

## **Remote Monitoring Solution**

## Our Objectives

#### Using simple monitoring solutions to automate manual tasks...



#### Save time

Thousands of engineer hours per year are saved, allowing them to focus on more skilled tasks



## Reduce the cost of operation

Reduce the number of visits required per site from 12 per year to just two, saving call-out fees



#### Save energy

Save 000s of Ls per year in water per site, as well as gas from heating taps and excess carbon in car/van trips



#### Improve maintenance Asset longevity

Issues are identified as soon as they occur and allow for proactive, rather than reactive treatment



### Peace of mind concerning compliance obligations

Increase your visibility on water and EML compliance a thousand times over

Monitor

Gather the key data from your operational systems to understand performance.

Analyse

Simple insightful presentation and analysis turn data into valuable information.



Improve Resulting in lower carbon consumption, reduced costs and robust compliance.

### What solutions does this offering include?



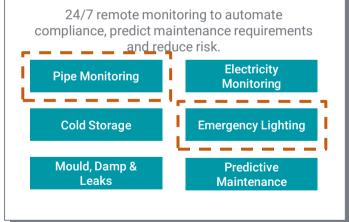
### Healthy Building System ™

Improve the health, well-being and satisfaction of building occupants.

Air Quality	Occupancy
Smart Cleaning	Water Safety
Occupant Satisfaction	Safety & Security



### **Smart Maintenance**



### How it works



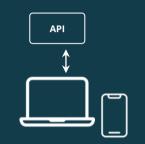


#### **Discrete sensors**

The world's smallest sensors take seconds to install, send data every 5 or 15 minutes and have a battery life of up to 15 years.

#### Cloud storage

Sensor data is received by cloud connectors over radio frequency and then sent to the cloud via secure cellular networks.



#### platform

Use your mobile or computer's web browser to visualize data and get powerful insights. Or send data to your systems with our API.

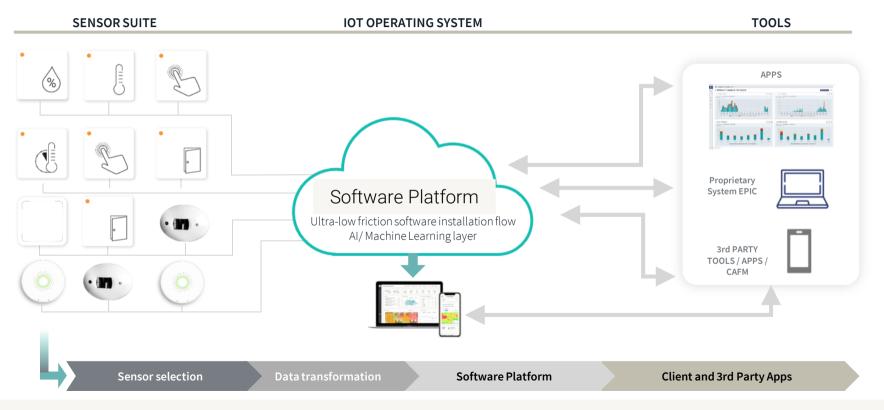


### **Reports & alerting**

Notify your team to urgent matters with customizable sms and email alerts. Export and share your data with oneclick reporting.







# Pipe Monitoring





### Introducing Pipe Monitoring

Automatically track water movement and temperature

# 

#### **Traditional Old Way New Innovative Way** ENGINEER CALLED TO MANUALLY FLUSH EVERY LIVE ALERTING SYSTEM TO ONLY FLUSH THE TAPS 윤 Pipe Monitoring Summary $\rightarrow$ TAP EACH MONTH (OR MORE OFTEN) THAT NEED IT (TYPICALLY 2% OF ALL TAPS) TOTAL SENSORS 5 MINUTE READINGS DELIVERED 24/7, Hot 80 MANUAL TEMPERATURE CHECK $\rightarrow$ **365 DAYS A YEAR** Cold 70 Blended 10 MANUALLY GENERATE LEGIONELLA REPORT **ONE CLICK REPORTING FOR** Calorifier Flow 5 $\rightarrow$ LEGIONELLA COMPLIANCE Calorifier Return 5 170 TOTAL LIMITED INFORMATION ON CALORIFIER ONGOING INSIGHTS AND PREVENTATIVE ALERTS $\rightarrow$ PERFORMANCE E.G. UNEXPECTED DROPS IN TEMPERATURE

TOTAL FAIL FAIL TEMP FAIL COUNT PERCENT FAIL COUNT 0 COUNT 12.5% 10 2 0% 0 0 1 10% 1 0 1 20% 0 0 0% 0 0 12 7% Q 3

🗏 170 sensors 🛛 🛱 7 Days

130

# Pipe Monitoring (L8)

Automate legionella prevention and compliance. Monitor the movement and temperature of water to determine when pipes require flushing.



#### Increased efficiency: Automated reporting

24/7 monitoring is more reliable, consistent and efficient vs manual.

Reduced risk of bacterial growth Protect employees by ensuring safety standards are met.

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Cost reduction 91% reduction in engineer car trips.

Y

Drive sustainability: Energy saving Annual savings of >600 litres of water per tap and >2900 kg of carbon per building being eliminated.







### Install in minutes

#### **1.Install Cloud Connector**

Plug socket only required, connects via mobile network (2G/3G/4G) Range - 20-75m environment dependent, average c. 40m

### **1.Identify sensors**

Identify sensors using QR code/touch/sensor ID Name, configure and allocate sensors to buildings/floors at point of installation

#### **1.Physically install**

Bracket -> Sensor -> Thermal pad -> Cable tie

### **1.Apply Offsets**

Take manual temperature reading (freshly calibrated probe essential) vs sensor reading





### What's in it for you?





# Combine data sets for greater context

Overlay and compare different solution's data, such as IAQ and occupancy, to get full context and a true picture of what is happening across your estate.

	Beardroom, Floor 4, Capital Tower (UK HQ)		
	Usage of this space has been incre		
Floor 9, 13, Soho Sq	uare	d by 20 occupants per day	
The HVAC in this bu serviced soon	uilding may need to be	Not interested	
On this floor, TVDC levels have be which is indicative of influencies	een high for the last 8 days in a row in your HVAC system.		
💛 This is useful	(i) Not interested		

### Drive action with Automated Al insights

Building upon the vast data and contextual analysis, our Al generates automated insights to explain what is happening to help you make better decisions faster.



# Benchmark building performance

Compare and rank the performance of every building in your estate to identify where to focus your efforts and lift the overall performance of your estate.

### Report automation, alerting, and insights



The dashboard shows a high level overview of outlet performance across an estate/building/floor

윤 Pipe Monitorin	g Summary			×	' ℃ ‡
	TOTAL SENSORS	TOTAL FAIL COUNT	FAIL PERCENT	WATER MOVEMENT FAIL COUNT O	TEMP FAIL COUNT
Hot	80	10	12.5%	8	2
Cold	70	0	0%	0	0
Blended	10	1	10%	1	0
Calorifier Flow	5	1	20%	0	1
Calorifier Return	5	0	0%	0	0
TOTAL	170	12	7%	9	3
				🗉 170 sensors	🗎 🗇 Days

Alerts can be set for temperature or flushing conditions to direct engineers to issues/actions as soon as they arise

Monday, 6 I	December 2021
No alerts th	is day.
Thursday, 1	4 October 2021
	04:56 Water moving count was less than 1 within an hour on 14 Oct 2021
🗸 Acki	nowledged by Will Jackson on 20:21 06.12.2021
20:21	
Will Ja	ickson
Terry /	Acknowledged - flushing arranged for tomorrow (15 October).
Wednesday	, 13 October 2021
	20:30
<b>A</b>	Water moving count was less than 1 within an hour on 13 Oct 2021
1 40	knowledge

21 - 26 Oct 2020 [MI - 08 Gents - Blended	Blondod	36.4	20.9 Pass	Pass	Pass	26.10.2020
21 - 26 Oct 2020 MI - 00 Gauss - Cold	Celd	25.2	15.6 Pass	Pass	Pass	26.10.2020
21 - 26 Oct 2020 MI - 08 LDS - Blonded 1	Blondod	36.45	21.1 Pass	Pass	Pass	26.10.2020
21 - 26 Oct 2020 MI - 08 LDS - Blended 2	Blended	34	18.99 Pass	Pass	Pass	28.10.2020
21 - 26 Oct 2020 MI - 08 LDS - Cold	Cold	23.85	17.15 Pass	Pass	Pass	24.10.2020
21 - 26 Oct 2020 MI - 06 Mega Flow - Gents H		56.9	41.65 Pass	Pasa	Pass	26.10.2020
21 - 26 Oct 2020 Mt - Behind Surroung - Dead	hod To Het	34.45	32.4 Fail	Fail	Fail	26.10.2020
21 - 26 Oct 2020 MI - Chanses Cupboard - Cul	M CaM	49.95	21.2 Fail	Page	Fail	26.10.2020
21 - 26 Chn 2020 Mil - Disabled Ground Floor -	Celd Celd	29	16.75 Pass	Page	Page	26.10.2020
21 - 26 Oct 2020 Mil - Fall Flew	Calorither flow	20.7	14.3 Fail	Page	Fail	26.10.2020
21 - 26 Oct 2020 MI - Ground Floor Disabled 8		57.4	43.05 Page	Pasa	Page	26.10.2020
21 - 26 Oct 2020 M2 - Bay 29 Bib Tao	Cell	16.25	11.05 Pass	Fail	Fail	26.10.2020
11 - 26 Oct 2020 [MI] - Basergeri Mains - Cold	Cald storage	14.45	12.7 Fass		Fass	24.10.2020
11 - 24 Chr 2020 MI - Basement Mains - Cold I		29	18.5 Page		Page	26.10.2020
1 - 26 Oct 2020 MD - Bib Mains - Cold	Cold storage	16.45	11.35 Para		Page 1	26.10.2020
21 - 26 Oct 2020 MD - Bib Mains - Cold	Cold storage	16.45	10.2 Pass		Page 1	26.10.2020
11 - 26 Cut 2020 MD - Boll Sy Todat - Cold	Cell	23	18.2 Pass	Fail	Fail	26.10.2020
1 - 26 Col 2020 M3 - Boll Sy Todat - Cold 1 - 26 Col 2020 M3 - Boll SY Todat - Hot	Calif	59.15	19 Pass	Part	Pass	26.10.2020
11 - 26 Chr 2020 M3 - Ball TMV	Biomical	52.45	15.45 Fail	Pass	Fail	24.10.2020
21 - 26 Oct 2020 MD - Bolli TMV 21 - 26 Oct 2020 MD - Main Tatk Room - Main		13.55	12.45 Pas	1980		26.10.2020
11 - 20 OK 2020 MD - Main Tark Room - Main	A WINCCING PROPAGE		12.45 Pass		Pass	28.10.2020
1 - 26 Oct 2020 MH - Back of house OCS - Me		48.55	42 Fail	Pass	Fail	26.10.2020
11 - 26 Oct 2020 MH - Disabled - Hot	Max.	24.3	25.25 Pass	Pass	Page	26.10.2020
21 - 26 Oct 2020 MH - Disabled - Hot	Cell	24.95	18.6 Pass	Pass	Pass	26.10.2020
11 - 26 Chr 2020 Mit - Ladica Shower	Calif	24.45		Fail	Fail	26.10.2020
21 - 26 Oct 2020 MH - Ladies Shower 21 - 26 Oct 2020 MH - Locker Room - Gents Sh		24.55	22.2 Fell 21.95 Fell	Para	Test .	26.10.2020
21 - Die Chil 2020 Mit - Locker Room - Germ Mit 21 - Die Chil 2020 Mit - Locker Room - Ladies Bit				Pass -		26.10.2020
		39.8	22.05 Pass		Pass	26.10.2020
1 - 26 Oct 2020 MH - Locker Room - Ladies H		47.2	22.75 Fail	Pass	Fail	26.10.2020
1 - 26 Oct 2020 Mil - Locker Room Mens - Bie		33.43	20.2 Pass	Pass	Pass	26.10.2020
21 - 26 Oct 2020 Mit - Locker Room - Mens Ho		47.1	21.6 Fail	Pass	Fail	26.10.2020
11 - 26 Oct 2020 M4 - OCS Back of Hease Teil	icta - L. Hiet	34.7	31.05 Fail	Tail	Tail	26.10.2020
1 - 26 Oct 2020 MS - Lx 20 FOH - Genta Blon		40.6	22.4 Pass	Pass	Pass	26.10.2020
21 - 26 Oct 2020 MS - Lx 20 FOH - Genta Blon		34.7	22.25 Pass	Pass	Pass	26.10.2020
11 - 26 Oct 2020 MB - Lx 20 FOH - Gents Blen		37.1	23.1 Pass	Pass	Pass	26.10.2020
1 - 26 Oct 2020 MS - Lx 20 FOH Ms - Blendo		38.2	20.8 Pass	Pass	Pass	26.10.2020
11 - 26 Oct 2020 MS - Lx 20 FOH Ms - Blendo		37.2	20.75 Pass	Pass	Pass	26.10.2020
11 - 26 Oct 2020 MS - Lx 20 FOH Ms - Blando		37.55	21.5 Pass	Pass	Pass	26.10.2020
11 - 26 Cos 2020 MS - Lo 20 FOH Mo - Blendo		34.25	20.55 Pass	Pass	Pass	26.10.2020
11 - 26 Oct 2020 MS - Lo 20 FOH Ms - Blendo		38.3	22.4 Fass	Pass	Pass	24.10.2020
1 - 26 Cks 2020 MS - Lo 20 FOH Ms - Blendo	d 6 Blended	39.05	22 Pass	Pasa	Pass	26.10.2020
1 - 26 Oct 2020 MS - Lx 20 FOH Ms - Blendo		35.6	22.55 Pasa	Pasa	Pass	26.10.2020
21 - 26 Oct 2020 MS - Lo 20 FOH Ms - Blando	d 8 Blon-dod	37	21.85 Para	Pass	Page	26.10.2020
11 - 26 Oct 2020 MS - Lo 20 FOH Ms - Cold	Celd	27.15	10.1 Pass	Pass	Pass	26.10.2020
11 - 26 Chil 2020 MS - Ly 20 - Mega Flow 1 - 8		65.4	24.75 Pass	Page	Page	26.10.2020
11 - 26 Ces 2020 Mit - Lo 20 - Mega Flow 2 - 8		59.1	23.25 Page	Pass	Page	26.10.2020
21 - 26 Oct 2020 MS - Lx 20 - Mega Flow 3 - 8		61.85	25.05 Page	Pass	Pass	25.10.2020

Reports mimic those currently being filled out by hand but are generated in seconds; can be stored in the Infogrid system

### Simple, affordable, scalable





#### Sensor agnostic data

- We source the best sensor technology to collect the broadest set of building data.
- We've made installation simple so clients and 3rd party installers can self-serve at scale.



#### Access the data your way

- Access analysis, reporting and alerting via our platform.
- Integrate into your own systems for further analysis or to generate work orders.



#### Subscription-based pricing

- A flexible approach ensures pricing is tailored to only the solutions you require.
- Spread the cost over to gain greater value from your contract.

### Across our <6K clients will have saved...



39 days per month In flush time (traveling to and from the site and flushing each and every tap)	97.7% of water waste By flushing only taps that needed to be flushed, rather than flushing every tap.	3 tonnes of carbon per building per year On remote engineer car journeys
>600L of water saved per year, per tap Reduced flushes, mean less water wasted	81% of labour time By building engineers in filling out forms, taking temperatures and flushing taps	£100 thousand water per year by reducing unnecessary flushes (across 255 sites for one FSI client)

### Private Care Provider

### Legionella risk management

### **Problem Solving**



#### THE CHALLENGE

Our client, a private care provider, has hundreds of branches across the country that require engineers to check for legionella bacteria. They are checking manually each month and recording by hand in a spreadsheet.

One particular site was of major concern having to constantly battle legionella positive results.

#### OUR SOLUTION

#### Pipe Monitoring Solution.

We implemented real-time monitoring from tiny wireless sensors to track temperature and water movement. Using our Al-powered Building Intelligence platform we enabled our client to track spikes in temperature change in real time, set alerts for irregular activity and easily download a monthly report.

Adding to the pipe monitoring solution we have our own healthcare specialist who understands the HTM and the estate.

#### RESULTS

- Data was gathered enough to point to the temperature issues in return pipework
- Identified areas of thermal ingress due to a lack of insulation
- Proven manual test results were inaccurate.

Additional discussion

- 4,455,642 litres of water saved per annum
- 14,521 Kg CO2 saved (heating water)
- **13,794 KwH saved** (heating water) per annum
- >£100,000 in cost of water and electricity savings p.a. to the client

### What else we can measure?

Electricity	Heating	Lighting & noise	Water	Waste**
Appliance energy usage	Ambient temperature	Light levels	Water temperature	Waste level / depth
Sub-metering	Water system temperature	Noise levels	Water flow/ flushing	Weight
Smart meter readings	Calorifier / boiler performance	Emergency Lighting	Drainage	
	Cold storage temperature	Air quality	Leaks	
Occupancy	Sub-metering	Radon		Security
People entering / leaving	Predictive Maintenance	C02	Feedback	External doors
Desk occupancy	Air Filters	TVOCs	Touch / presses (individual	Fire doors
Room / cubicle occupancy	Emergency Lighting	Humidity	buttons or touch panels)	Windows
	HVAC	PMs		
	Pumps & Equipment (Vibration)		* Emissions data calculated either tonnage or gCO2eq/kWh ** Trial stages	r based on overall CO2

15



### Thank You

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