

# Smart Facilities

**Resilient Workplace = Resilient Operations**

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# Strategic Drivers for Facility Transformation

## Short-Term



COVID-19  
Response



Adapt enhanced  
cleaning  
practices



Manage  
In-Space  
Occupancy



Improve  
Employee  
Experience

## Long-Term



Optimized and  
safe spaces



Sustenance  
focus



Integrated  
systems



Compliance  
reporting and  
accuracy



*This is enabled by creating Digital Twins of the Physical World*

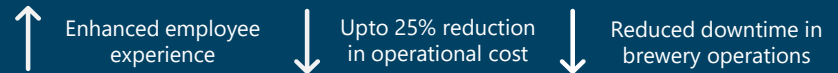
# Technology Approach Towards Building Smart Facilities

Smart Facilities solution brings safety, wellness, efficiency and a data-driven approach to securing your most valuable asset: **People**

- Leveraging the power of IoT and Cloud
- Provides immersive visual experience and real-time actionable insights
- Brings an intrusion-free, opex-based, easy to deploy solution
- The solution leverages IoT to transform inert brick-and-mortar structures into safer, more efficient, more sustainable assets
- Ensure a safe and comfortable environment for facility occupants.

## Facility Monitoring & Insights

Enable real-time visibility insights to the facility utilization, asset performance, environment health to ensure robust operations and wellbeing of the employees and other occupants.



## Ease of Use

Easy 1•2•3 Deployment



Sensors Arrive



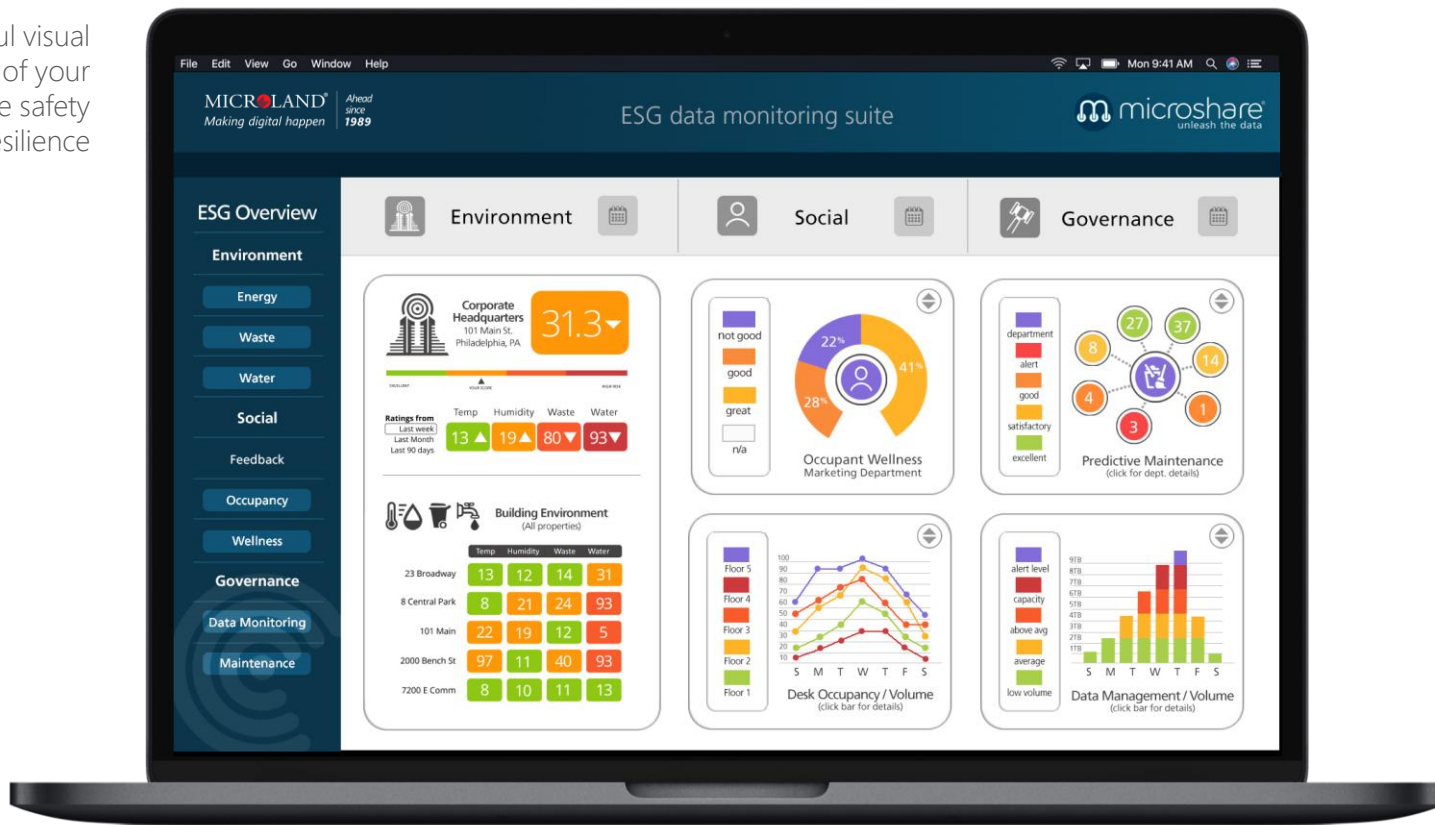
Install Sensors



View Your Data



An insightful visual  
experience of your  
facility to ensure safety  
and resilience





## Sensing as a Service

Smart Facilities leverages Sensing as a Service which is a **plug-&-play, non-intrusive, OpEx** model with reduced risk of large infrastructure investments

- Comprehensive approach to connecting and inter-relating workspace, assets, people and devices to drive business outcomes
- OpEx model improves cost forecasting and eliminates large capital investments
- Refocuses away from technology and towards actionable data and insights leveraging operational patterns.

Safety & Hygiene:

 Universal Contact Tracing
  Predictive Cleaning
  Smart Smoke Detection
  Leak Detection
  Open/Shut Indicator

Utilities:

 Asset Zoning
  Smart Waste Management
  Smart Parking
  Touchfree Feedback
  Smart Activity Timestamping
  Activity Level Indicator\* (Motion Based)

Monitoring:

 Energy
  Environment
  Decibel
  Brightness
  Desk Occupancy
  Air Quality
  Room Occupancy
  Fridge
  Water Temperature



## Universal Contact Tracing

Designed for occupant safety and universal access, Universal Contact Tracing solution is based on wearables, closing the loopholes and privacy problems of the smart-phone approach.

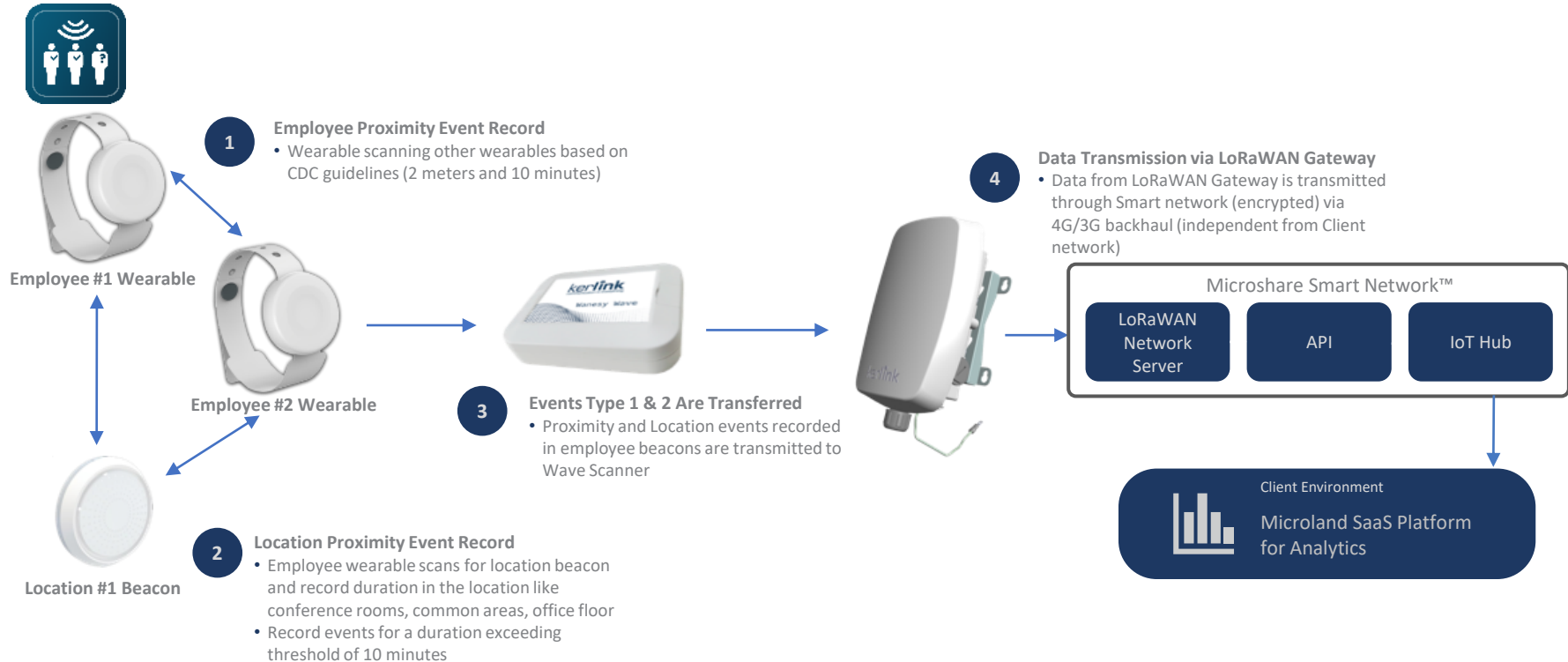
Designed specifically for the **COVID-19** emergency, the solution traces contact anonymously between facility occupants through badges, wristbands and keyrings.



- Traces contact with infected person anonymously between facility occupants through wearables. Provides implicit consent when wearable is distributed and accepted
- Identifies potential impacted zones for dis-infection or deep cleaning.
- Provides insights on most impacted zones and general effectiveness of physical distancing measures.

# High-Level Data Flow

Anonymous - All Data recorded and transmitted is device UID-based\*

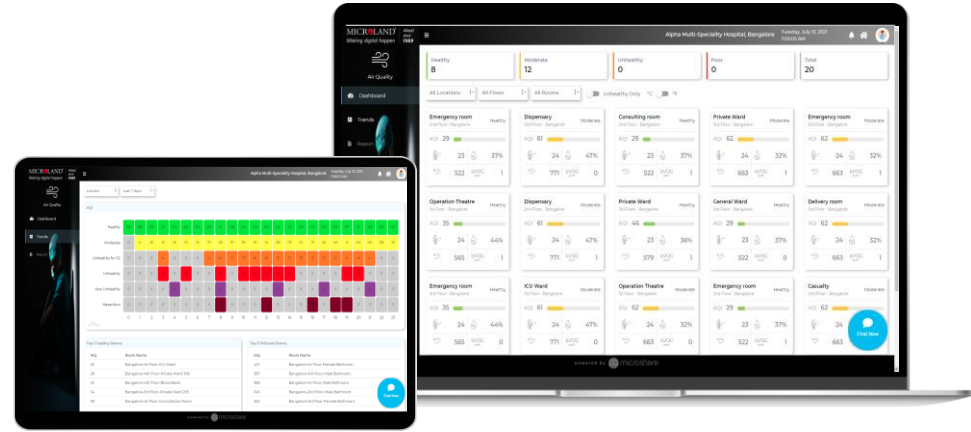


\* UID is the Unique Identifier (MAC address) associated with a device and is the only information transmitted by the Microshare solution, no personal data is involved



## Air Quality Monitoring

Optimum temperature, humidity and lowering levels of CO<sub>2</sub> through better management of air quality **reduce contagion spread** are known to improve stress levels, cognitive functions and **increase productivity** across all employees.



- Reduces the stress level of employees raising productivity and satisfaction levels
- Provides 24/7 real-time intelligence on the actual environment your employees are experiencing
- Minimize acquired infections
- Provides key ESG (Environmental | Social | Governance) data to move your facility in a greener, more sustainable direction
- Alerts and actionable data to facility managers for ventilation and other problems before they get out of hand

- Key features:
  - AQI Index with heat map visualization
  - Air quality status for all locations (Healthy, Moderate, Unhealthy and Poor)
  - Real time monitoring of Temperature, Humidity, eCO<sub>2</sub>, bVOC
  - Top 5 healthy and polluted rooms
  - Air Quality trends across facility (e.g., most polluted/healthy rooms, KPI trends and forecasts, etc.)

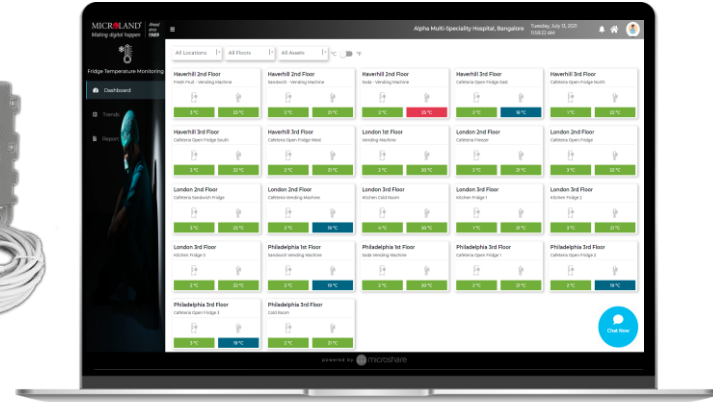




## Fridge Temperature Monitoring

Monitor and track temperature, in real-time, across your fridge and temperature-controlled areas, suitable for F&B manufacturing and warehouse facilities, office pantries, etc. Prevent spoilage by being alerted to changes in real-time temperature.

- 24/7 monitoring of fridges with wireless sensors
- Typical battery life of 5 years
- Auditable record of temperature available online
- Alerts when temperature is out of acceptable bounds or is trending towards an issue
- Analyze data to improve compliance and energy consumption.



- Key features:
  - Refrigeration assets performance on single view
    - Filter by Buildings / Rooms / Zones etc.
  - Real time monitoring of
    - Fridge Temperature
    - Ambient Temperature
  - Refrigeration trends across all critical cold-chain assets to easily identify anomalies and deviations



## Touchfree Feedback

Providing an anonymized solution to employees, staff, and visitor's feedback ensures that problems can be reported before they spiral out of control. Touchfree Feedback Stations provide push button or "touchfree" QR code functionality to increase occupant satisfaction and facility wellness.

- Reports and messages are customizable for all kinds of use cases
- Provides anonymized reporting of problems or feedback on any space at facilities
- Allows facilities managers to respond quickly to emerging problems
- Creates an easy-to-use channel for occupants to share feedback, and insights for facility managers to carry out data-driven experience management

### How are you?

Scan the QR code to the right with your phone to instantly enable "Touchfree Feedback" on your personal device.



- Key features:
  - Employee and Visitor feedback on facility experience
  - QR based Touchfree system to record feedback
  - Accessible on any browser-based mobile device
  - Feedback trends and ratings across facility amenities
    - Available for Daily / Weekly / Monthly / Custom Periods

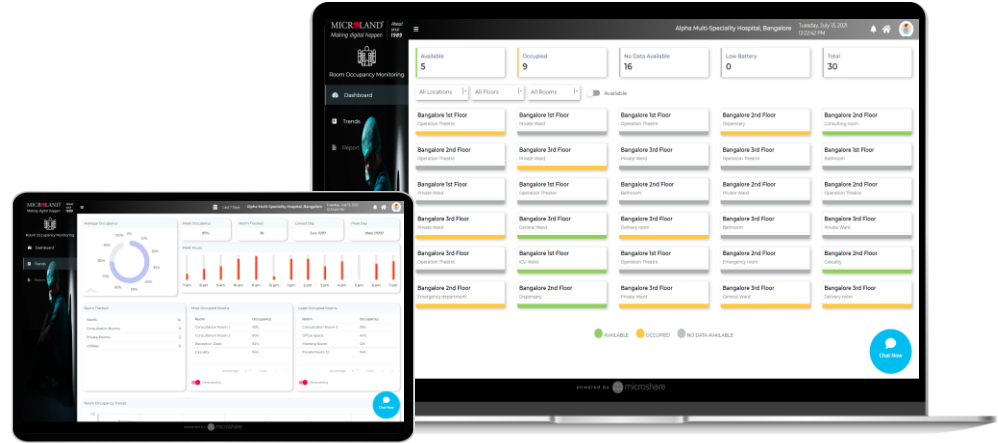


## Room Occupancy Monitoring

Knowing how heavily any space is utilized is a pre-requisite to understanding the kind of attention it requires and the ROI it delivers. From reception to storage areas to breweries to office cabins and more, Occupancy Monitoring provides actionable data for facilities operations and strategic insights for facility managers and management team.

A must have in **the New Normal**.

- Identifies high and low usage areas for demand driven sanitization and HVAC purposes
- Occupancy-based data-driven cleaning schedules
- Provides data that helps lower energy and maintenance costs, as well as feeding an ESG agenda
- Creates a valuable historical picture of space usage for decision makers



- Key features:
  - Overall occupancy insights for each room (cabins, meeting rooms, storage areas, washrooms, etc.)
  - Occupancy trends to optimize operations & safety\*\*
    - Avg. Occupancy Rate
    - Peak Occupancy Insights
    - Most/Least Occupied Spaces
    - Space by Utilization (%)
    - Space Utilization by Room, Location, Time, etc.

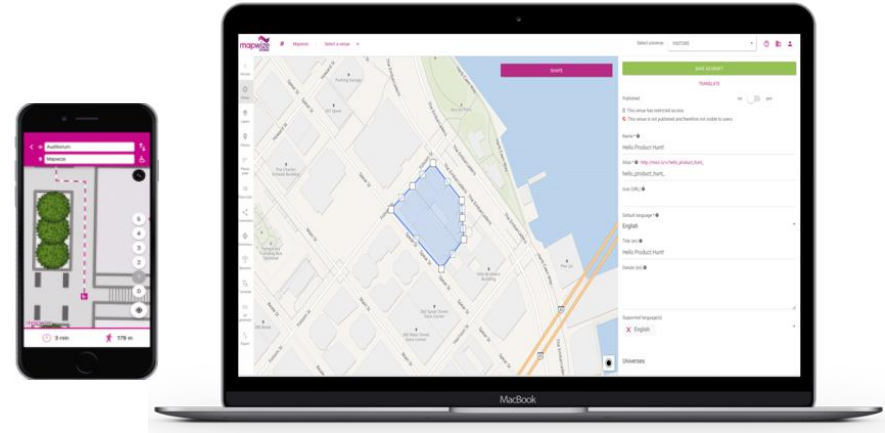
\*\* future release



## Facility Navigation

Interactive maps and wayfinding for large manufacturing and distribution facilities for staff and visitors to find their way around and improve use of resources with our digital indoor facility navigation

- Provides a better staff experience through intuitive, stress-free navigation
- Makes facility accessible friendly for all users
- Reduce number of late and missed appointments and save costs
- Provide a consistent experience inside your facility on any device: smartphone, tablet, desktop and kiosk
- Optimize staff productivity with less interruptions of staff being asked for directions



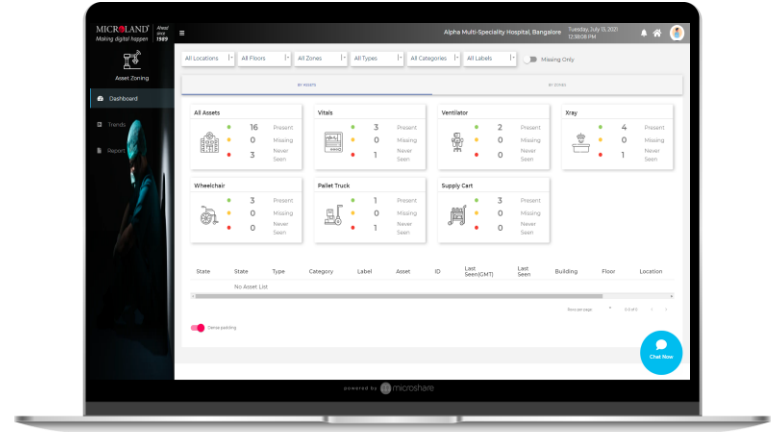
- Key features
  - Way finding and accessibility
  - QR code locators allowing users to locate themselves
  - Personalized maps
  - Direction sharing
  - Interactive kiosk maps
  - Equipment tracking
  - Indoor navigation



## Asset Zoning

Tracking of portable devices and equipment in offices, breweries, and warehouses with use of geo-fencing and alerts for specific assets.

- Up to 15% staff time saved
- Increases productivity and staff morale
- Up to 68% increased inventory accuracy
- Prevents theft and loss
- Track assets across facility locations
- Improved data insights on asset utilization leads to savings on capital expenditure



- Key features:
  - Asset Tracking
    - By Asset Type (e.g., pallets, forklifts, trolleys, etc.)
    - By Facility Zones (e.g., storage zones, brewery zones, etc.)
  - Track current and last seen locations for misplaced assets
  - Geo-fencing of assets, and alerts in case of violations



## Predictive Cleaning

From office buildings to factories to warehouses, occupants are only as clean as the common areas and washrooms they use. Our Predictive Cleaning solution has lowered infection rates and costs in large facilities.

Measuring utilization with feedback data enables 'on demand' and 'as needed' cleaning, move away scheduled cleaning



- Lowers infection and liability risk
- Monitors and records activity of toilet areas
- Digital cleaning record – Smart Timecard.
- Provides Touchfree Feedback
- Creates an audit trail of staff response and user experience

# Global deployments across multiple industries



Corporate Offices



Facilities Management



Hospitals



FMCG



Pharmaceuticals



Logistics



Public Transport



Care Homes



Food Manufacturing



Army/Defence Bases



Universities



Mining & Power Plants

# Growing Clientele in Facility Management

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since  
1989*

# Sample Sensors

## Occupancy



Detect motion and record occupancy

## Record & Report



Simple buttons record and report attendance and issues

## Monitor Assets



Reporting 0-1 statuses and controlling relays.

## Parking



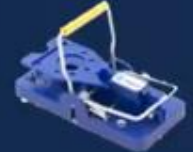
Wireless sensors for detecting parking occupancy

## Water Temperature



Clip-on water temperature logger to assist with legionella prevention

## Pest Control



Connected mouse/rat traps alerting when trap is activated

## Temperature & Humidity



Report comfort level and alert change of conditions

## Air Quality



Record temperature, humidity, VOC, Lux, CO<sub>2</sub>

## Waste Management



Monitor fill level of recycling containers

## Security



Open/Close sensor to monitor door or window status

## Water Usage



Record water usage to reduce impact and detect leaks

## Asset Tracking



Locate assets within the campus and in the building