EnviroLogik

DYNAMIC ENERGY MANAGEMENT PLATFORM

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UNIVERSITY OF OXFORD

ANNUAL ENERGY CONSUMPTION

78,000
Tons of
CO2 emitted

£12M
Spent on heating
energy

INVESTIGATIONS DISCOVERED

70%
Underutilisation
of rooms

40%
Energy wasted

HUGE OPPORTUNITY COST

£5M
NOT spent on
medical research

IT'S A COMMON ISSUE ACROSS MULTIPLE PROPERTY SECTORS

Education

Healthcare

Hotels

Offices

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ISSUE: WASTED HEATING ENERGY IN COMMERCIAL AND PUBLIC SECTOR BUILDINGS

CAUSE

1. UNDERUTILISED ROOMS
2. TRADITIONAL WHOLE-BUILDING "ON/OFF" BOILER OPERATING REGIMES
3. NO DYNAMIC ROOM-BY-ROOM HEATING CONTROL IN 99% OF BUILDINGS

Buildings heated to maximum requirement irrespective of room occupancy, true need or individual preference.

EFFECT

1. WASTED ENERGY
2. UNNECESSARY COSTS
3. UNNECESSARY CARBON EMISSIONS
4. UNCOMFORTABLE WORKSPACES

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THE SOLUTION:
STOP HEATING EMPTY ROOMS!

* IoT, Cloud, AI optimisation, Machine Learning algorithms, LoRaWAN long-range communication, energy harvesting, QR codes/webapps,

COMBINE LOW RISK, EXISTING ADVANCED TECHNOLOGIES*

TO CREATE A SIMPLE TO USE

DYNAMIC ENERGY MANAGEMENT PLATFORM

TO ONLY HEAT ROOMS ACCORDING TO OCCUPANCY AND NEED

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SOLUTION: USE AN INTELLIGENT ENERGY MANAGEMENT PLATFORM TO STOP HEATING EMPTY ROOMS

BUILDING MANAGER'S DASHBOARD

INTELLIGENT CONTROLLER

IN-ROOM QR CODE

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INTELLIGENT CONTROLLER

EASY & RAPID DEPLOYMENT (1min/TRV)

- No wires, no mess, no disruption
- No building regs or LBC required

ROBUST COMMUNICATIONS WITH LoRaWAN TECHNOLOGY

ENERGY HAVESTING MEANS NO BATTERIES

- No maintenance
- No waste
- No opex

Up to 4 Layers of Simple Control

- Operates within the boiler settings to give

1. Schedules & Real-Time Control — Building Manager's dashboard

- Many types of digital calendars for events or periods scheduled by others (eg holidays, voids)

2. Room Booking System Integration — Optional / where appropriate

- Instant touchless control via mobile for occupants to balance comfort and energy savings.

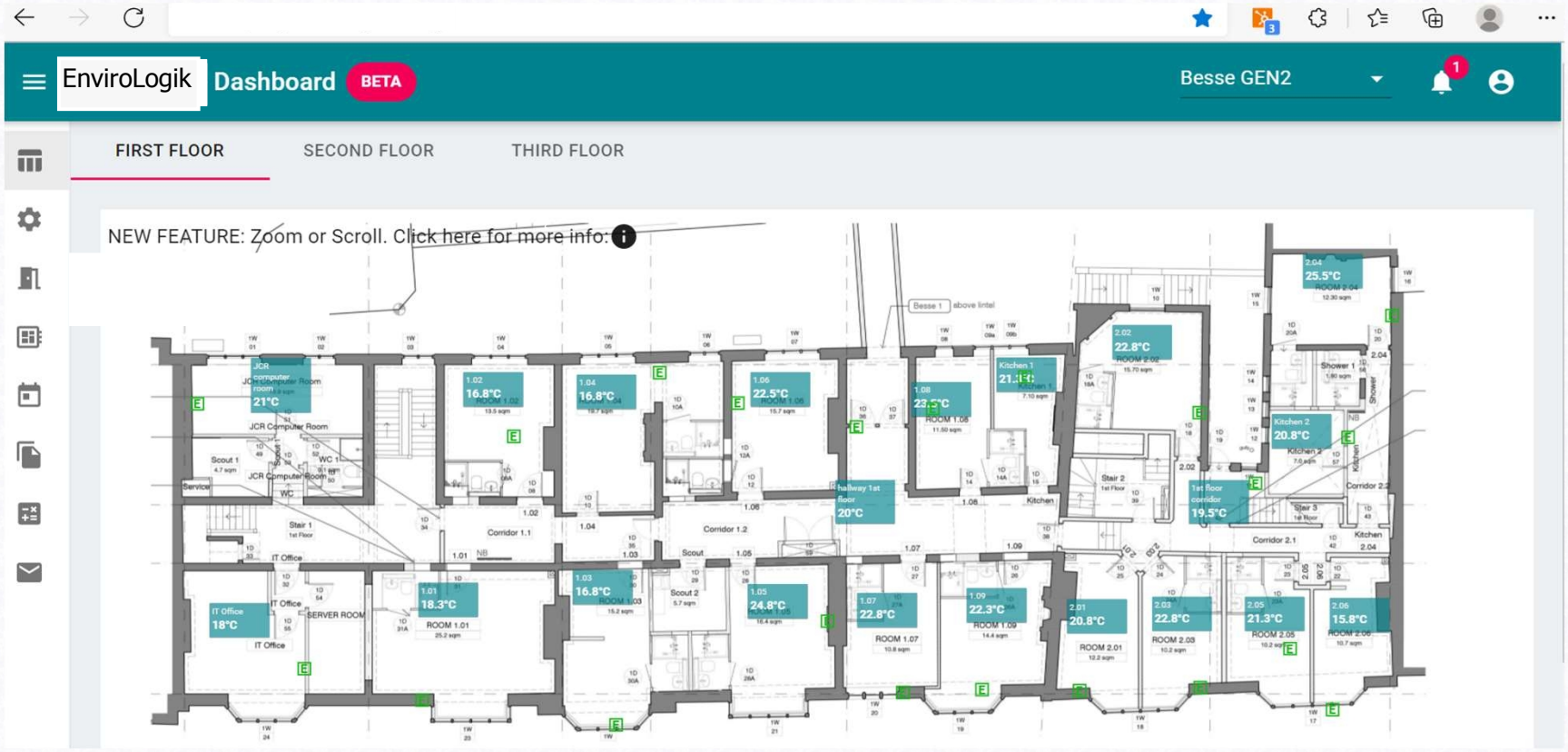
3. In-room QR code — Optional / where appropriate

- Learns true usage patterns of rooms to add layer of predictive heating control without sensors.

4. AI Occupancy Detection — In Room Occupancy montoring

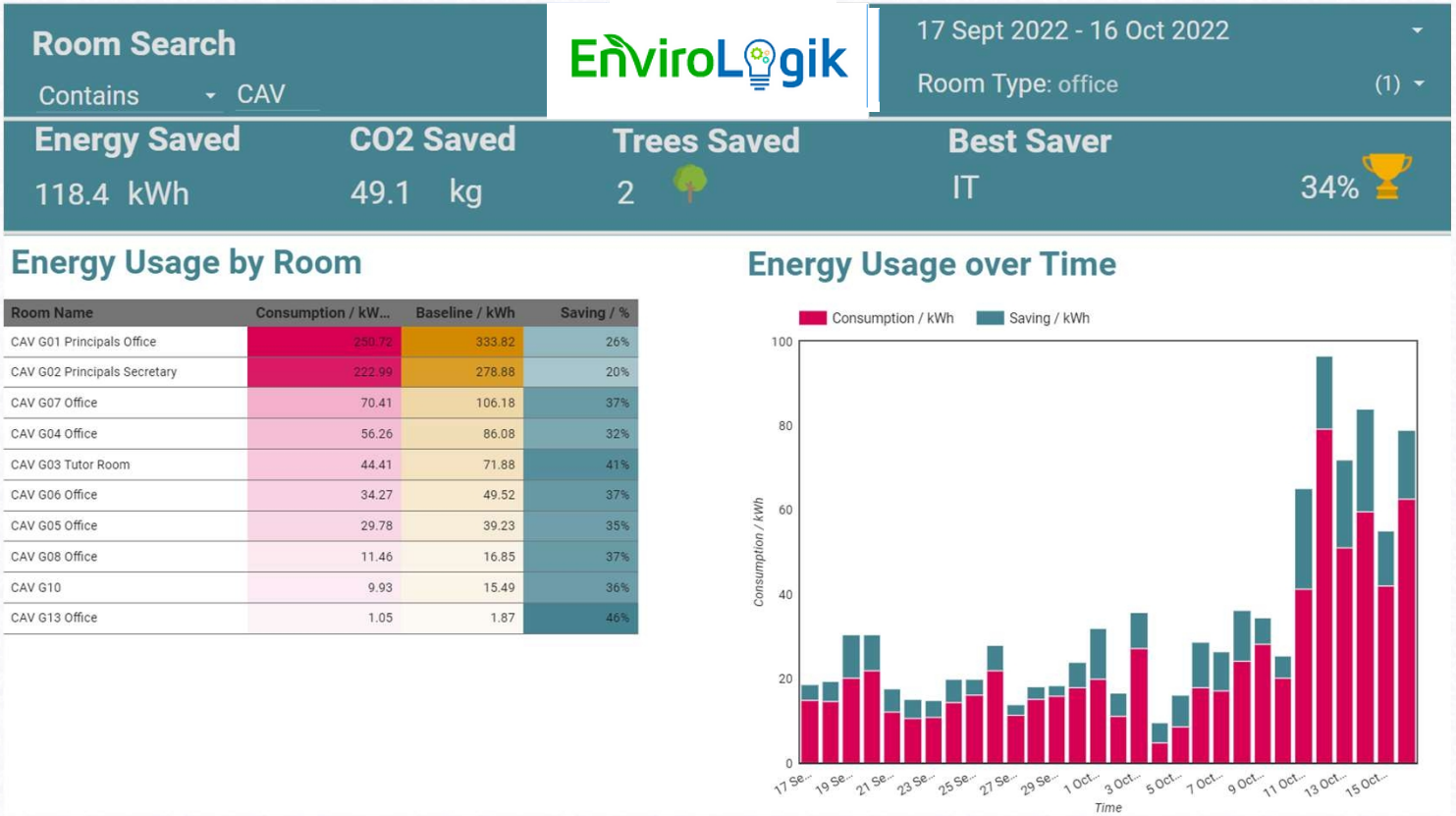
BUILDING MANAGER'S DASHBOARD

- Cloud based so accessible from anywhere, anytime.
- Set schedules, monitor, adjust without having to send someone to room.
- Receive alerts and spot anomalies.
- Identify targeted opportunities for capital efficient building fabric upgrades.



CARBON METER FOR VIRTUAL SUB-METERING, BENCHMARKING OR INTER-DIVISIONAL COMPETITION

- Measure energy consumption and carbon by room or groups of rooms
- Measure savings by room or groups of rooms
- Aggregate data across rooms to create sub virtual sub metering based on actual usage rather than floor area, incentivising behaviour change.
- Feedback savings to occupants via webapp to increase engagement and behaviour change.
- Create benchmarking or competition between teams, buildings, organisations.

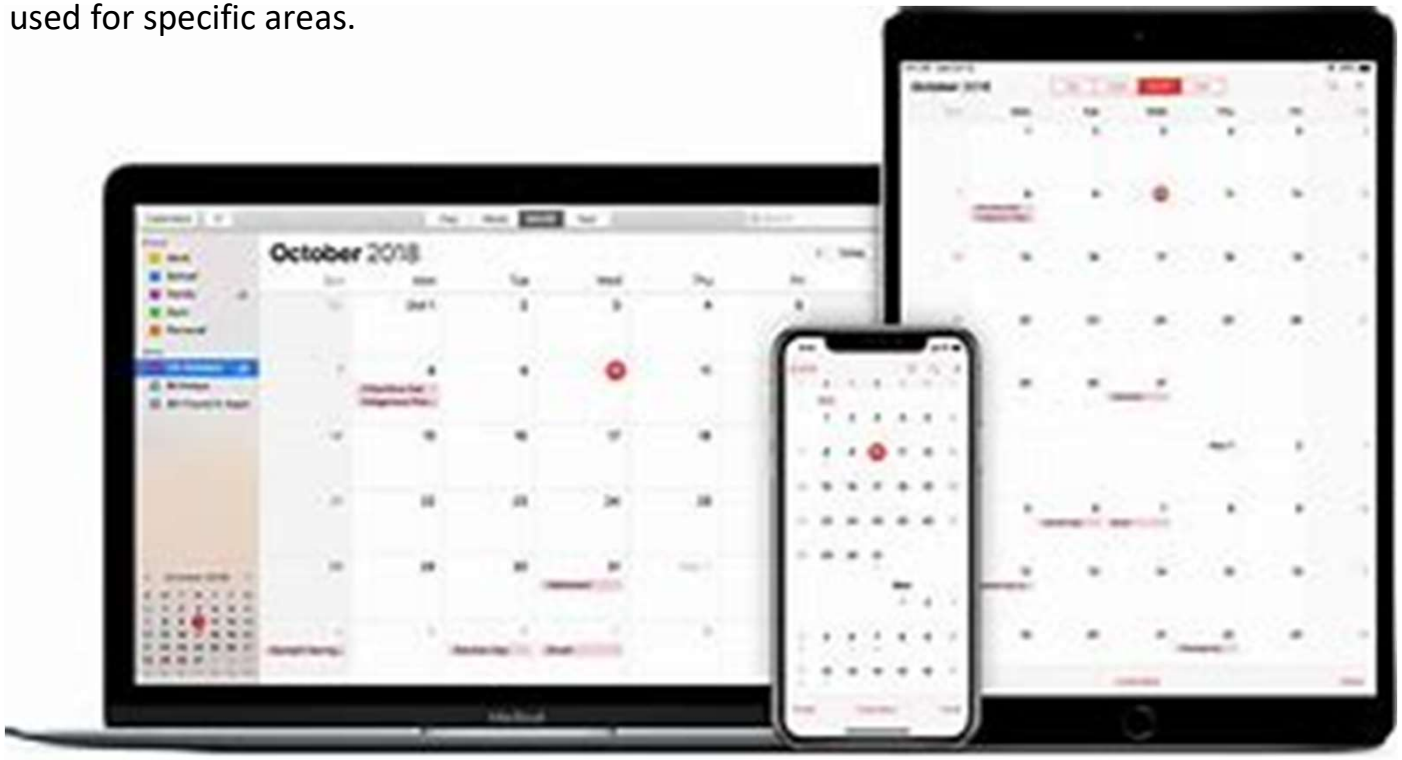


Room Name	Consumption / kW...	Baseline / kWh	Saving / %
CAV G01 Principals Office	250.72	333.82	26%
CAV G02 Principals Secretary	222.99	278.88	20%
CAV G07 Office	70.41	106.18	37%
CAV G04 Office	56.26	86.08	32%
CAV G03 Tutor Room	44.41	71.88	41%
CAV G06 Office	34.27	49.52	37%
CAV G05 Office	29.78	39.23	35%
CAV G08 Office	11.46	16.85	37%
CAV G10	9.93	15.49	36%
CAV G13 Office	1.05	1.87	46%

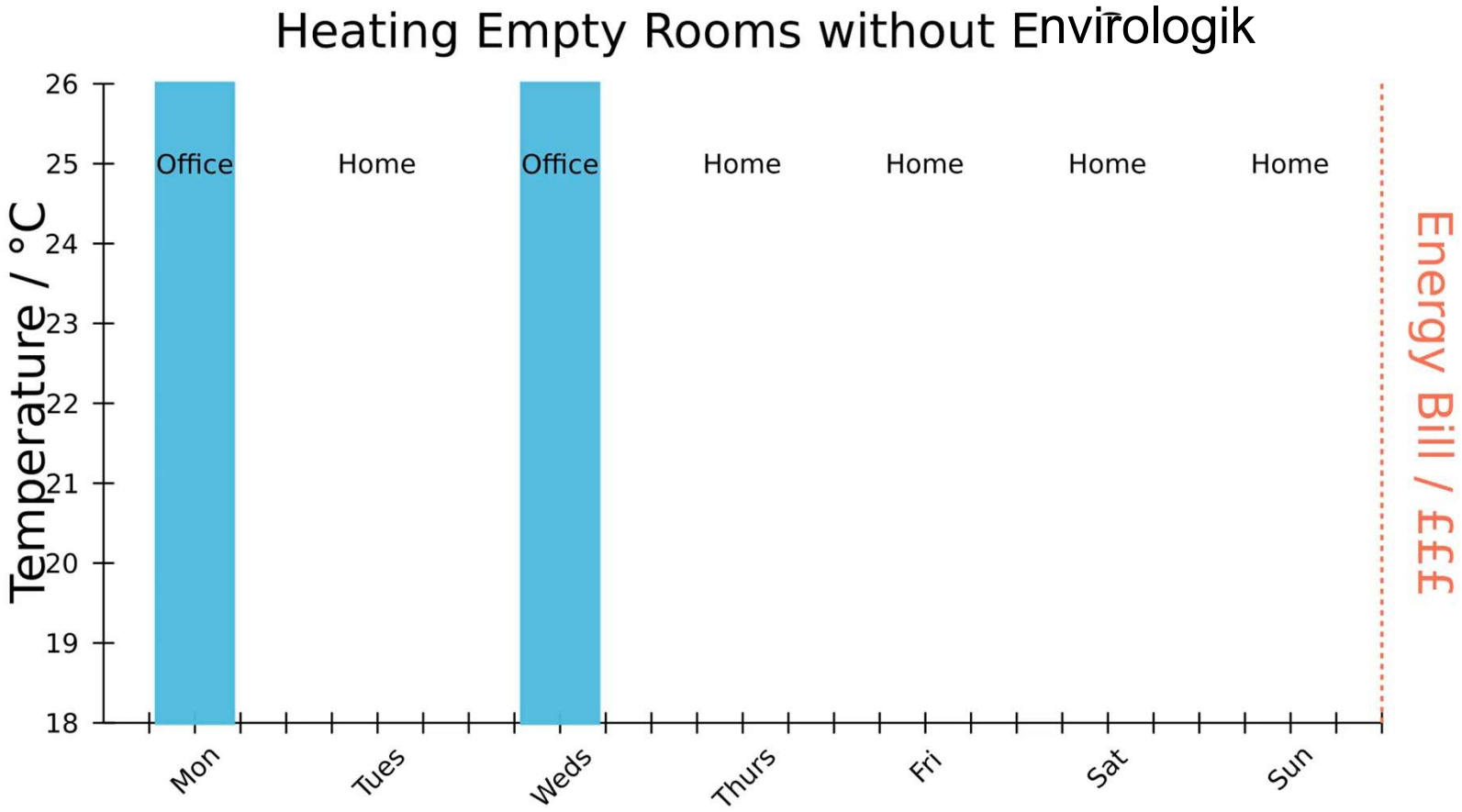
Synchronises With Room Booking Systems or Calendars

Personal or shared calendars can be used for specific areas.

- Short vacant periods can be set to revert to your preferred “set-back” temperature (eg 16-19 degs C)
- Longer vacant periods can be set to your preferred level of freeze protection (eg 10-15 degs C)



Examples


Heating Empty Rooms without Envirologik
Temperature / °C
26
25
24
23
22
21
20
19
18
Office
Home
Office
Home
Home
Home
Home
Mon
Tues
Weds
Thurs
Fri
Sat
Sun
Energy Bill / £££

ADDITIONAL VALUE ADDED FEATURES

Preventive Maintenance

Anti-calcification: 6 weekly valve pin movement

Stuck pin alert

Analytics and Reports

Periodic building "healthcheck" reports

Understand building behaviour

Actionable insights

User Behaviour

Use of AWAY setting

High comfort temperatures

Open windows /
Other heat sources (eg electric fires)

Time Saving

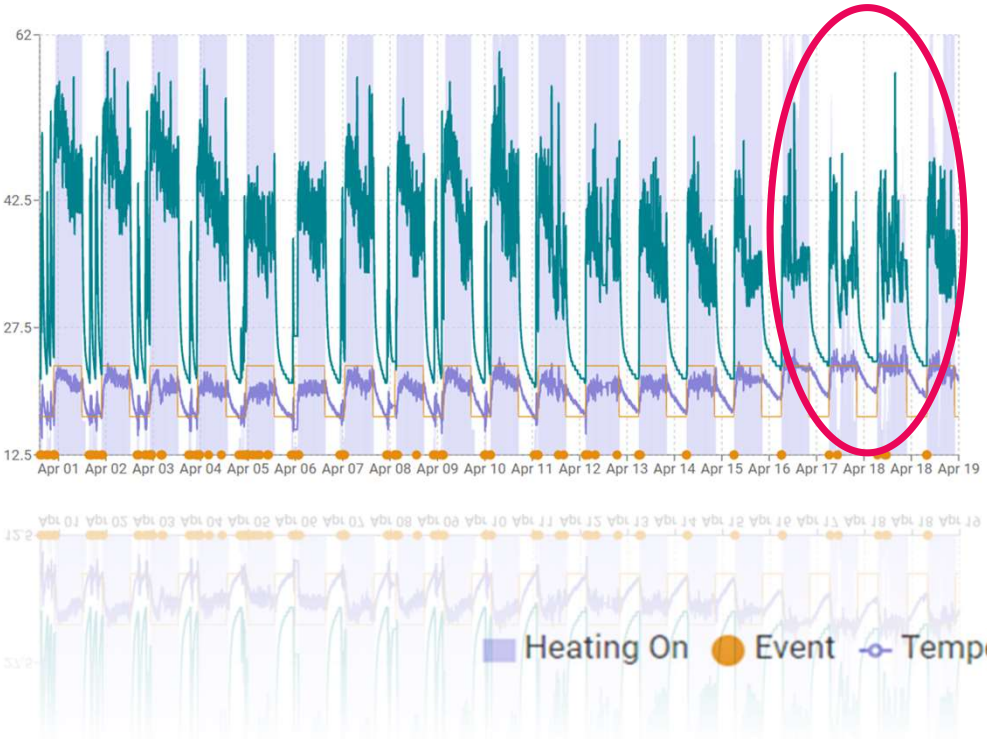
Responding to requests/complaints

Visiting buildings / occupants

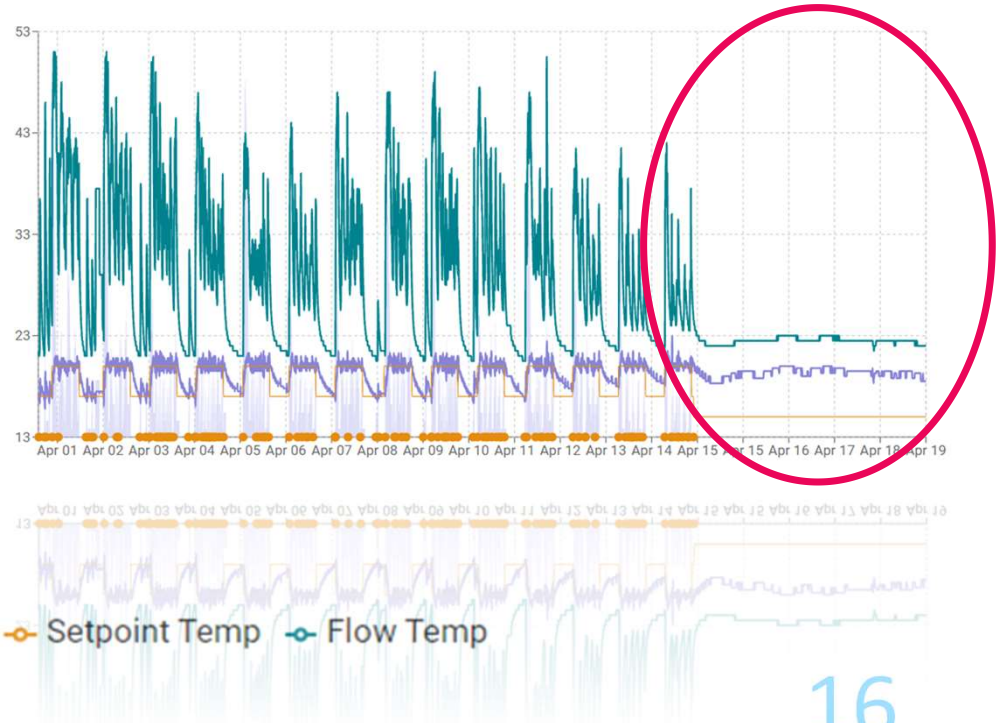
Trying to understand where heating efficiency is poor

Examples

Room 5: Occupied, window open



Room 7: Occupant activating “AWAY” function to save energy



Validated Case Studies

RESULTS:

1. Comparison to EPC energy efficiency measurements validated a 33% saving
2. Comparison of identical buildings, one with and one without EmviroLogik, showed 45% saving
3. Digital Twin baseline was 95% accurate when compared to heat meter data, showing 53% saving

Lady Margaret Hall, Oxford

33%

Corpus Christi College, Oxford

45%

St Peter's College, Oxford

53%

Simple, Quick Implementation

FLEXIBLE TIMELINE, TYPICALLY 1 – 2 WEEKS	ONE HOUR	< ONE DAY
EnviroLogik Team	Remote or F2F	Self-install or supported

Complete All-Inclusive Solution

Fees are all-inclusive and cover the following:

One-off		Licence			
All hardware including:	**Onboarding:**	**Cloud based platform including:**	**User interface including:**	**Integrations:**	**Ongoing support:**
➢ Smart TRVs ➢ Communication "gateway" devices ➢ Magnetic activation tools ➢ Manufacturers' Warranties ➢ Delivery to site ➢ Adapters (if required)[4]	➢ Site audit ➢ Set up and configuration of the platform and Web App ➢ On-site support for first install ➢ 1-click solution for self install ➢ Video tutorials ➢ Live remote support on install day	➢ Dashboard control centre ➢ Carbon meter for energy consumption and savings data ➢ Feature upgrades ➢ Software licensing, security updates, maintenance and hosting ➢ 4G backup SIM connection[4]	➢ QR codes ➢ Web App ➢ Leaderboard ➢ Collateral and communication support for roll-out to building users ➢ Periodic user surveys	➢ Room booking systems[4]	➢ Free unlimited remote support by ○ WhatsApp (1 hr); ○ Email (1 day); ○ Portal (1 day) ➢ Periodic data analytics reports

[4] May be subject to additional fees

EnviroLogik provides..

- High tech but affordable solution
- Advanced room by room control, heat only the rooms in use
- Simple to understand, install and operate
- Helps you to save money, go green & improve manpower efficiency
- You do not have to choose between comfort and energy saving

DO YOU WANT TO STOP HEATING EMPTY ROOMS?

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