



**HONEYWELL
FORGE**

AN OVERVIEW

TODAY'S CHALLENGES DISTURB BUSINESS CONTINUITY



Manual Diagnostics

Scheduled equipment inspections are an expensive and inefficient strategy for detecting malfunctions in advance.



Asset Performance Visibility

Without visibility into building performance, business leaders are unable to track or validate optimization strategies.



Low Accountability

Time-based, scheduled maintenance contracts provide little transparency into maintenance performance and ROI.



Aging Workforce

A diminishing pool of skilled and experienced workers necessitates innovative digitization to ensure business continuity.

HONEYWELL FORGE

AIR QUALITY AND SECURITY TECHNOLOGIES

OT DATA

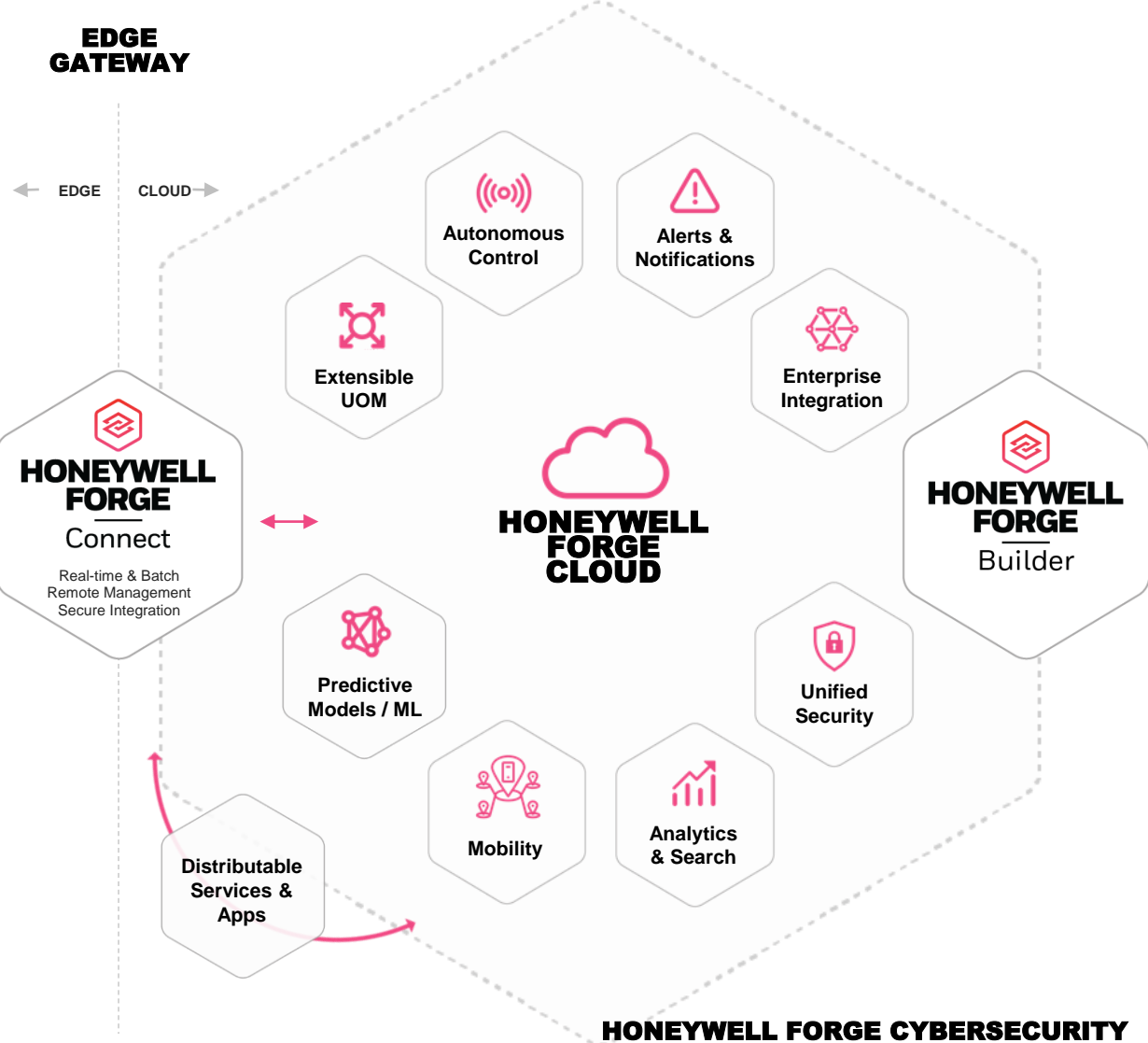
- Indoor Air Quality Sensors
- BMS
- Access Control
- HVAC
- Video Security
- Thermal Security
- Other 3rd Party Sensors

IT DATA

- HON BMS, EBI, Prowatch

3rd party systems

EDGE GATEWAY



APPLICATION CLOUDS

Codify domain knowledge of assets and experts in a contextual way

BUILDING

Healthy Buildings

Centralized Operations

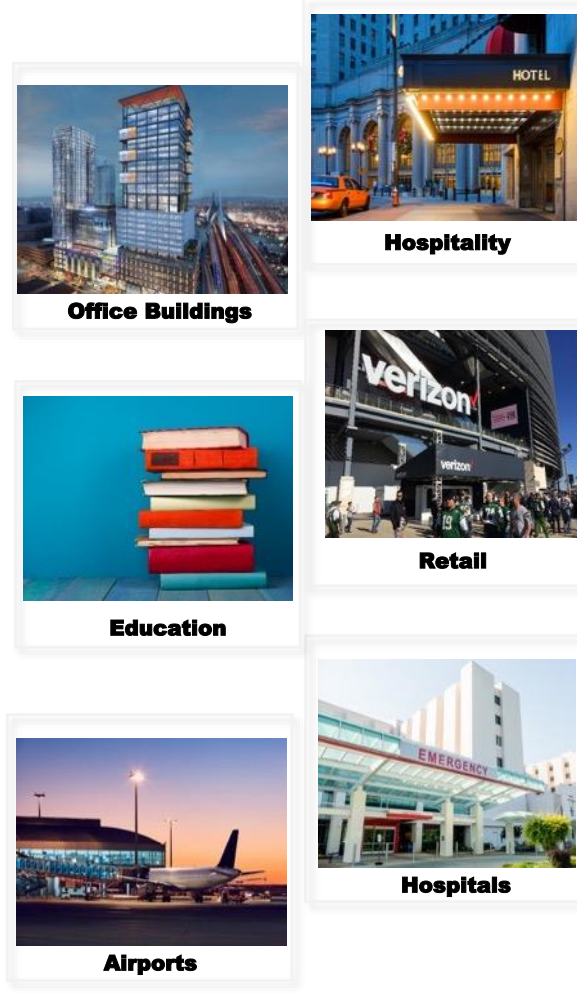
Portfolio Management

Energy Optimization

Predictive Maintenance

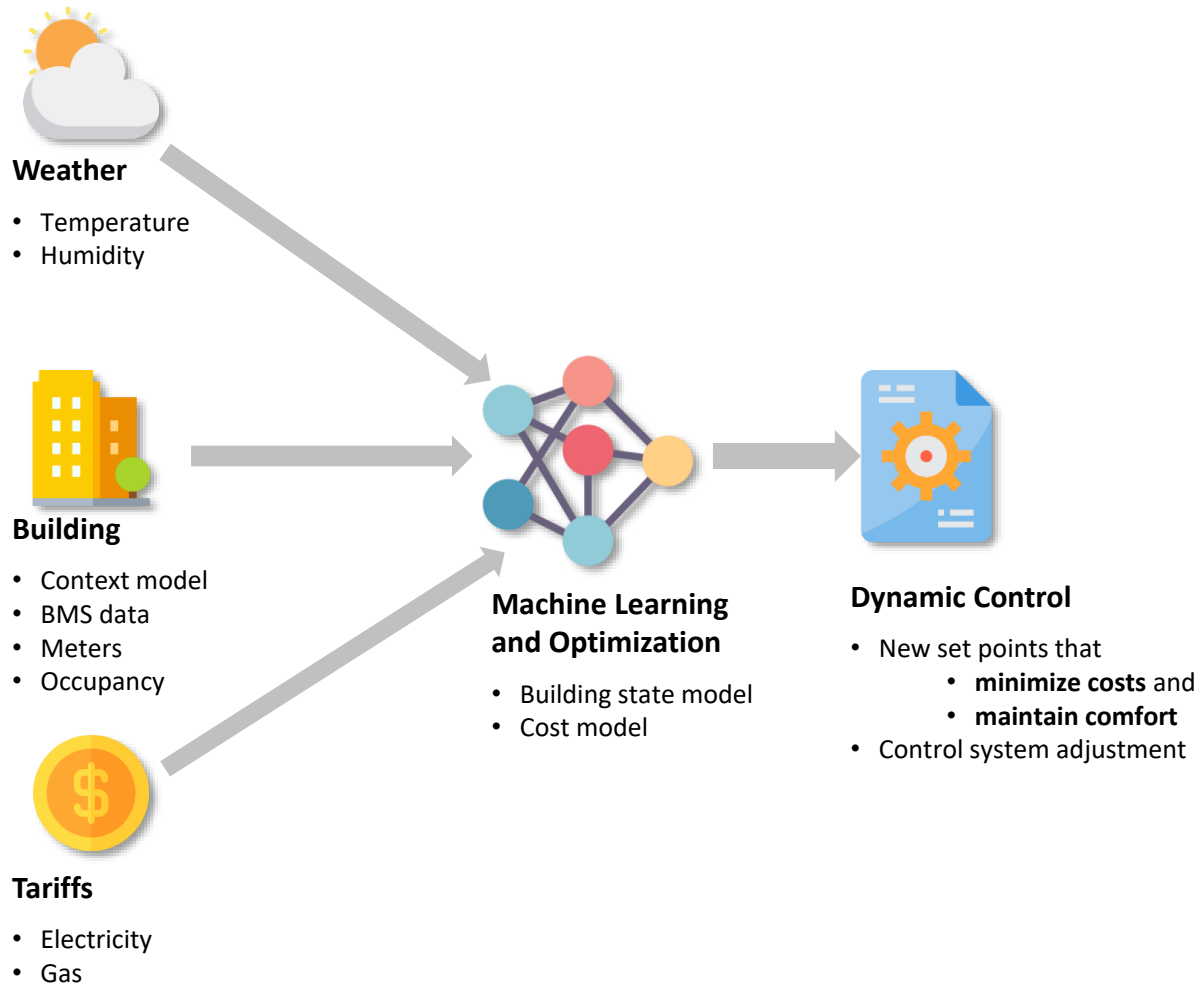
Occupant Experience

INDUSTRIES



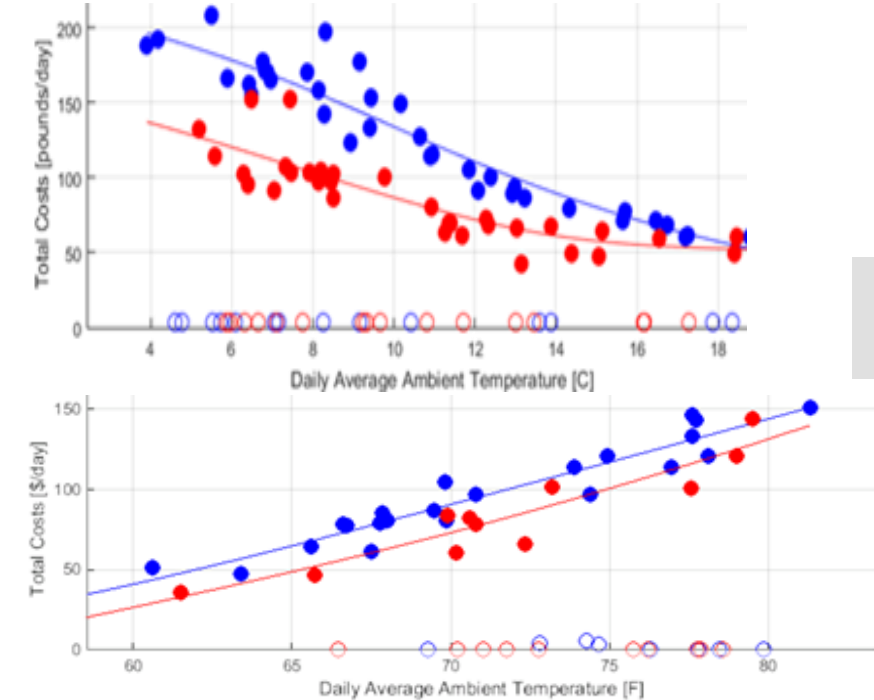
HONEYWELL SAVINGS THROUGH OPTIMIZATION

FORGE ENERGY OPTIMIZATION



IMPACT OF AUTONOMOUS CONTROL

- Automating actions of point setting
- Reducing energy usage
- Saving utility cost



17-33%
Savings

Original Strategy | Energy Optimization

ADVANCE FAULT DETECTION

PERFORMANCE ANALYTICS

Detect issues before they turn into complaints.
Optimize uptime and availability

BENCHMARKING AND COMPARISONS

Understand KPI improvements vs. historical and targeted levels

OPERATIONAL READINESS

Increase confidence that your facility will be optimally working when needed

CONTINUOUS OPTIMIZATION

TARGETED RESPONSE

Understand where to allocate resources to deliver the most beneficial results

TUNING TO ACTUAL USE

Continuous tuning as the building is repurposed and how it is used

BENEFIT FROM GLOBAL EXPERIENCE

Your building benefits from Honeywell's depth of experience



TRANSFORMATION

GET MORE OUT OF YOUR MAINTENANCE AGREEMENTS AND EQUIPMENT ASSETS



**PORTFOLIO
MANAGER**



VENDORS

I WANT TO...

Reduce spend on my
maintenance contracts

SO I NEED...

Visibility and transparency
across my site



TECHNICIANS

I WANT TO...

Improve my
time-to-resolution

SO I NEED...

To focus on repairs –
not finding problems



ASSETS

I WANT TO...

Enhance my overall
lifecycle performance

SO I NEED...

Service based on data –
not a calendar schedule

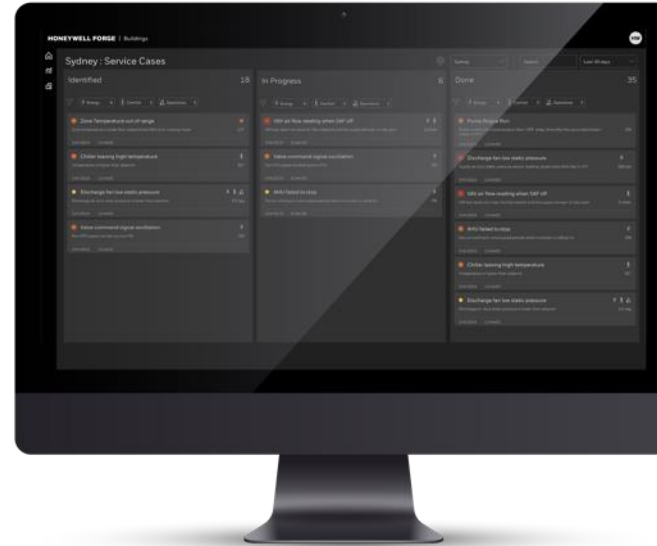
HONEYWELL FORGE

DIGITIZED MAINTENANCE



Real Time Analytics

Asset performance data meets analytical models encoded with decades of building expertise.



Pre-Fault Alerts

Performance anomalies alert managers and task workers with pinpoint direction to diagnose and repair.

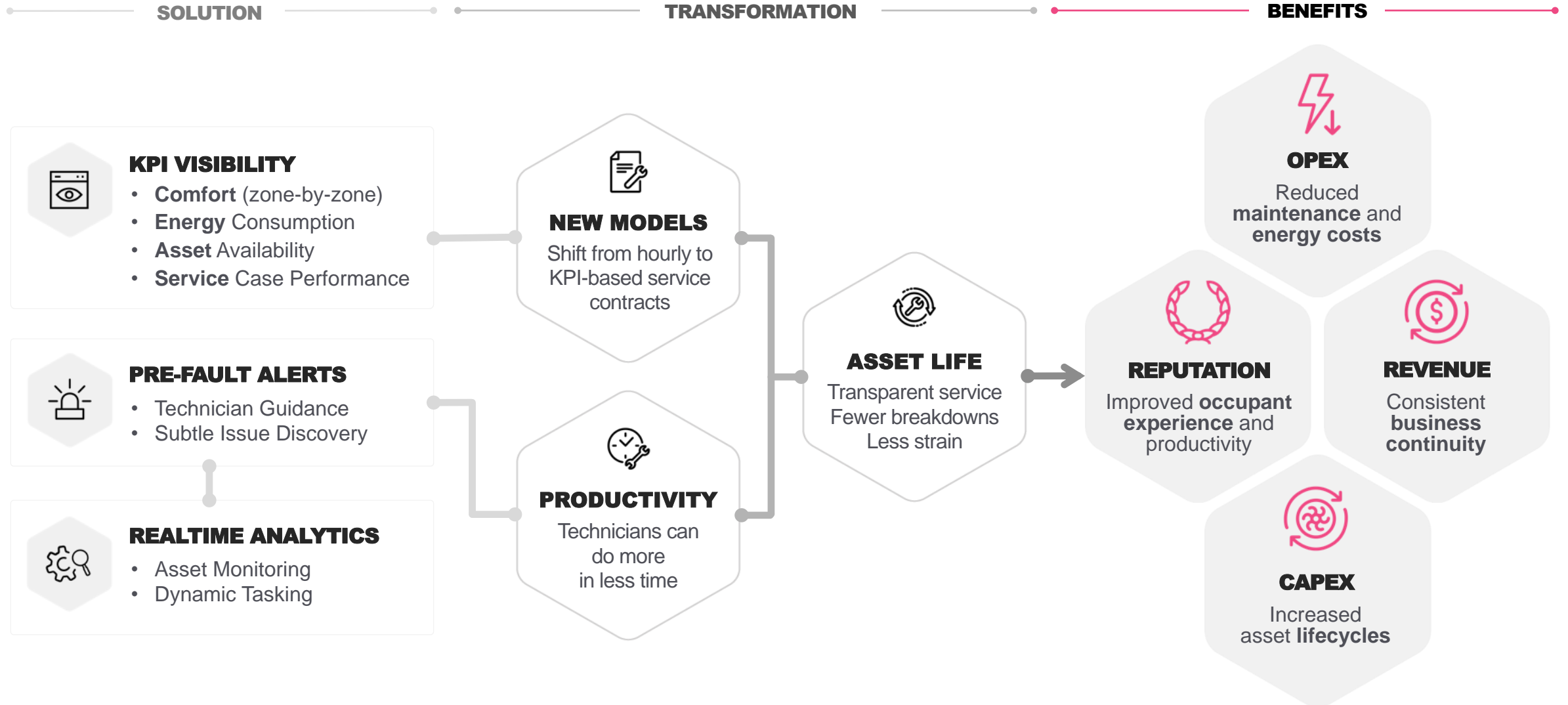


Portfolio KPI Visibility

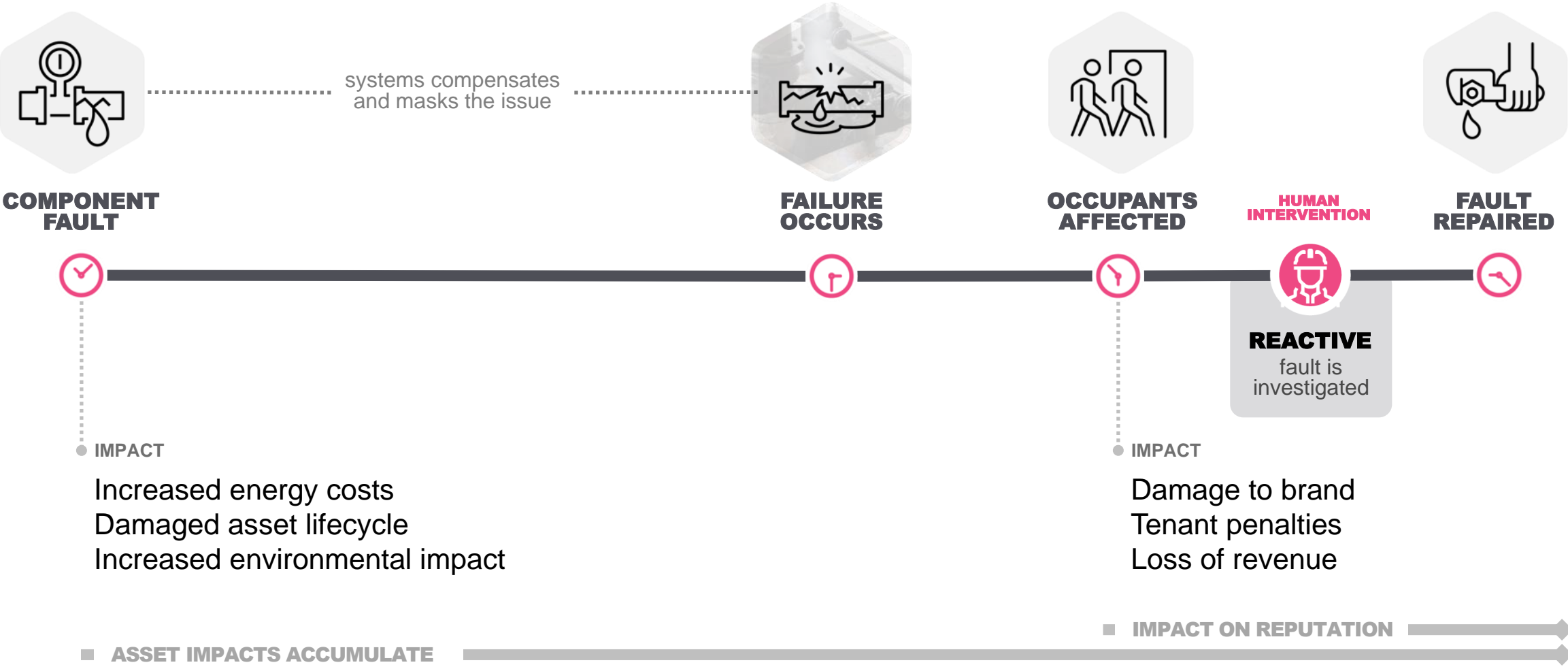
- Zone Comfort
- Asset Availability
- Energy Consumption
- Service Case Performance

**PERFORMANCE VISIBILITY AND PRE-FAULT ALERTS
ENABLE STRATEGIC TRANSFORMATION**

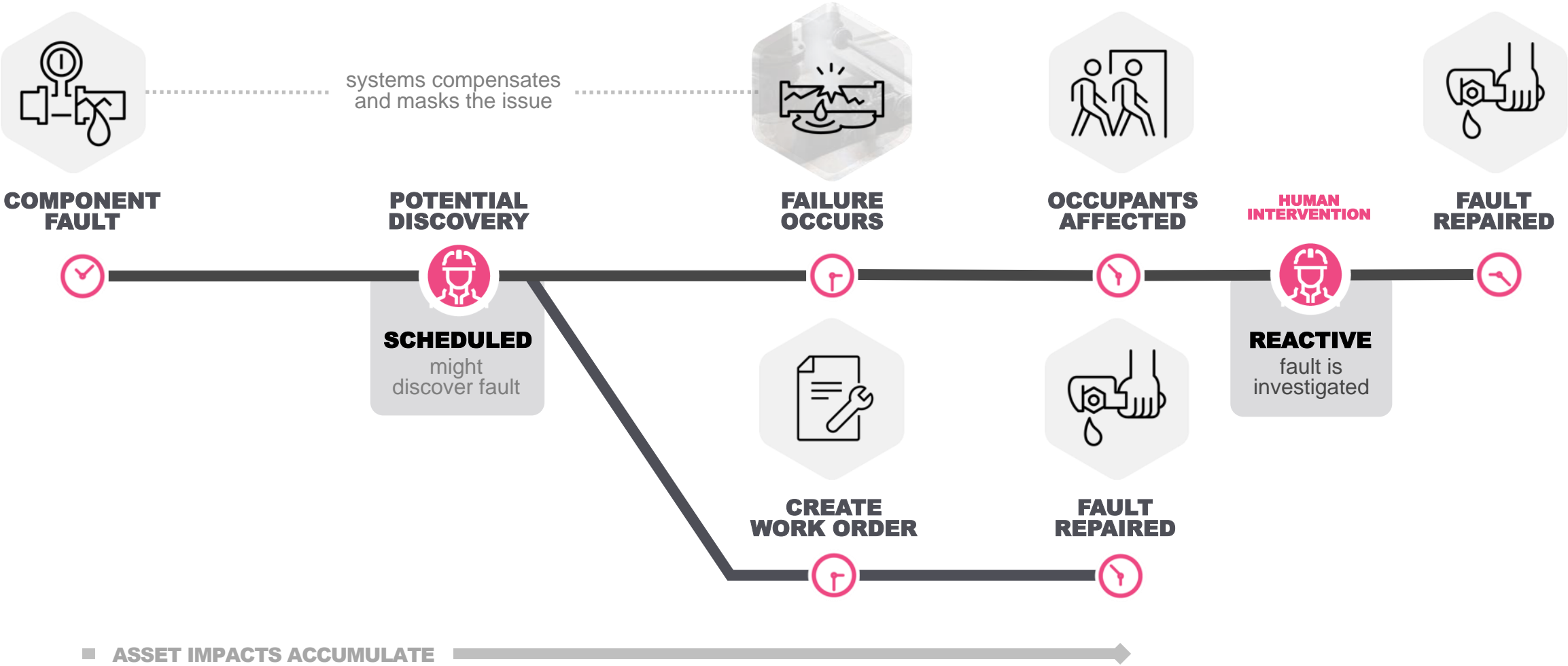
THERE'S VALUE IN TRANSFORMATION



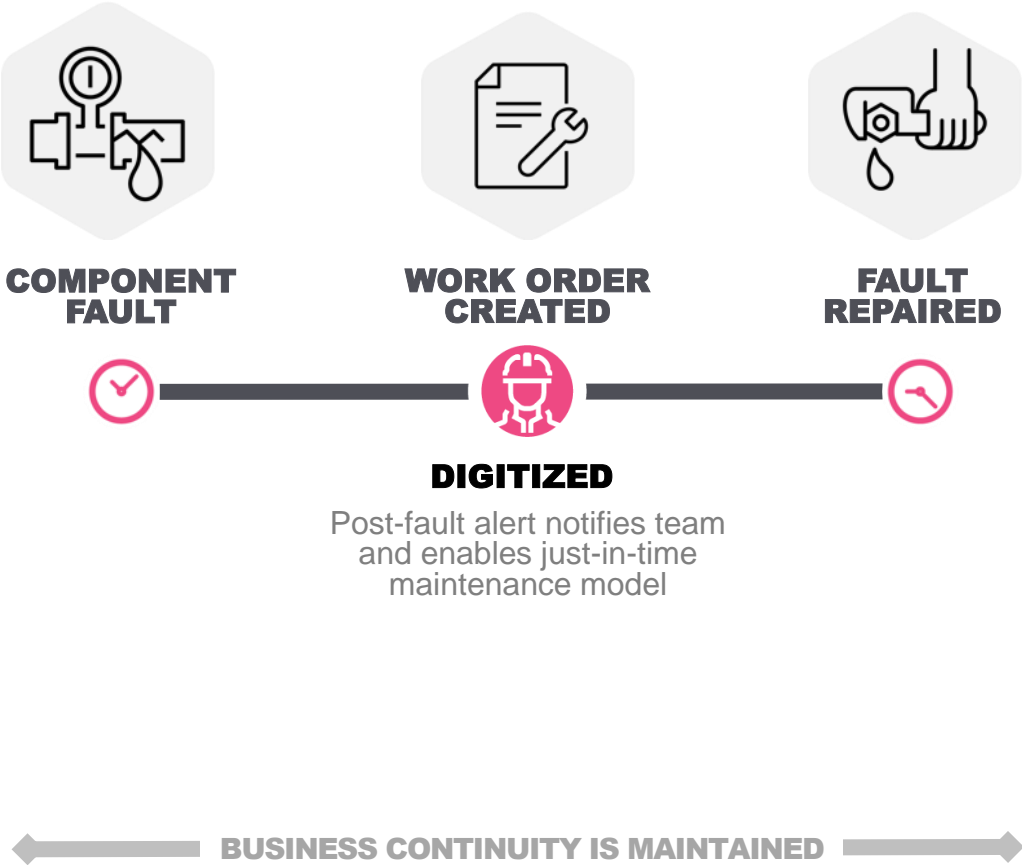
REACTIVE MAINTENANCE



SCHEDULED MAINTENANCE



DIGITIZED MAINTENANCE



DIGITIZED MAINTENANCE

END TO END VALUE



Maximized
Asset
Lifecycles



Increased
business
continuity



OPEX



CAPEX



REVENUE



KPI-Based
Maintenance
Contracts



Significant reduction
in reactive
service calls



Improved occupant
experience and
productivity



Protected
brand
perception





**HONEYWELL
FORGE**

DIGITIZED MAINTENANCE CASE STUDIES



DIGITIZED MAINTENANCE

DELIVERED RESULTS

ENERGY



Virgin Money, UK

16%

Electricity Consumption Reduction



Suntec City, Singapore

30,000k

kWh Savings in the First Month



Crown Perth, Australia

9%

Electricity Consumption Reduction

COMFORT



Ny Carlsberg, Denmark

43%

Performance Improvement



Sun Plaza, Istanbul

32%

Performance Improvement



Virgin Money, UK

45%

Performance Improvement

OPERATIONS



Crown Perth, Australia

90%

Reduction in Reactive Calls



Virgin Money, UK

32%

Reduction in FM Costs

PERTH, AUSTRALIA

CROWN TOWERS PERTH

IMPACT

Enhanced comfort conditions and energy savings are no longer mutually exclusive, you can have both with Honeywell Forge Digitized Maintenance*.

SOLUTION

Honeywell Forge Digitized Maintenance provided Crown Perth with an end-to-end solution with domain knowledge and site experience combined with hardware and software solutions. The system collects data from all enabled sensors and evolves to ensure the best practices are applied to their site.

One year on from deployment at Crown Towers Perth they are already seeing the impact with reduced energy consumption, increased comfort and a decrease in reactive maintenance.

BENEFITS



9%

451,000 kWh Reduction in Electricity
Increasing savings as the year progressed
Continuous tuning process in action



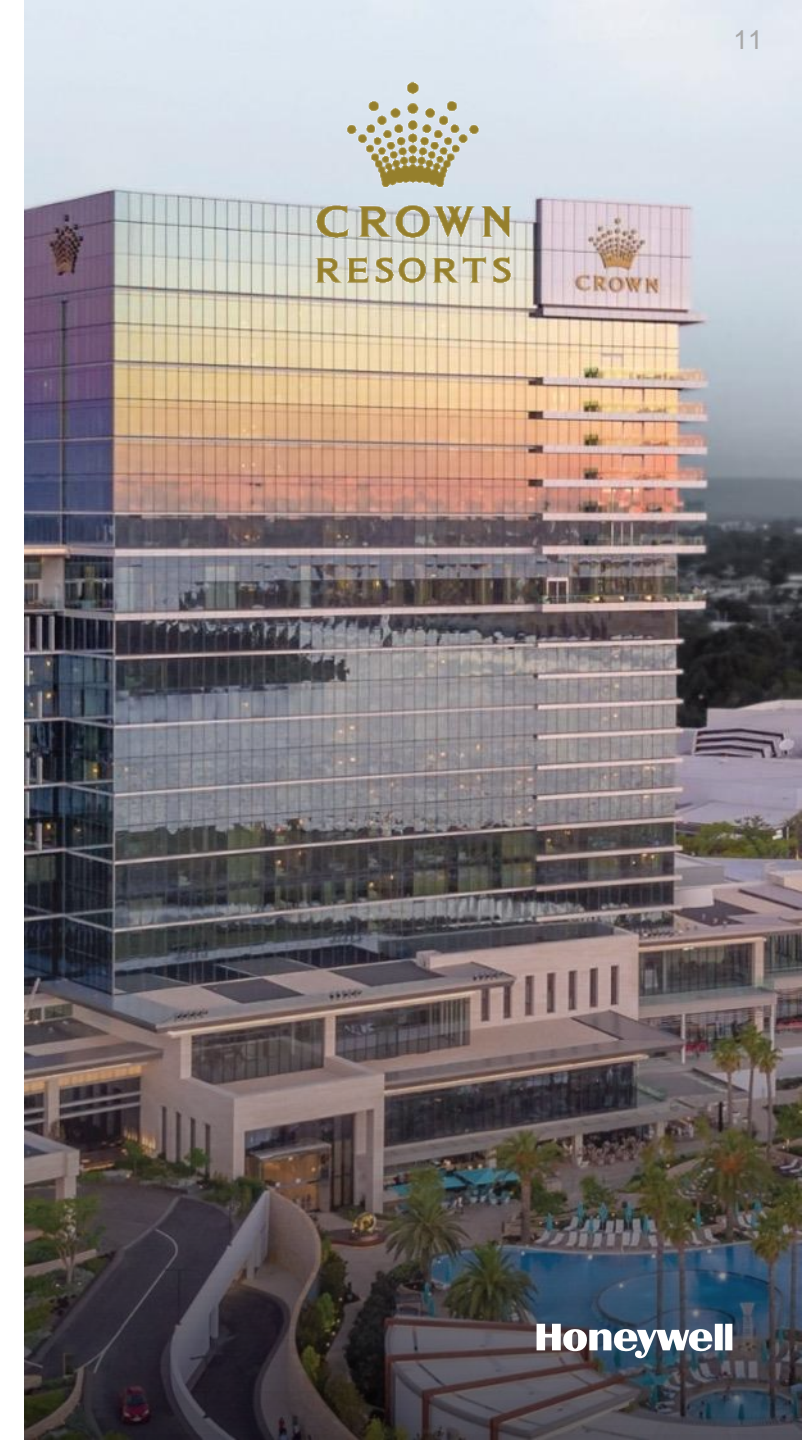
3%

Increase in Comfort Performance
Sustained comfort improvements
Comfort increase with decreasing energy use



90%

Decrease in HVAC reactive work orders
OBS is proactively finding and solving issues
End-to-end solutions that actions insights as soon as they are identified



Honeywell

COPENHAGEN, DENMARK

NY CARLSBERG GLYPTOTEK MUSEUM

SOLUTION

Honeywell deployed Honeywell Forge Digitized Maintenance that makes extensive use of 24/7 automated building monitoring and real-time analytics to ensure systems operate at optimal conditions. Forge also enhances fault finding capability, which in turn speeds up response times, helps in the prioritization of maintenance tasks, reduces running costs, boosts energy savings and increases longevity of the plant.

BENEFITS



43%

Increase in Comfort

Enhanced comfort performance for staff and visitors

Precise temperature and humidity control to ensure integrity of galleries and halls

Continuous tuning process in action



20%

Increase in Maintenance

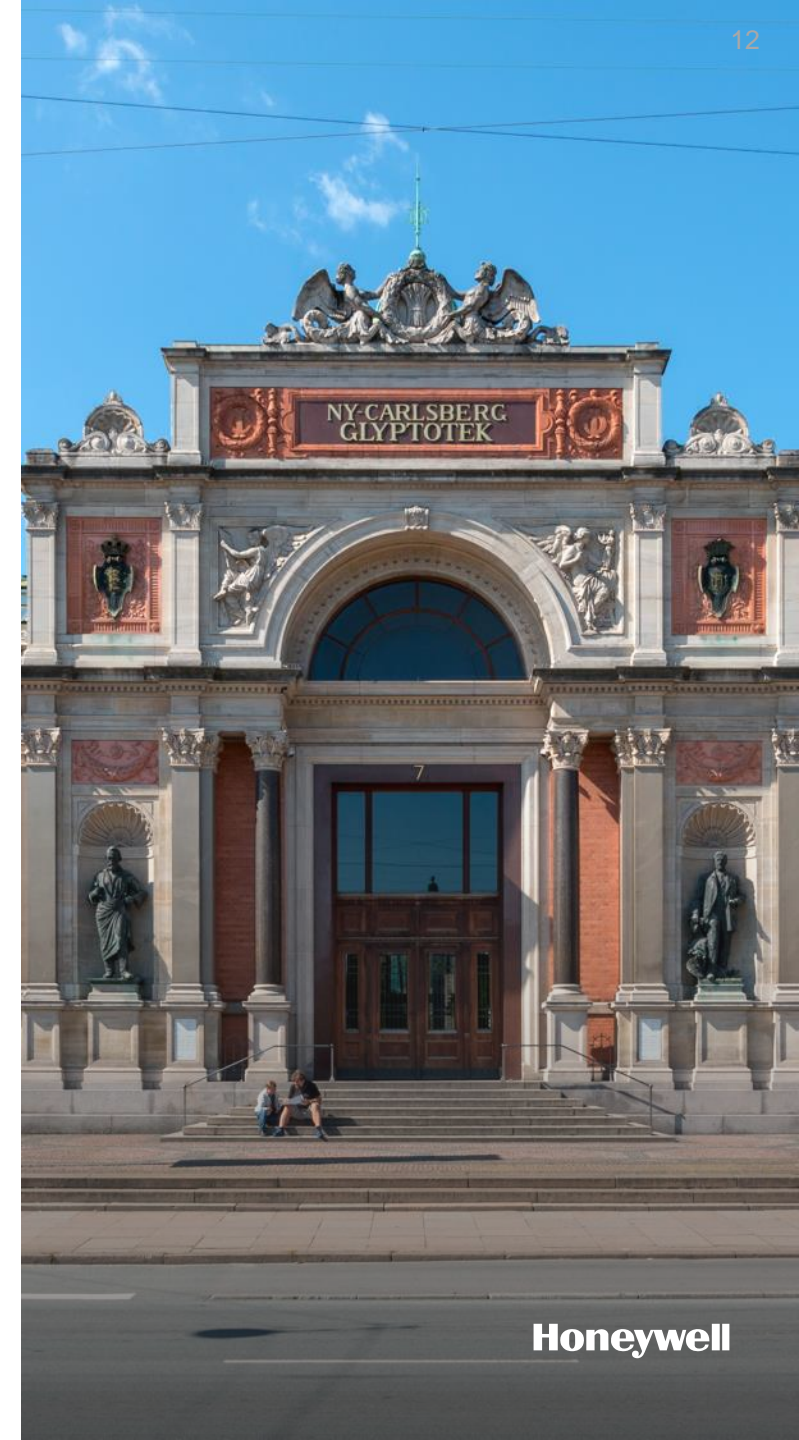
Improved system overview and reduce downtime

Optimized operational investment

Continuous tuning process in action

Maintenance capacity to implement additional system improvements

Robust, real-time reporting to respond to all system updates, events and alarms



Honeywell

SINGAPORE

SUNTEC CITY MALL

IMPACT

Within a month of deployment, Honeywell Forge Digitized Maintenance helped APM, the property manager for Suntec City, to generate energy savings of 30,000 kWh.

SOLUTION

Honeywell installed Honeywell Forge Digitized Maintenance to leverage the capabilities of latest data-driven, connected technologies. Honeywell Forge Digitized Maintenance offers real-time analytics 24/7 to assign control and energy parameters that identify system anomalies and optimization opportunities. Honeywell Forge Digitized Maintenance analytics keeps the service team on top of the chiller plant's performance at all times, to identify issues and misconfigurations earlier than traditional maintenance, saving time and money.

BENEFITS



30,000 kWh

Energy Savings in the First Month

Enhance energy saving opportunities

Expanded benefits of Honeywell Forge Digitized Maintenance to office towers, and retail and exhibition centers



0.621 kW/RT

Guaranteed Operating Plant Efficiency

Deliver optimum operational performance by controlling OPEX expenditure

Improve overall operational productivity of the facility

Enable better response time and increase insight into building performance

Honeywell workflow management app immediately notifies the service engineers



Honeywell