INNOVATIVE PRODUCTS FOR BADLY BEHAVING BUILDINGS



Ged Tyrell Founder and CEO


BACK TO THE FUTURE


JP-35-VN








CHRISTMAS


LEICESTER
Tel: 0533 66249
RECISION COMPONENTS FOR INDUSTRY
12V

TBT'S HISTORY OF INNOVATION



1998
Tyrrell Systems Ltd Established as one of the of a handful of systems integrators in the UK

2015
Tyrrell Products Ltd formed to create in-house products and strategic partnerships for supply and distribution

2019
Tyrrell Building Technologies group company to organise for business growth

2019
Acquisition of Simaxx BV data SAAS analytics firm to enhance and complete group capabilities for smart building optimisation.

2020
Halo/Smart-IoT R&D starts on IoT solution to address pressures to reduce energy & carbon dependency

2022
Halo reaches over 350 locations within Net Zero Gov housing projects with success in pubs, care homes and QSRs

2022
Strategic partnership signed with Intel and Red Hat for the BMS and Automation market

2025
Growth investment from River Capital for expansion of the sales and leadership team. Increased technology development

THE WAY WE WORK

tyrrell PRODUCTS

Product R&D, Distribution and Training
for System Integrators

intel vodafone Milesight TRIDIUM niagara4 Red Hat ELSYS.se xWATTS iSMA CONTROLLI



Via Tyrrell Systems
Integration Partners

tyrrell PRODUCTS
PROFESSIONAL SERVICES

For Special Projects
& Technology Testing



HAPPY
CLIENTS

tbt GROUP

tyrrell PRODUCTS

GLOBAL REACH THROUGH PARTNERS

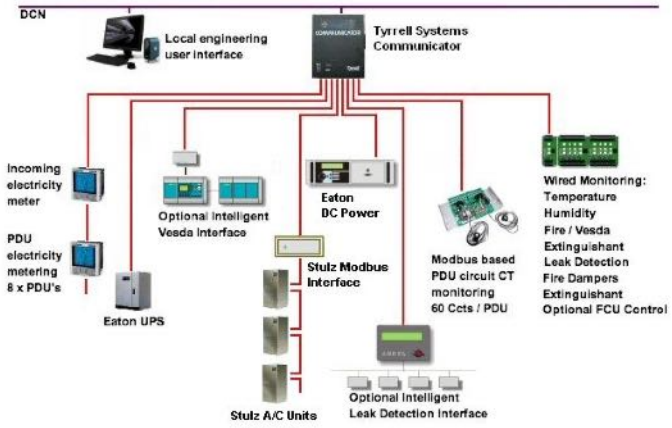
Solving our client problems through strategic regional alliances

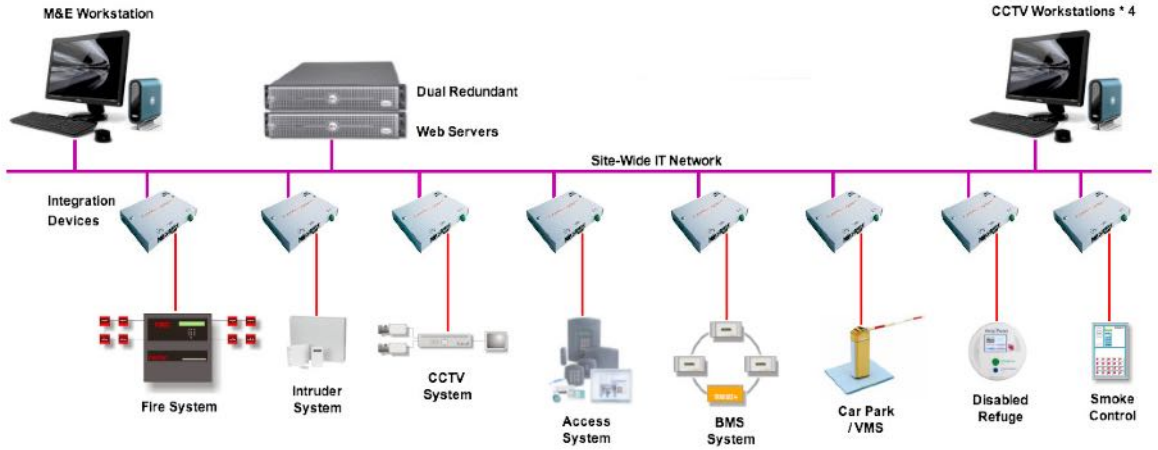


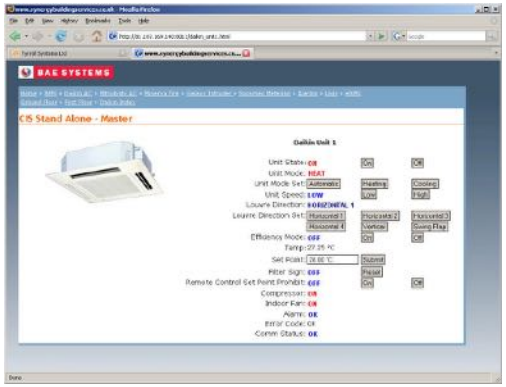
Distributors and System Integration Partners in these regional locations

- United Kingdom
- Qatar
- UAE
- KSA
- India
- Pakistan
- Philippines

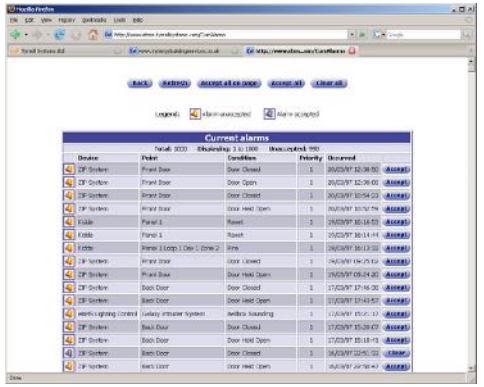
30 YEARS OF INNOVATION













VALUE DRIVEN BUSINESS

- Provide customers with products that help achieve their goals.
- Focus on excellence. The profit is the fruit and not the goal.
- Create a positive and lasting impact on our local community.



Strong values and a successful, profitable business delivers positive outcomes


iNSiGHT

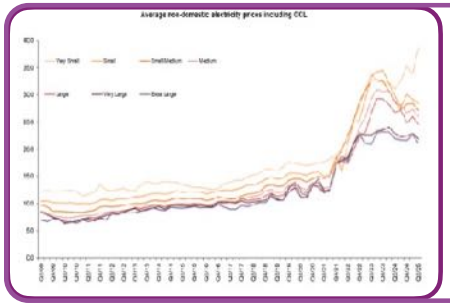
WHAT IS KEEPING PEOPLE UP AT NIGHT?



Complexity and cost of smart building and energy management systems products and installation is continually increasing in all commercial buildings.



All building operations require energy controls, compliance and wellbeing reporting to protect occupants, avoid litigation and reduce taxation



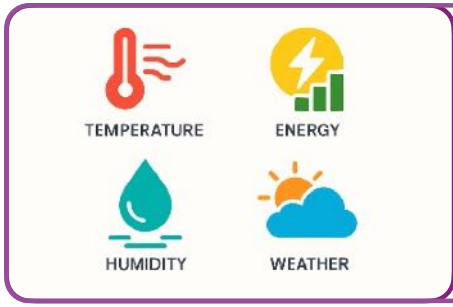
UK energy prices have risen by over 100% in the past decade, driving up costs and hitting profitability all building-related businesses.



Ageing offices becoming stranded assets when the cost of compliance and running costs exceeds the fixed cost rental income for the building.

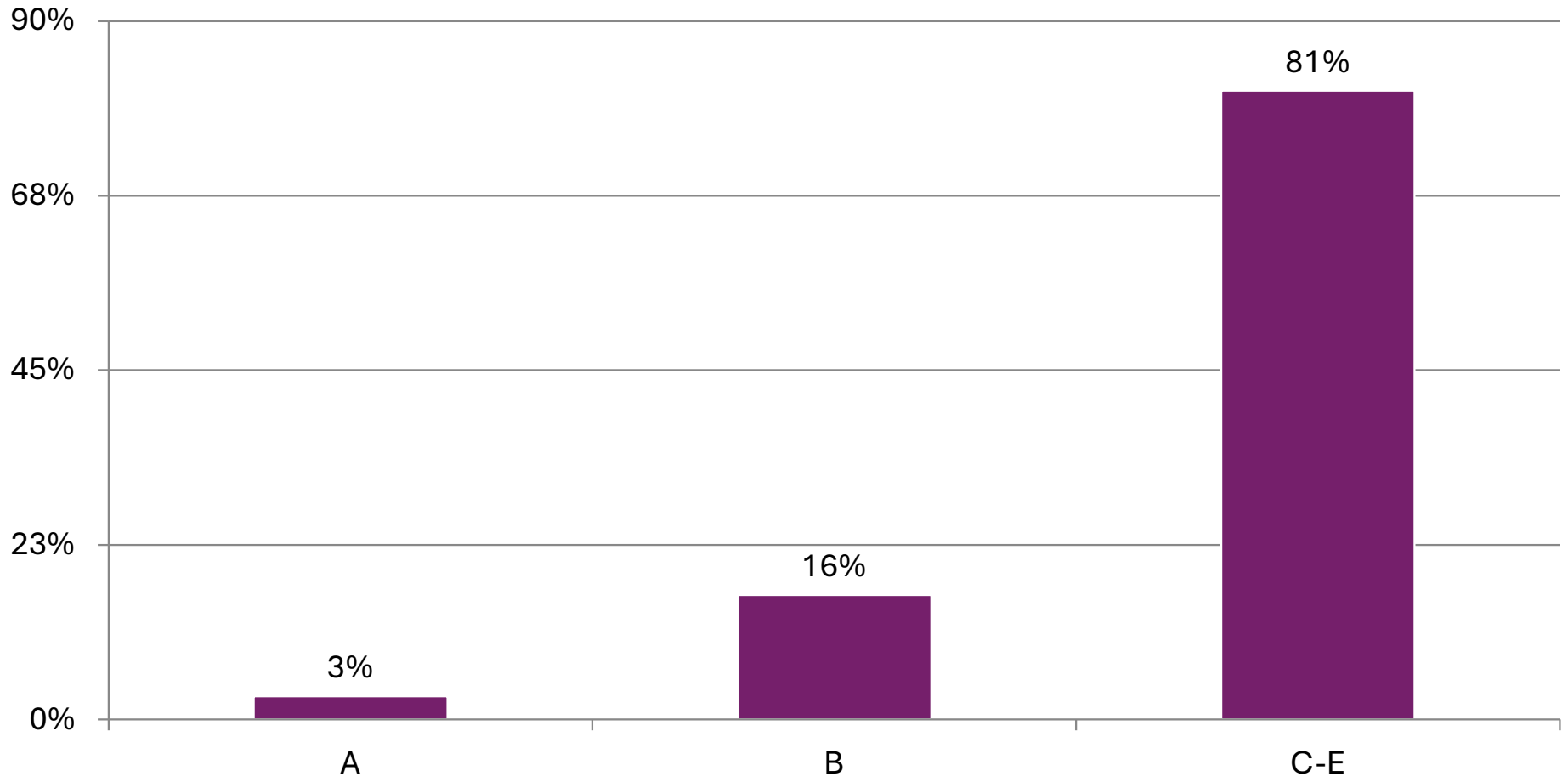


Cybersecurity attacks on operational technology threaten critical infrastructure, causing disruptions, safety risks, and financial losses.



Monitoring energy and environmental conditions is difficult but crucial to create insights into over-spend, over-usage and to demonstrate well-being.

BUILDING PERFORMANCE TODAY




LOWER EMISSIONS BRIGHTER LIVES
NET ZERO
A CLEANER, BRIGHTER TOMORROW
Taking action today for a healthier, more resilient and more prosperous tomorrow.
Healthy People
Thriving Places
A Stronger Future
BETTER WELL-BEING
Cleaner air, greener spaces and healthier buildings lead to happier, healthier people.
A healthier planet supports healthier lives.
ENERGY SAVINGS
Using less energy means lower costs, greater efficiency and more resources to invest in what matters.
Save energy.
Create opportunity.
GREATER POWER RESILIENCE
A cleaner, more diverse energy system is stronger, more reliable and better prepared for the future.
A more resilient tomorrow keeps people and communities safe.
TALENT RETENTION
People want to work for organisations that make a difference. Net zero attracts and keeps top talent.
A purpose-driven workplace builds brighter futures.
CLEANER AIR
STRONGER COMMUNITIES
GREEN JOBS
BRIGHTER FUTURES
Net Zero
Creates a
Brighter Tomorrow
PEOPLE
PLANET
PROGRESS
People
Planet
Progress
SUSTAINABLE
PEOPLE
STRONGER
TOGETHER
HEALTHIER PEOPLE | LOWER COSTS | STRONGER COMMUNITIES | BRIGHTER FUTURES
Net Zero Works.


WHAT WE HAVE
ACHIEVED SO FAR

INSIGHTS | ENERGY SAVINGS | WELL-BEING

Garden Centre Project
40% Energy Saving



Blenheim Palace
49% Energy Saving



INSIGHTS | ENERGY SAVINGS | WELL-BEING

NHS Trust Electricity Metering
Rapid Install, No Down-time



Hotel Ventilation Upgrade
Continuous IAQ Reporting



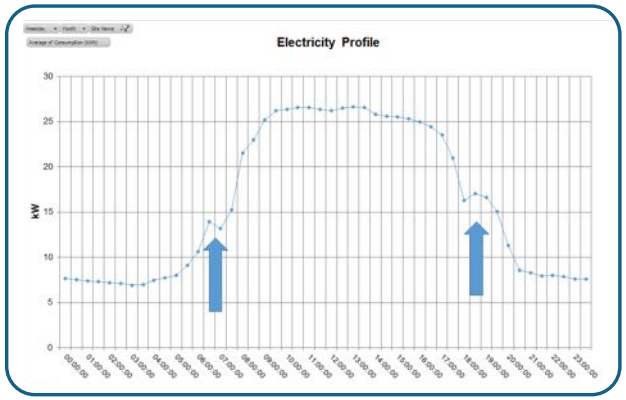
HOW DID WE DO IT (FORGIVE THE GEEKY BITS!)



WHAT IS THE RETURN ON INVESTMENT



What are they spending on energy?



Where are the areas for savings?

Total savings over ROI period
-
Project Costs (£15k-£25k)
=
Go or No Go



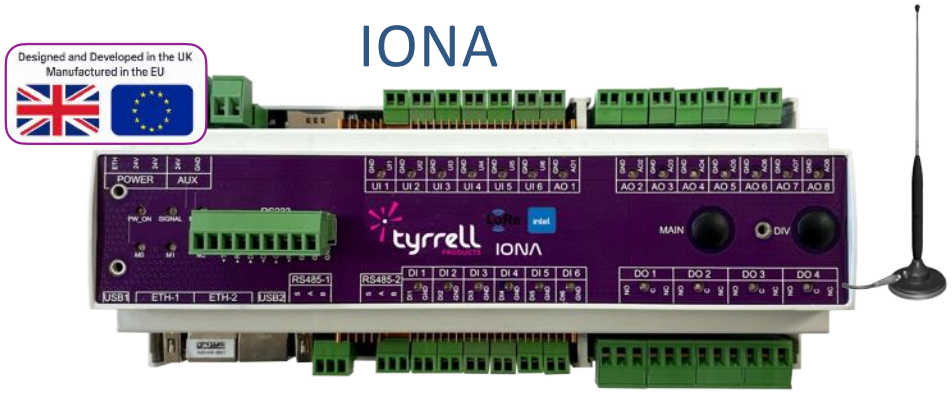
What are the indirect costs to business?



Where are the legislative costs?

THE IONA ENTERPRISE CONTROLLER

The IONA controller has best-in-class performance, capability, reliability. IONA supports containerised applications for our OEM and platform partners.
Custom connectivity driver development reduces implementation time and improves reliability.



Unrivalled Capability with intel

- Elkhart Lake Fanless Dual core 1.3 GHz
- 4GB DDR RAM
- 16GB eMMC

Economical Performance with arm

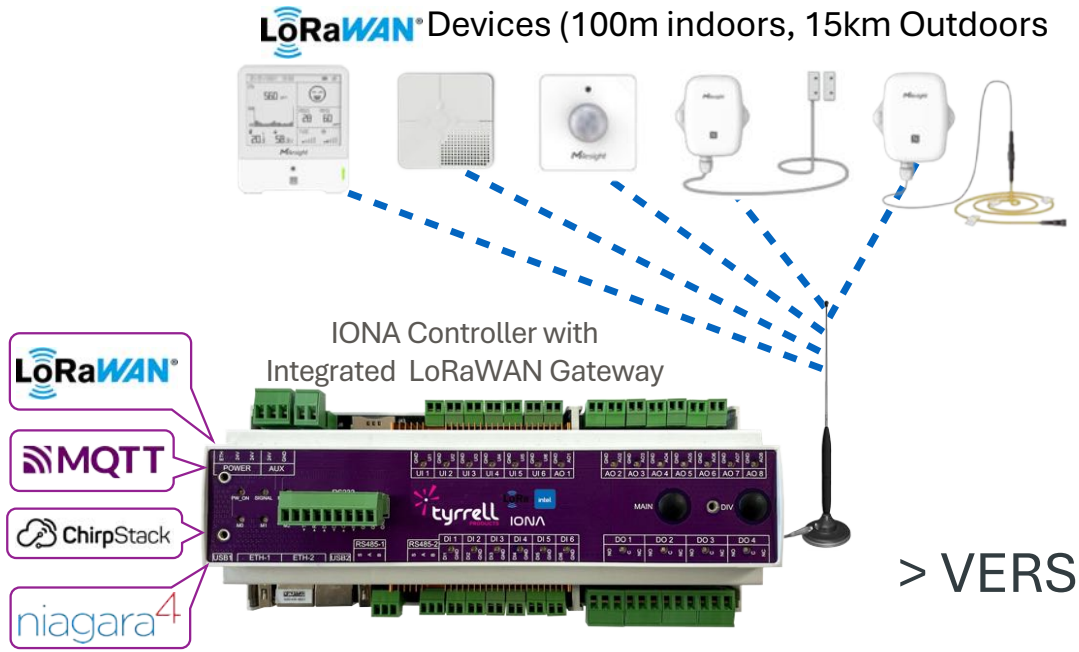
- Quad Core Cortex Fanless 1.5 GHz
- 2GB DDR RAM
- 8GB eMMC

Fully Featured Expandable Hardware

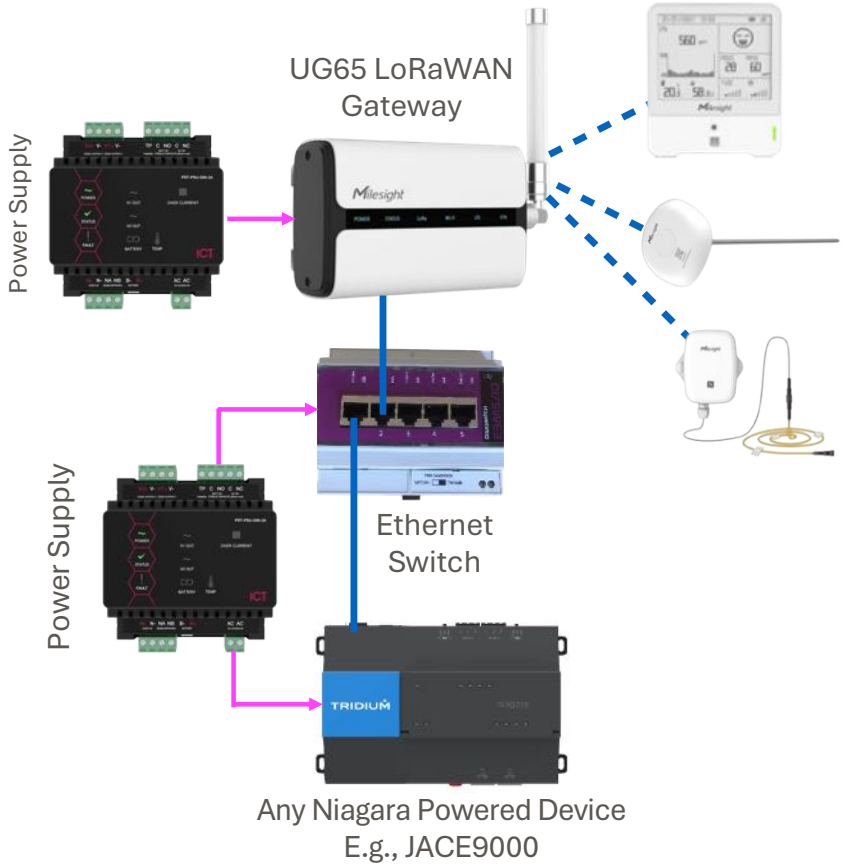
- 8 x Universal Outputs
- 4 x 230VAC 2Amp Relay Outputs
- 6 x Universal Inputs and 6 x Digital Inputs
- 2 x Ethernet Ports
- 2 x USB3.0 Ports
- 2 x RS485 Ports
- 1 x Side RS485 IO Module Connector
- 1 x RS232 Port
- OPTIONAL LoRaWAN Hardware Gateway
- OPTIONAL 4G/LTE Cellular Card

IOT connectivity and communications capability as standard: LoRaWAN ChirpStack MQTT niagara4

EMBEDDED LORAWAN VS GATEWAY



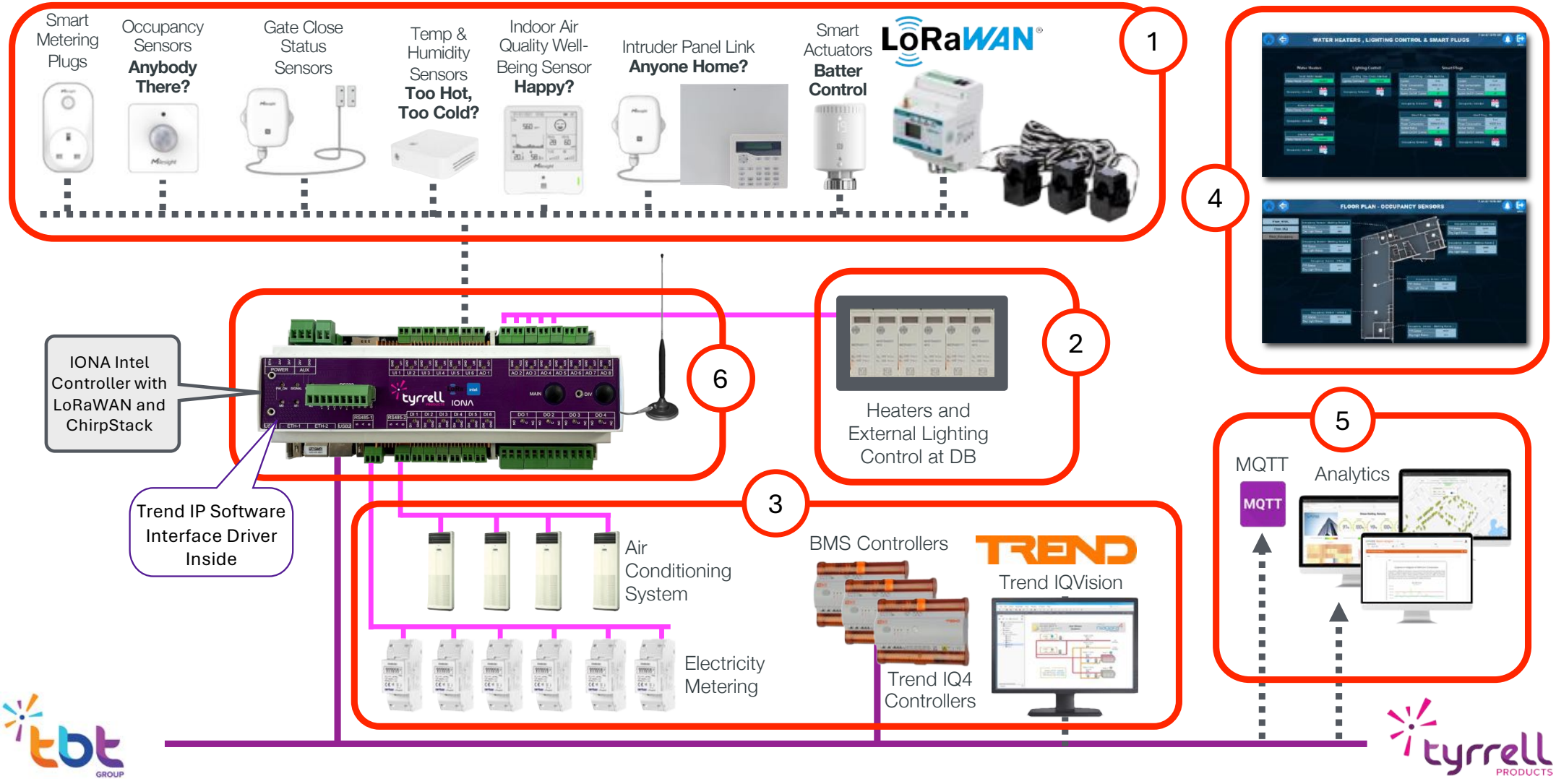
> VERSUS >



- Fewer power supplies and panel space
- Fully managed in Niagara 4
- No additional Ethernet Switch or cables
- Rapid LoRaWAN Device Discovery**
- Device vendor agnostic via ChirpStack
- Site-Wide ChirpStack infrastructure

IONA makes LoRaWAN Integration faster, less expensive and more reliable

BLENHEIM INTEGRATED IOT SOLUTION



METERING OPTIONS WITH IONA

Energy insights for the lowest possible costs with LoRaWAN® and IONA

LOW COST, SPEEDY INSTALL, NO POPWER DOWN AND IDEAL FOR FINDING ENERGY WASTAGE

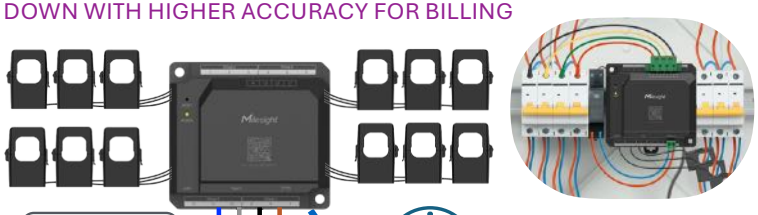
Self-Powered Current Modules

30-60 minute installation per meter/board

Smart Metering Plug Voltage Reference for kWH calculations inside IONA

15km Open Field
100m-300m indoors

MEDIUM COST, SPEEDY INSTALL, NO POPWER DOWN WITH HIGHER ACCURACY FOR BILLING



No separate breaker required!

Magnetic voltage reference cables

90-120 minute installation per distribution board

HIGHER INSTALLATION COST, HIGHEST ACCURACY, MID APPROVED FOR BILLING



2 - 4 Hours installation per meter with likely power down

LoRaWAN

** Downtime typically required



Modbus

Modbus RTU Intelligent Metering Via LoRaWAN

LoRaWAN

3 - 4 Hours installation per Distribution board

Data to Third Party Services



LoRaWAN

MQTT

ChirpStack

niagara4

IONA Controller Powered by intel



Intelligent Metering Directly connected



Modbus

Analytics

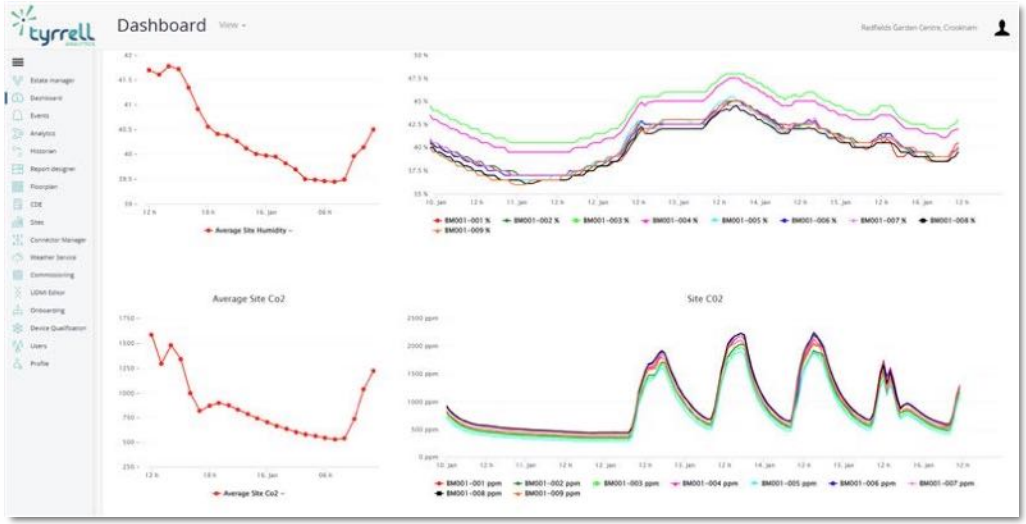


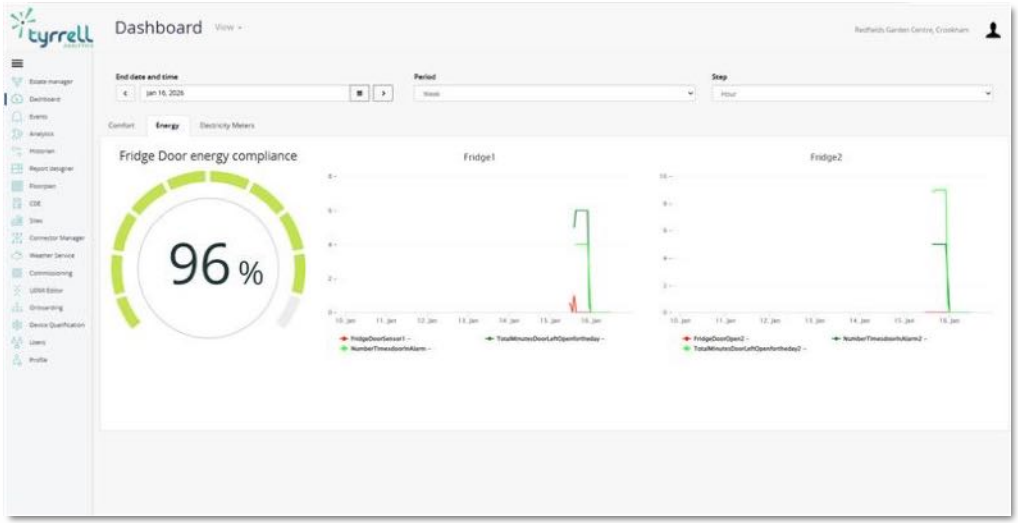
tbt GROUP

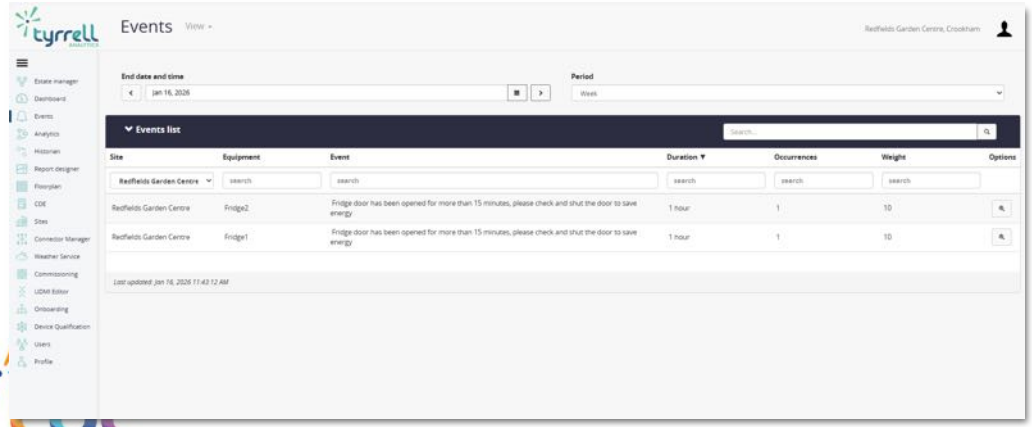
tyrrell PRODUCTS

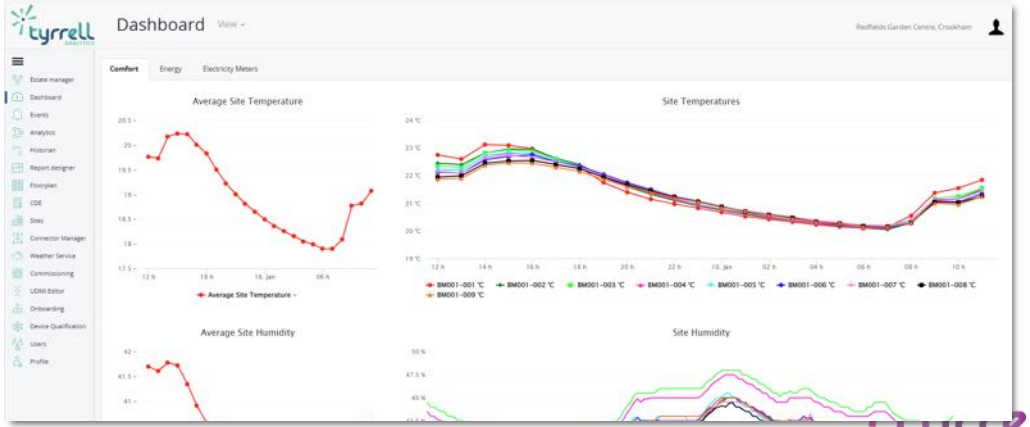
ANALYSE THE DATA > INSIGHTS AND REPORTING

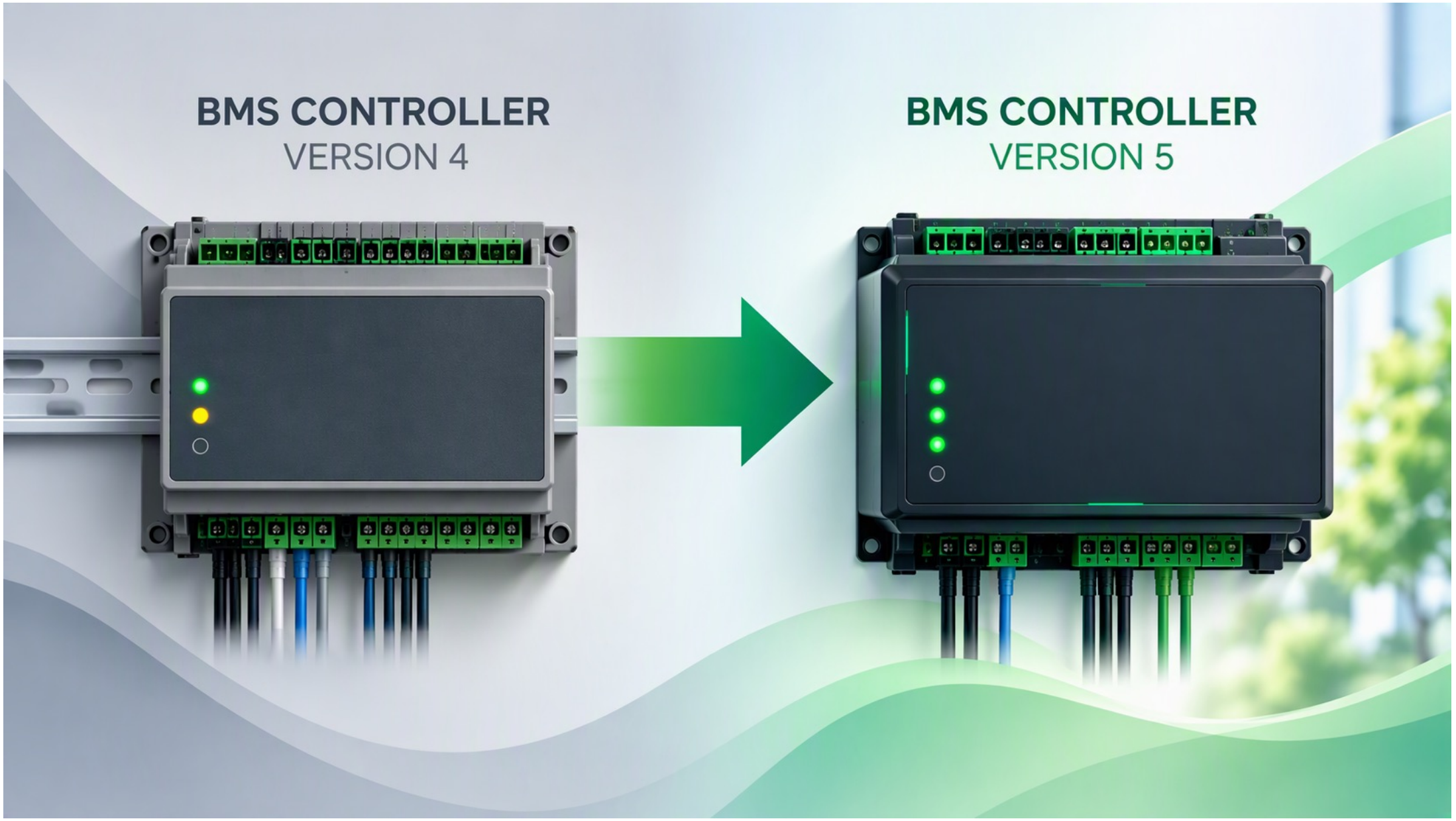
Analytics Dashboards - Performance, KPI dashboards and data driven insights










BMS CONTROLLER
VERSION 4
BMS CONTROLLER
VERSION 5


DATA IS GOLD
POWERING SMART BUILDINGS
FOR A BRIGHTER TOMORROW
AI
PREDICT
OPTIMISE
AUTOMATE
ADAPT
ENERGY EFFICIENCY
HEALTHIER OCCUPANTS
LOWER CARBON
HIGHER ASSET VALUE
INSIGHTS
EFFICIENCY
OCCUPANT WELLBEING
OPTIMISATION
LOWER EMISSIONS
HIGHER VALUE
DATA
UNLOCKS POTENTIAL
REAL-TIME DATA
REAL IMPACT
SMART CONTROLS
PREDICTIVE MAINTENANCE
OPTIMISED PERFORMANCE
SUSTAINABLE OPERATIONS


Outdated Dashboards
AI-Powered Insights
Last Year
This Month
Update Reports!
How did NPS compare to last year?
Here's the trend.
Why did it drop?
Top issue: "Crowds" & "High Prices."
What should we do?
Live Data
Pulling Old Reports
Dynamic Q&A

How can AI be used in smart building enablement?

tyrrell PRODUCTS

- Predict & optimise performance
- Intelligent energy management
- Predictive maintenance
- Enhanced safety & security
- Sustainability & emissions reduction
- Personalised occupant experience

AI



AI turns building data into intelligent actions for smarter, safer, more sustainable buildings.

BUILDING SYSTEMS & CONTROLLERS

TREND CONTROLLER
Data logging & analysis



TRIDIUM JACE
Building automation & integration



HONEYWELL HAWK
Plant control & optimisation



DISTECH CONTROLLER
HVAC control & management



ORGANISED DATA FROM SEMANTIC MODELS

Project Haystack
An open standard for building metadata.

Brick Schema
A unified data model for built environment.

UDMI
Standardised data model for device interoperability.

BDNS
Real estate data model for digital twins.

Digital Buildings Ontology
Linked data for the built environment.

tyrrell PRODUCTS


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}
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BETTER INSIGHTS
Unified data for smarter decisions.

GREATER EFFICIENCY
Interoperable data reduces complexity.

SEAMLESS INTEGRATION
Standards connect systems across the ecosystem.

SUSTAINABLE FUTURE
Better data for more efficient buildings.

Interactive Relationship Graph

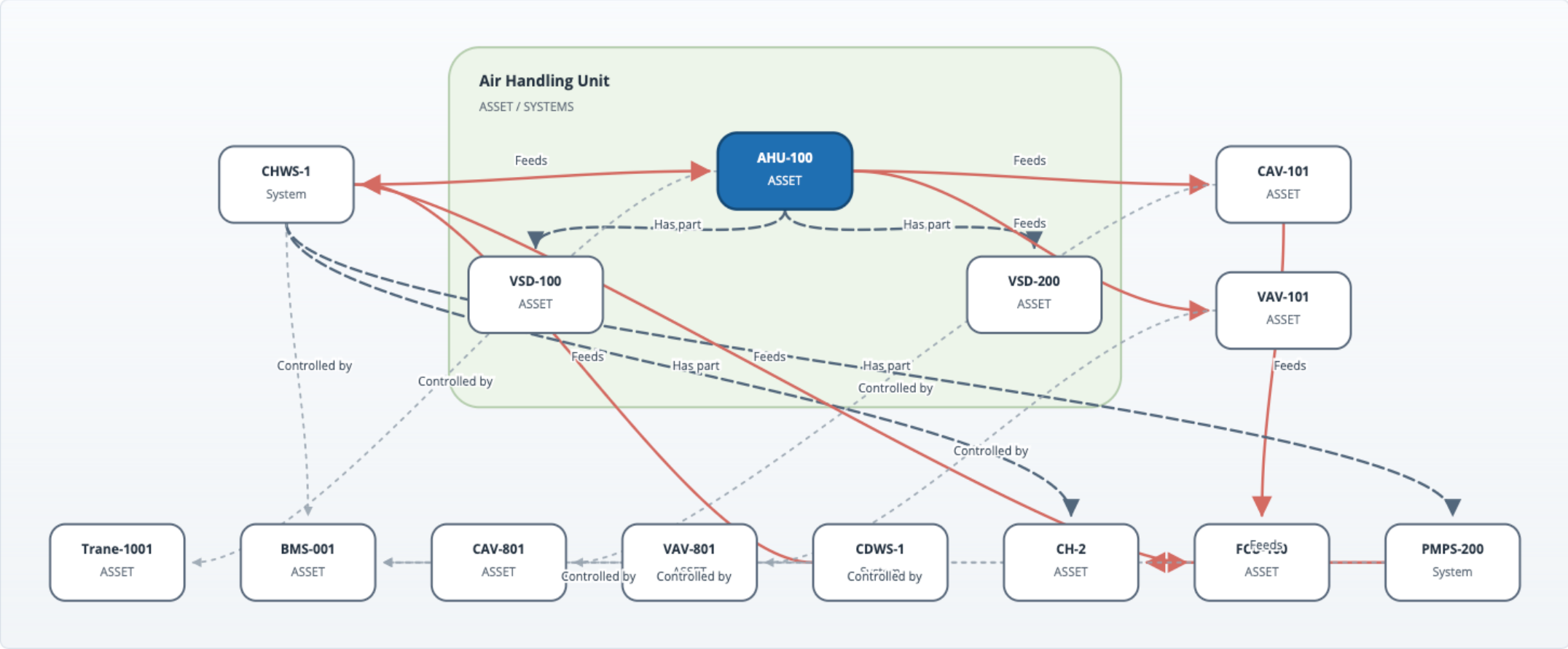
Click a node to recenter the graph on that asset and continue tracing outward.

- | + | Fit All | ← | ↑ | ↓ | → | 100%

Showing 14 nodes around 'AHU-100'.

Structured view centered on the selected asset. HAS PART takes precedence over CONTAINED IN when the focus tree is built, while LOCATION stays as contextual graph data instead of changing the focus tree. The table below keeps all relationship data in one place.

Selected Asset | Asset | Has Part / Contained In | Feeds / Fed By / Load Fed By | Controlled By | Location




"YOUR FUTURE IS CREATED BY WHAT
YOU DO { TODAY }
NOT TOMORROW"

TYRRELL BUILDING TECHNOLOGIES



SCAN HERE FOR THIS PRESENTATION

Thank You

We appreciate your time and attention and welcome any questions.

Ged Tyrrell

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m: 07779712538

tbt GROUP

Smart building products for badly behaving buildings

tyrrell PRODUCTS