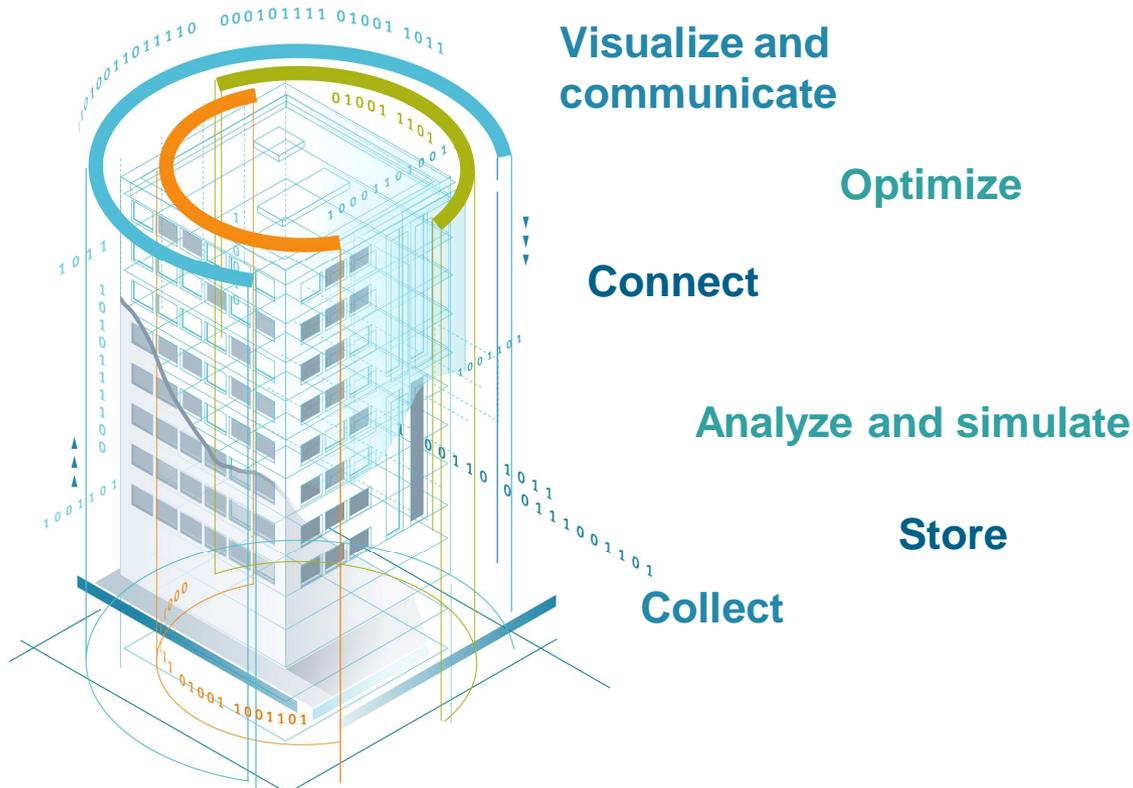
**A trusted partner for high performance, safe, efficient, sustainable and secure buildings**

BT drives the digital transformation.



With our digitalization competence,  
we can drive additional customer value for our customers

From building data...



to customer value

Increase energy efficiency

Optimize energy supply

Increase sustainability

Be legal- and regulatory-compliant

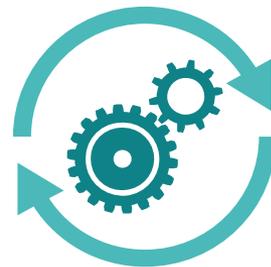
Ensure business continuity

Reduce cost

Increase building value

**Better informed decisions, optimized investments and effective use of buildings**

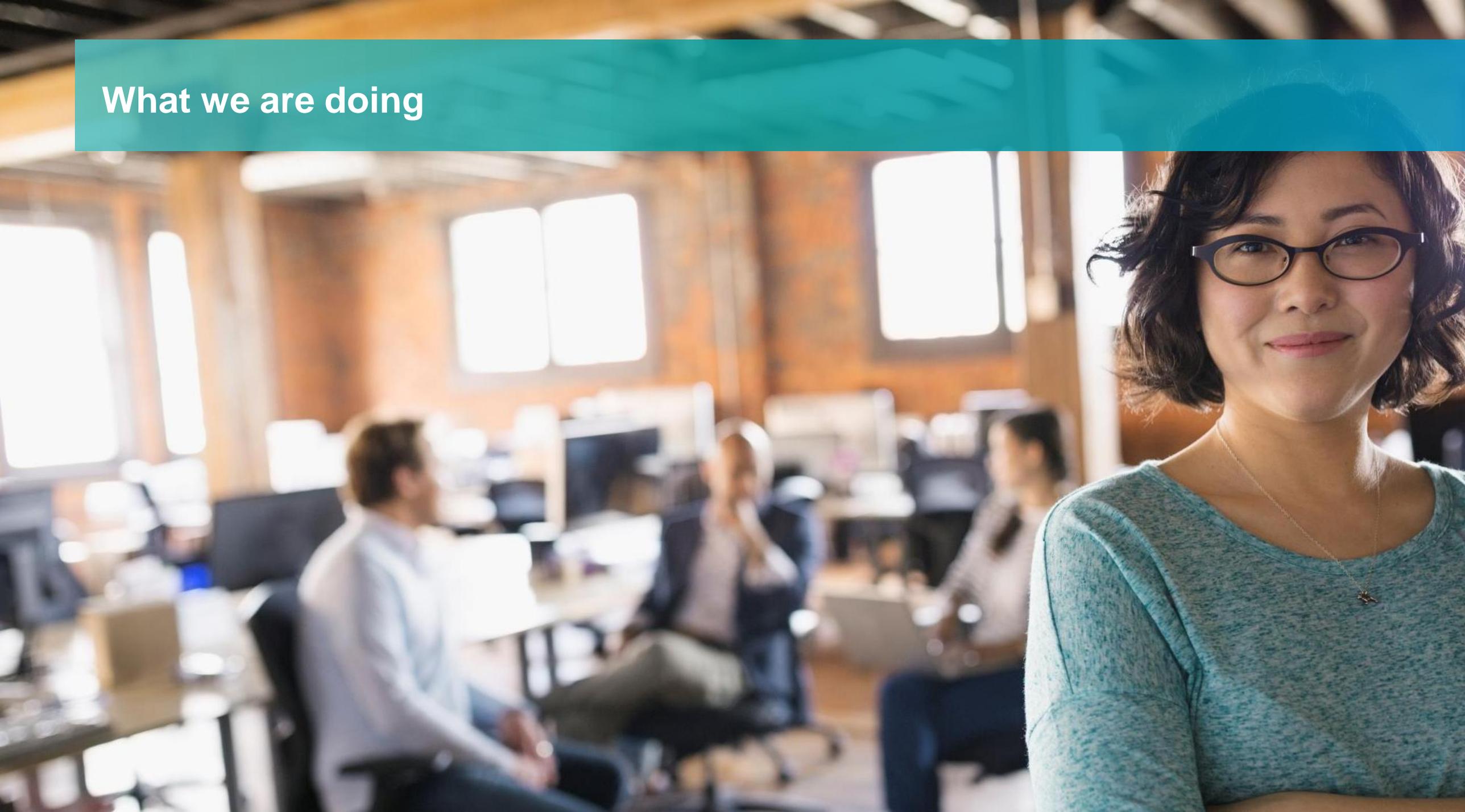
# Our customers want more transparency and added value from their building data



Source: Siemens customer survey, 2014, 2015

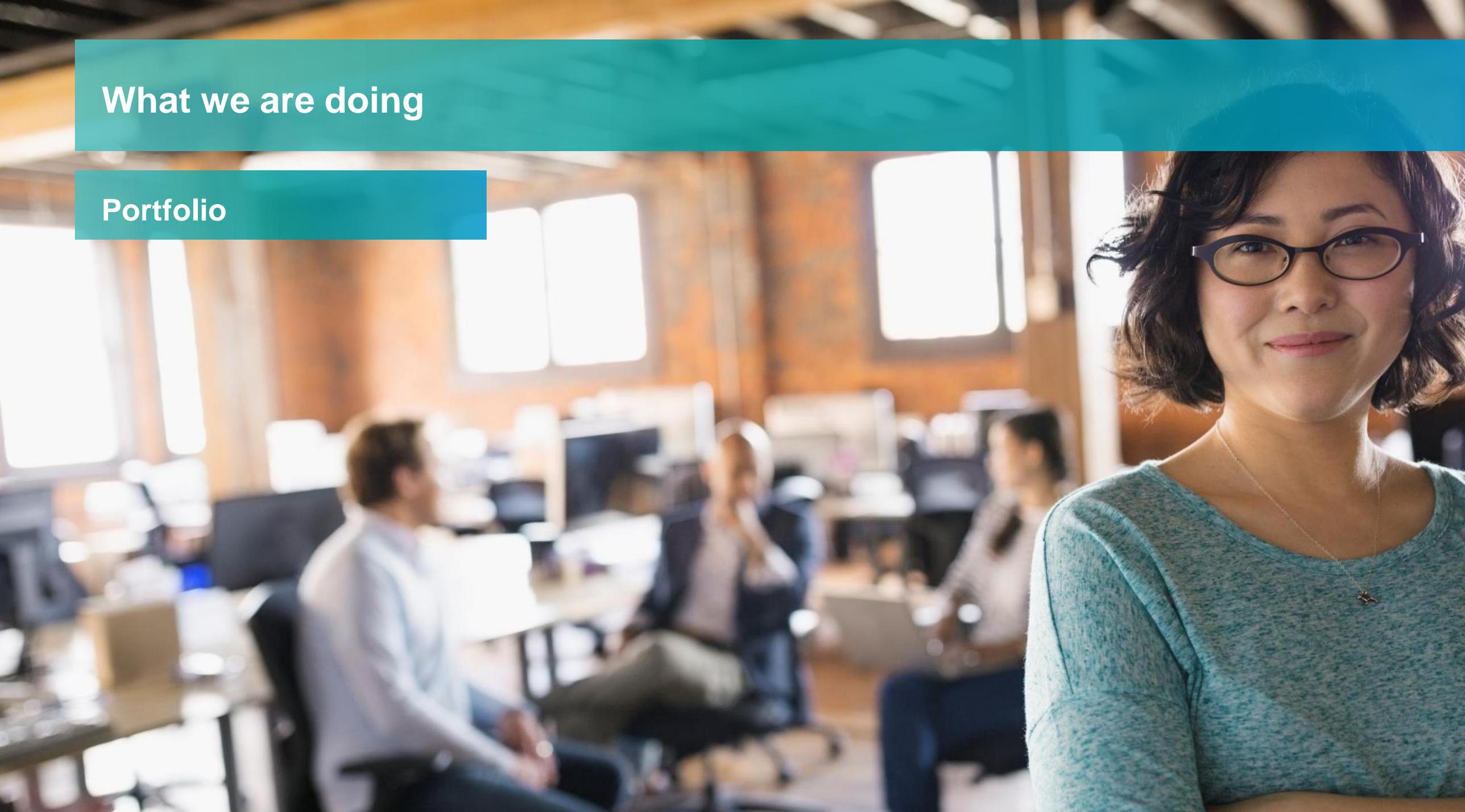


# What we are doing



What we are doing

Portfolio



# Our portfolio provides answers to building technology questions

**Building automation  
and energy management**

**Fire safety**

**Security**

**Enterprise  
business**



Energy efficiency and sustainability management, enterprise security solutions

**System  
house  
business**



Integrated building solutions, solutions for vertical markets (data centers, life science industries, premium offices, healthcare), building automation solutions, fire safety and security solutions

**Product  
business**



Building automation and control systems, HVAC, fire safety, extinguishing, evacuation, security, including access control, video surveillance

# Our market offering covers the integration of all building disciplines into dedicated vertical market solutions



 <p><b>Fire safety</b></p> <ul style="list-style-type: none"> <li>• Fire detection</li> <li>• Extinguishing</li> <li>• Evacuation</li> </ul>	 <p><b>Security</b></p> <ul style="list-style-type: none"> <li>• Access control</li> <li>• Video surveillance</li> <li>• Intrusion detection</li> </ul>	 <p><b>HVAC</b></p> <ul style="list-style-type: none"> <li>• HVAC control</li> <li>• Room automation</li> </ul>	 <p><b>Energy efficiency</b></p> <ul style="list-style-type: none"> <li>• Maximize efficiency</li> <li>• Optimize supply</li> <li>• Enhance sustainability</li> </ul>	 <p><b>Lighting</b></p> <ul style="list-style-type: none"> <li>• Lighting control</li> <li>• Shading</li> </ul>	 <p><b>Power</b></p> <ul style="list-style-type: none"> <li>• Monitoring</li> <li>• Reporting</li> <li>• Decentralized energy systems</li> </ul>	<p><b>3rd</b></p> <p><b>Integration</b></p> <ul style="list-style-type: none"> <li>• 3<sup>rd</sup>-party integration of all building disciplines</li> </ul>
---	--	--	---	--	---	--

**Data center**



**Life science**



**Premium office**



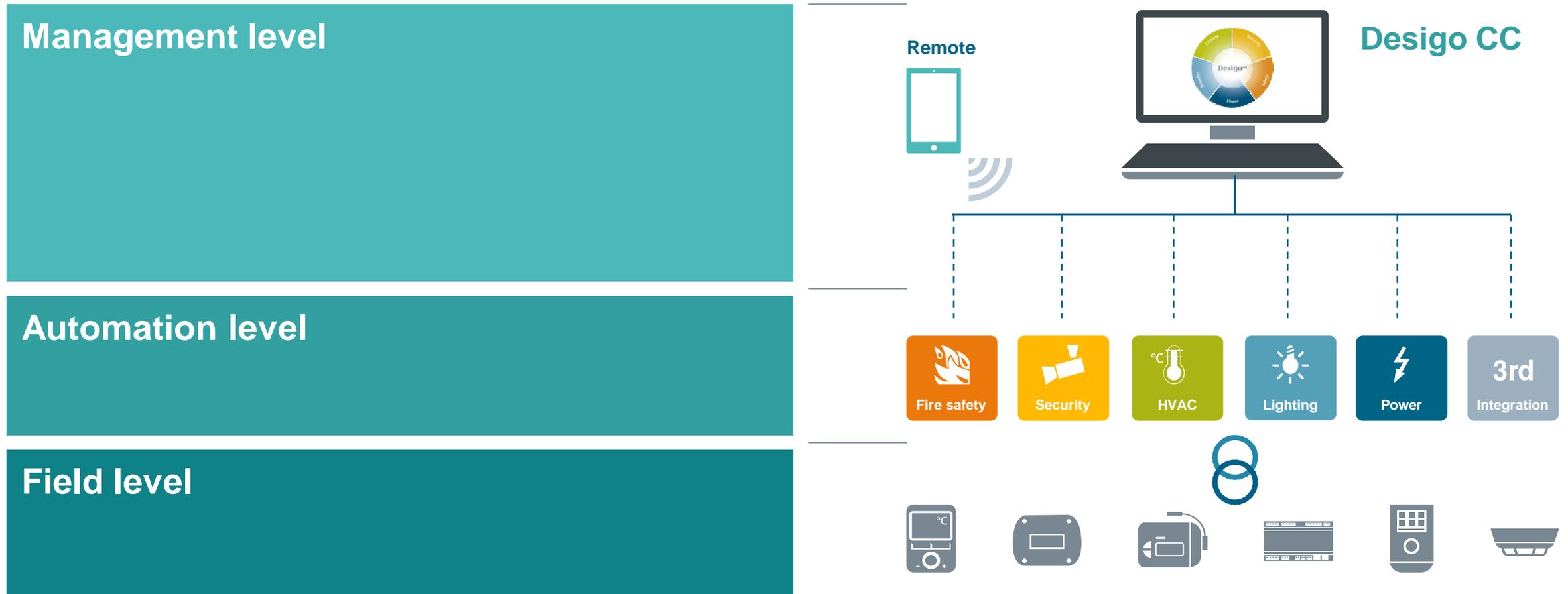
**Healthcare**



**Industrial**



# Desigo CC is the leading integrated building management platform in the market place



# Applications increase the added value of Desigo CC

 **Increase building value**

 **Increase energy efficiency**

 **Customer satisfaction**

 **Increase sustainability**

## Smart room operator



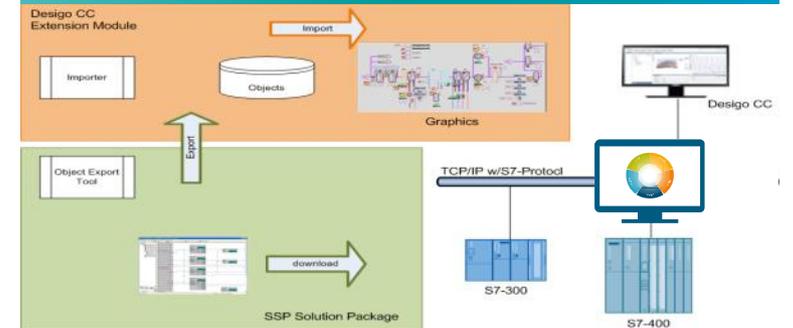
Easy room operation of lights, blinds and HVAC from a PC, tablet or smartphone

## Annual shading



Shadow calculation for each window or group of windows, based on external changes in e.g. time of day and position of the sun

## Simatic S7 integration



High availability of critical plants or equipment through integration of Simatic S7 into Desigo CC, including migration of Siclimat X



# Enrich the service portfolio based on data-driven services – increased performance



Increase building value



Increase energy efficiency



Optimize energy supply

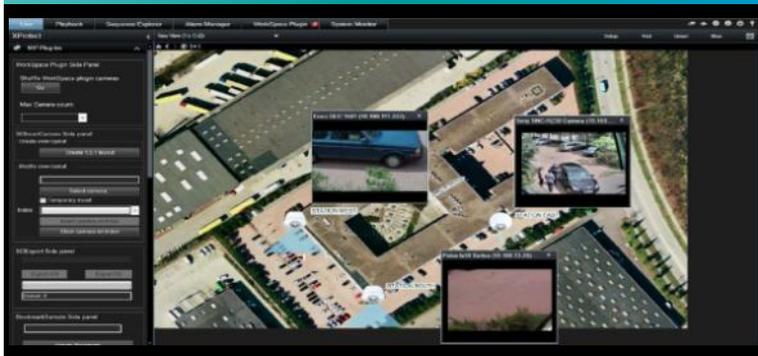


Ensure business continuity



Increase sustainability

## System performance reporting



Decide if and when it makes sense to replace the systems

## Benchmarking



Identify cost saving potential by comparing with other buildings

## Forecasting

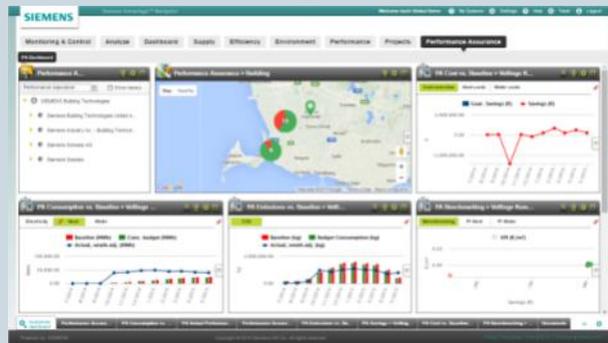


Forecasting helps to create energy supply mix scenarios, e.g. when and to what extent to invest in PV

# Enrich the service portfolio based on data-driven services – transparency and cost reduction

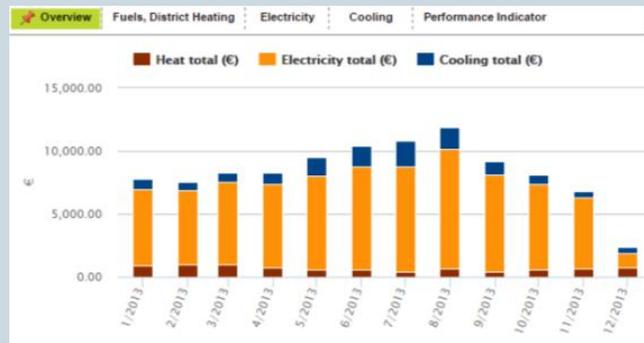


## Smart Room Operator



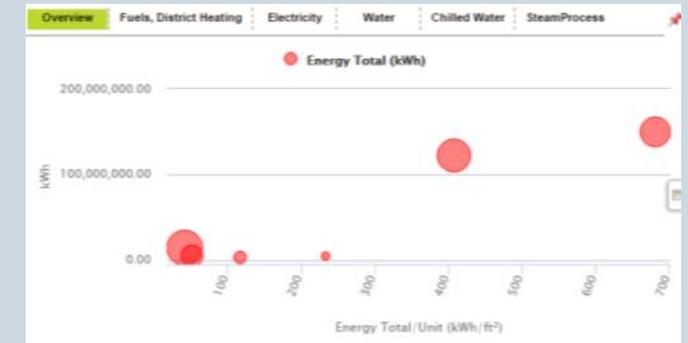
Individual dashboards give full transparency

## Show KPI development



Tracking KPIs ensures a clear status of the reduction achievements

## Compare key parameters



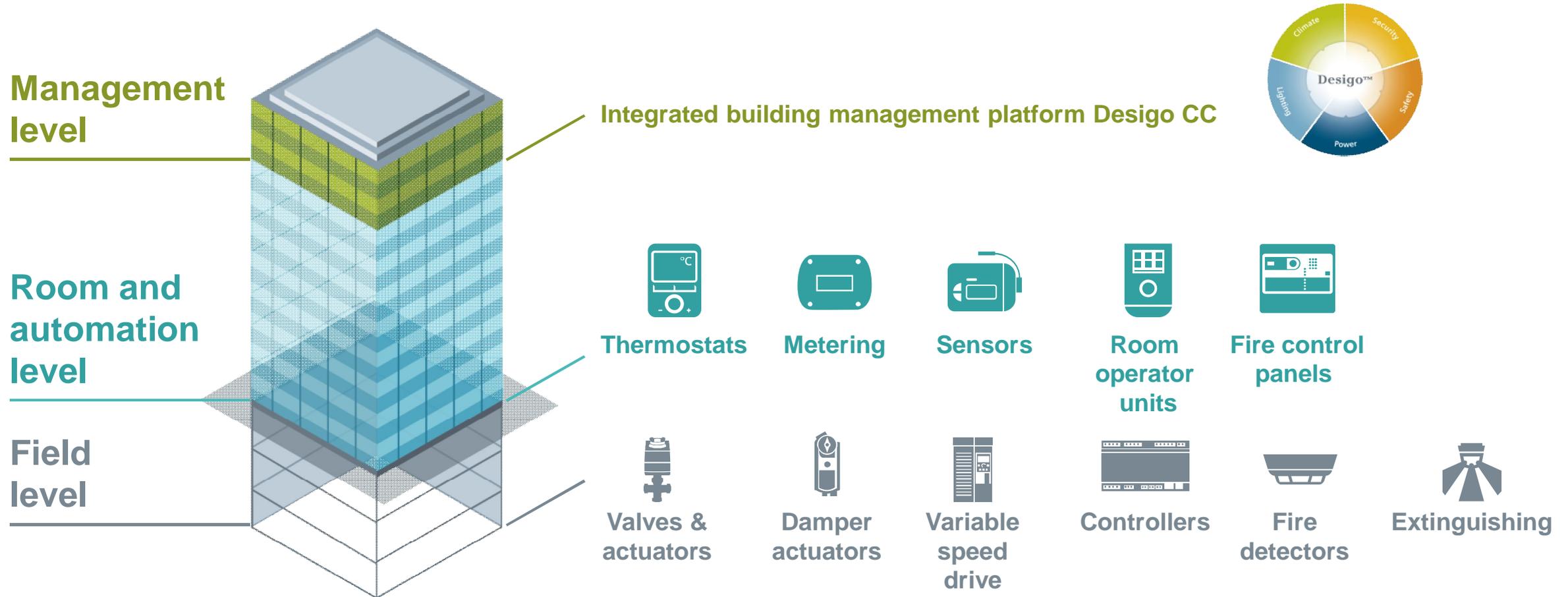
Benchmark with other similar buildings and identify further savings

# Security

Complementing portfolio based on Desigo CC for single buildings and the Siveillance Suite for corporate security and critical infrastructure



# Our product and systems portfolio contains a unique width, depth and quality



## Desigo CC – Integrated building management platform

Desigo CC is suitable for **small to large**  
and for **simple to complex** buildings

- Building management platform that enhances **safety, comfort and productivity**
- Makes building run more **efficiently** in terms of **cost and energy**
- **Open** platform allows to design building management according to user needs
- Offers multi-discipline **building control in just one platform, reduces complexity**
- Thanks to intuitive, easy engineering and unique user interface, Desigo CC **saves time for engineering efforts and costs**



# Acvatix 6-port control ball valve – an excellent choice for your business

6-port control ball valves ideal **for 4-pipe systems**  
in heated and chilled ceilings

---

- **Lower project costs** thanks to fewer data points
- **Flexible planning** and **installation**
- **Energy efficiency** thanks to 100% bubble-tight valves

Benefits of the OpenAir family of damper actuators

---

- KNX for **easy integration**
- **Tool-free** actuator coupling
- **Easy operation**

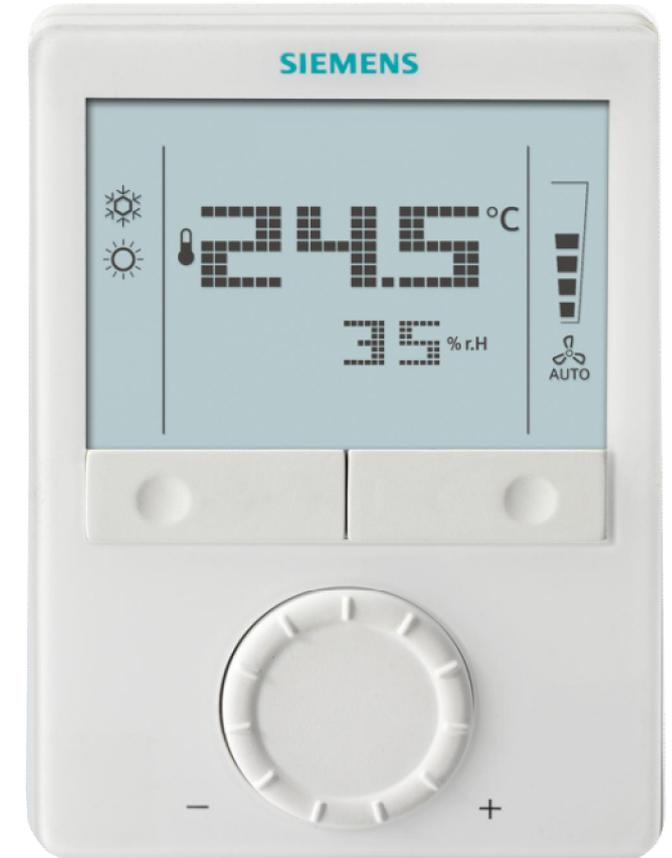
**SIEMENS**  
*Ingenuity for Life*



# Room thermostats and controllers with open communication standards to easily combine electrical and HVAC applications

**SIEMENS**  
*Ingenuity for Life*

- Wide HVAC application range:  
**Very attractive price/performance ratio**
- **Integrated in Desigo building automation system**, for remote room management
- Meets highest energy efficiency standards: e.g. **EN 15232**
- Controlling functions inside: **less wiring, simple set-up**
- Preloaded applications: **no programming**



# ASAt<sup>SM</sup>technology – An innovation that sets new standards and give a Genuine Alarm Guarantee

## Multi-sensor fire detectors with ASAt<sup>SM</sup>technology

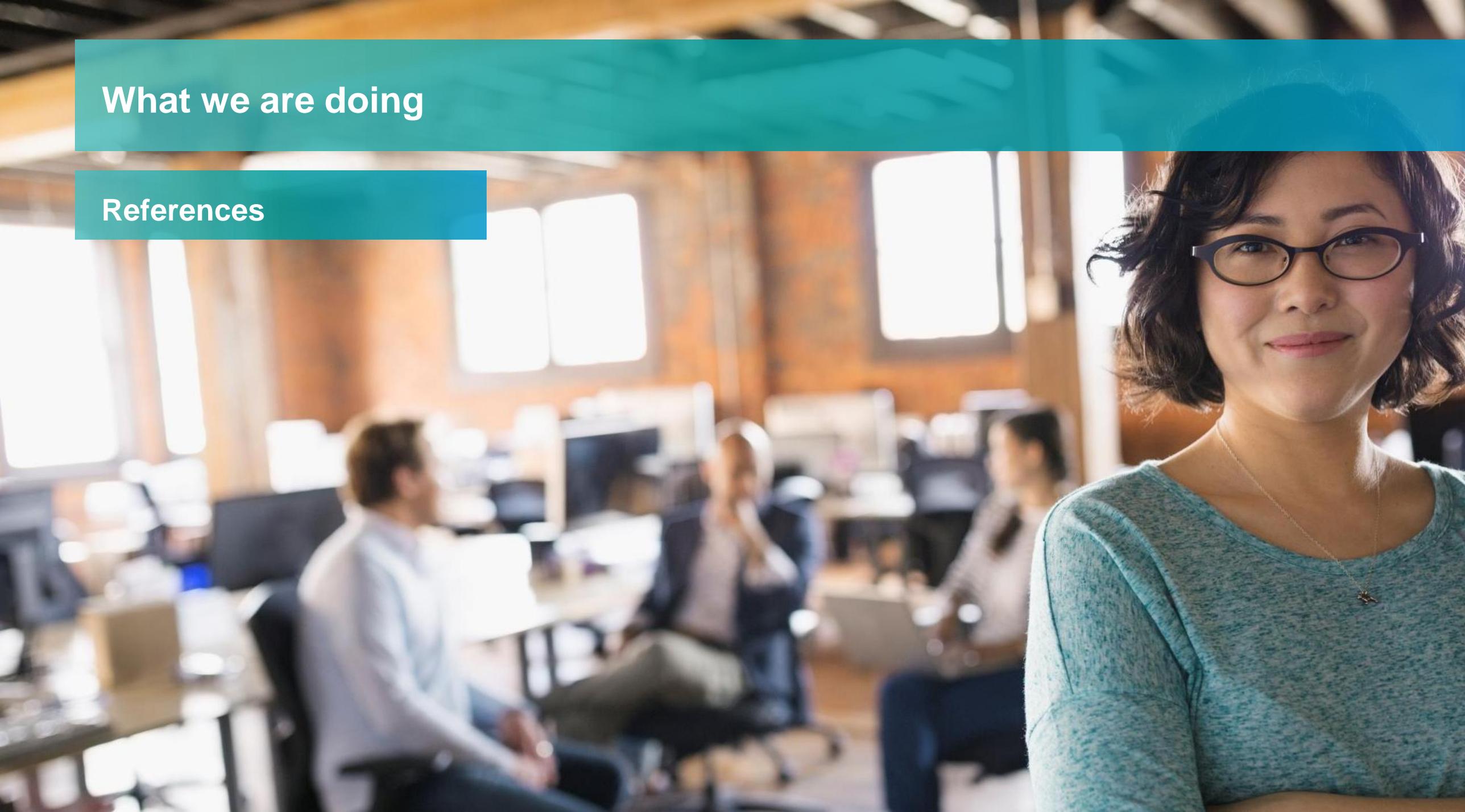
---

- **Smart sensors**  
Increased detection reliability with two thermal and two optical sensors
- **Patented chamber**  
Reduces background light, making detector resistant to dust
- **Unique ASAt<sup>SM</sup>technology from Siemens**  
Converts signals into mathematical components and compares them in real time with programmed values using intelligent algorithms
- **Dynamic ASA parameter sets**  
Influence the algorithms; selection according to current environmental conditions



What we are doing

References



# We have satisfied customers underlining our positioning #CreatingPerfectPlaces around the world



## A perfect place to study.

**University of Applied Sciences (HAW)**  
Hamburg, Germany



### Customer requirements

- Energy efficiency and renovation of outdated HVAC system
- Reduction in maintenance and energy costs
- Innovative building management system that meets the needs of students and employees

### Siemens solution

- Building management system migrated to Desigo V5.1
- Measurement, control and regulating systems modernized
- Energy Performance Contracting

### Customer benefits

- Building Technologies guarantees annual energy savings of more than 27%; HAW thus saves €500,000 – and 2,077 t CO<sub>2</sub>
- The building automation system saves another €200,000



# A perfect place to work.

**ThyssenKrupp**  
Essen, Germany



## Customer requirements

- Sustainable use of resources and energy efficiency
- Comfortable workplaces
- Protection of people, data and business processes against intrusion, theft and fire

## Siemens solution

- Multi-discipline solution, including building automation
- Danger management system with video surveillance, intrusion detection and video-based access control system
- Fire detection system, including voice alarm
- Green Building Monitor displays energy consumption

## Customer benefits

- Comfortable, tailored building management system
- Optimum, phone-operated workplace conditions
- Energy efficiency and cost savings



# A perfect place to rely on.

## Citigroup Data Center Frankfurt, Germany



### Customer requirements

- Reliable and redundant energy supply
- Fire safety and security technology
- Energy efficiency, especially in terms of building cooling

### Siemens solution

- Building automation, fire safety technology and energy supply with Desigo, Sinteso and GMA Manager
- 1,600 fire detectors, 150 SIESTORAGE surveillance cameras, 168 door sensors

### Customer benefits

- Efficient energy consumption and LEED certification
- Maximally redundant system with 99.995 percent availability



# A perfect place to generate power.

## SylWin alpha Offshore Converter Platform North Sea, Germany



### Customer requirements

- Availability and reliability for the unmanned platforms; all systems have to be redundant, low maintenance and remote-controllable
- High priority for fire safety

### Siemens solution

- Complex fire safety technology with different extinguishing systems (e.g. gas, foam or spray deluge systems)
- Video surveillance and access control
- HVAC

### Customer benefits

- Reliable extinguishing with easy operation
- Data transfer and control from the mainland



# A perfect place to visit.

## Tett nang Castle Tett nang, Germany



### Customer requirements

- Reliable fire safety solution
- Historic preservation status makes for special challenges in terms of installation aesthetics

### Siemens solution

- SWING wireless fire detection system with two redundant paths installed in the museum and office rooms
- Hardwired fire detector in the basement and attic areas

### Customer benefits

- Extremely reliable fire safety solution so that the castle interior remains untouched
- Fast installation with no disruptions during business hours



# A perfect place to communicate around the world.

**Digital Realty**  
Santa Clara, USA



## Customer requirements

- Digital Realty needs a partner in energy management, fire safety and security in order to quickly provide data centers

## Siemens solution

- Cross-divisional project for developing and producing premounted electrical modules for data centers, including switchboards, distribution transformers, low and medium voltage, fire safety and security systems

## Customer benefits

- Energy-efficient, reliable and permanently available electrical infrastructure for data centers
- Digital Realty was able to reduce the time required to provide data centers from 179 to 80 days



# A perfect place to research.

**Fraunhofer Institute**  
Boston, USA



## Customer requirements

- Integration of different disciplines into the 100-year-old building, which serves as a “living laboratory” for building technology research

## Siemens solution

- Building management platform Desigo CC
- Building automation with heating, ventilation and air conditioning
- 1,000 data points
- 16 ONVIF cameras

## Customer benefits

- The integration of different disciplines makes it possible to analyze the efficiency of materials and technologies
- Desigo CC simplifies data collection and evaluation



# A perfect place to trade.

**Port Manatee**  
Florida, USA



## Customer requirements

- A robust and integrated access control system to improve security as well as processes and workflow on site

## Siemens solution

- Siemens security technology solution SiPass and Siveillance Vantage from Siemens
- Unification of sub-systems into a single user interface with command and control functionality over port security operations

## Customer benefits

- Improved security accountability, reporting and operational efficiency
- Expanding business and improving profitability while keeping the real cost of security as minimal as possible helps reaching their business objectives



# A perfect place to learn.



**Algonquin College**  
Ottawa, Canada



## Customer requirements

- Energy savings cover implementation costs within 20 years
- Significant greenhouse gas emission reduction

## Siemens solution

- Apogee building management system
- Energy performance contracting and sustainability consulting plus on-site Sustainability Coordinator
- Lighting and controls, water conservation, HVAC upgrades
- Energy management including Demand Flow technology, scaled solar PV, power storage and EV charging stations

## Customer benefits

- US\$3.2 million in operating cost reductions and over 12% GHG net reductions
- Algonquin College as a model for energy management and sustainability



# A perfect place to live.

## Seestadt Aspern Vienna, Austria



### Customer requirements

- This research project is intended to help development a new business model for the changing power market while linking the pilot applications and building technology

### Siemens solution

- Building management platform Desigo CC
- Desigo Room Automation with heating, ventilation, blinds and lighting; 110 apartments with Gamma KNX
- Energy management
- Sinteso FS20 fire detection system
- Navigator collects and evaluates data

### Customer benefits

- Building management and basis for research project
- New business models can be developed



# A perfect place to keep a tradition on tap.

## Feldschlösschen Rheinfelden, Switzerland



### Customer requirements

- Modernization and optimization of the fire safety systems to protect the iconic brewery building
- The goal was a more simple structure with fewer, but networked, control stations

### Siemens solution

- Over 2,000 fire detectors
- Thanks to the modernization of the fire safety system, now only 5 fire control panels are required instead of 17

### Customer benefits

- Fast and reliable maintenance and service
- Advanced planning continues: For instance, Sinteso Mobile may be integrated sometime in the future for remote access by smartphone or tablet



# A perfect place to stay.

## Marriott Hotels Europe



## Customer requirements

- Reducing energy consumption and CO<sub>2</sub> emissions

## Siemens solution

- Energy audits and optimization of building management systems
- Green Building Monitors visualize energy consumption and urge viewers to save energy

## Customer benefits

- Pilot project Paris Charles de Gaulle Airport Marriott Hotel: 15% cut in energy costs; 6% lower electricity costs and 17% lower gas costs as well as 15% reduction in CO<sub>2</sub> emissions



# A perfect place to marvel.

## Fondation Louis Vuitton Paris, France



### Customer requirements

- Maximum requirements for a multiple award-winning design object

### Siemens solution

- Fire safety solution Sinteso and automated extinguishing systems with nitrogen
- Desigo PXC automation stations
- Service agreement: 7/7, 24/7
- UAE MM8000 danger management station

### Customer benefits

- Complex overall solution (fire safety, security, comfort from a single source)



# A perfect place to succeed.

## Lilacs International Commercial Center Shanghai, China



### Customer requirements

- Lower energy costs for owners and tenants
- Tenant satisfaction
- Improved range of services

### Siemens solution

- Multi-discipline solution, including energy management
- SiPass access control
- Apogee Building automation
- Cerberus PRO fire alarm system
- Lighting
- Parking space management

### Customer benefits

- LEED Silver certification
- 15% lower costs, thanks to technical integration



# A perfect place to collaborate.

## Shanghai Tower Shanghai, China



### Customer requirements

- Reliable power supply and energy efficiency for one of China's tallest buildings
- Fire safety for people and the building

### Siemens solution

- High voltage, low voltage
- Fire detection system
- Intelligent lighting (EIB)

### Customer benefits

- LEED Platinum certification
- 5% – 10% energy savings expected, along with improved comfort
- The world's most reliable power supply system
- Comprehensive, secure fire safety solution



# A perfect place to celebrate.

## WAFI

Dubai, United Arab Emirates



## Customer requirements

- Flexible, modular and reliable building management system
- Energy efficiency
- Access control

## Siemens solution

- Building management with Desigo
- Energy optimization with the Demand Flow solution, including optimization of the cold water system
- Data acquisition and creation of energy profiles with Navigator

## Customer benefits

- Guaranteed €320,000 savings in energy costs per year, i.e., energy consumption reduced by 17%



# A perfect place to work.

## Marina Bay Financial Center Singapore



### Customer requirements

- Integrated building management system with central control from one platform
- Standardized, transparent security concept, integration of video surveillance into access control system

### Siemens solution

- VeriNET E4
- OPC DA interface to the building management system
- Siveillance Fusion security management station
- Apogee building automation system, Navigator and Green Building Monitor

### Customer benefits

- Improved comfort, fire safety and security, along with simplified system integration
- Standardized security processes



# A perfect place to study.

## United World College South East Asia Singapore



### Customer requirements

- Management, control and monitoring of a large campus
- Lowering energy consumption, increasing energy efficiency of the system and communicating these improvements to the students

### Siemens solution

- Pilot project for “3for2” concept from ETH Zurich and partners: Reducing space for lighting and cooling system helps to economize an entire floor
- Desigo CC (first time installed in Singapore), Navigator, Desigo Room Automation

### Customer benefits

- Consumes 40% less energy than comparable buildings



**Thank you for your  
attention.**