

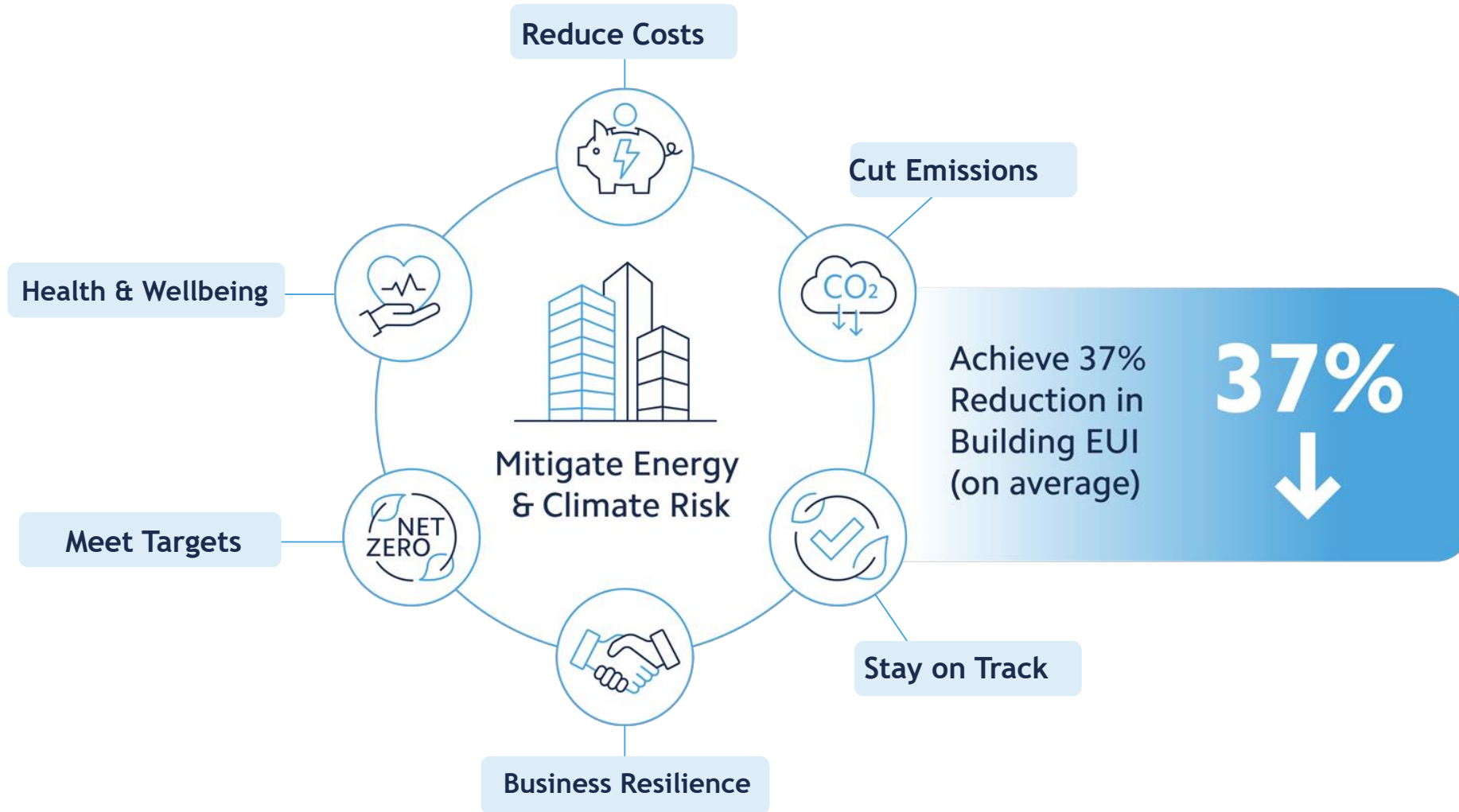


IES LIVE

Keep your Finger on the Pulse of Your Building's Operational Performance



Why Focus on Building Operation?



Technology Trusted by Organisations Worldwide

JOHN LEWIS
& PARTNERS

NHS
SCOTLAND

 **TOYOTA**

Walmart 

CBRE

AIRBUS

University
of Glasgow



ARUP


Building and Construction Authority

About IES

Home to the largest building analytics team in the world



30 Years
of Building Analysis
Experience



Global team with
local knowledge



Energy, Carbon,
Cost, Wellness,
Water, Mobility



15,000+
Software Users



3,000 +
Consulting Projects
delivered by our experts



65+ R&D Projects
with 600+ partners
from 30 countries



Owner of the
world-leading building
simulation engine
APACHE



Only company to
integrate physics-
based building
simulation into
Digital Twins



Complete
cradle-to-grave
net-zero building
management



300+
Employees in
8 Offices | **17** Countries



1,000,000
Buildings Modelled using
IES's Technology

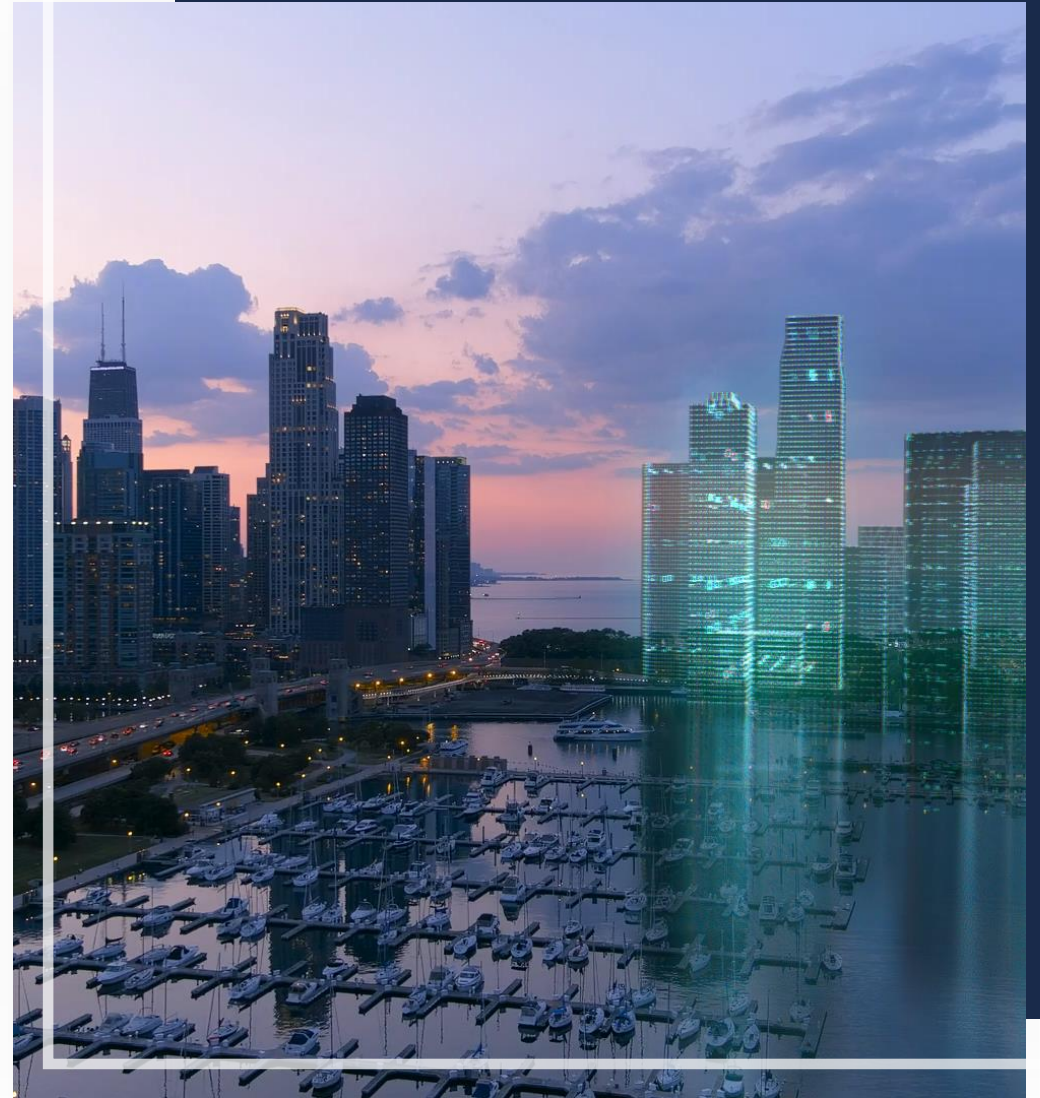


75,000+
Projects per year using
IES's Technology

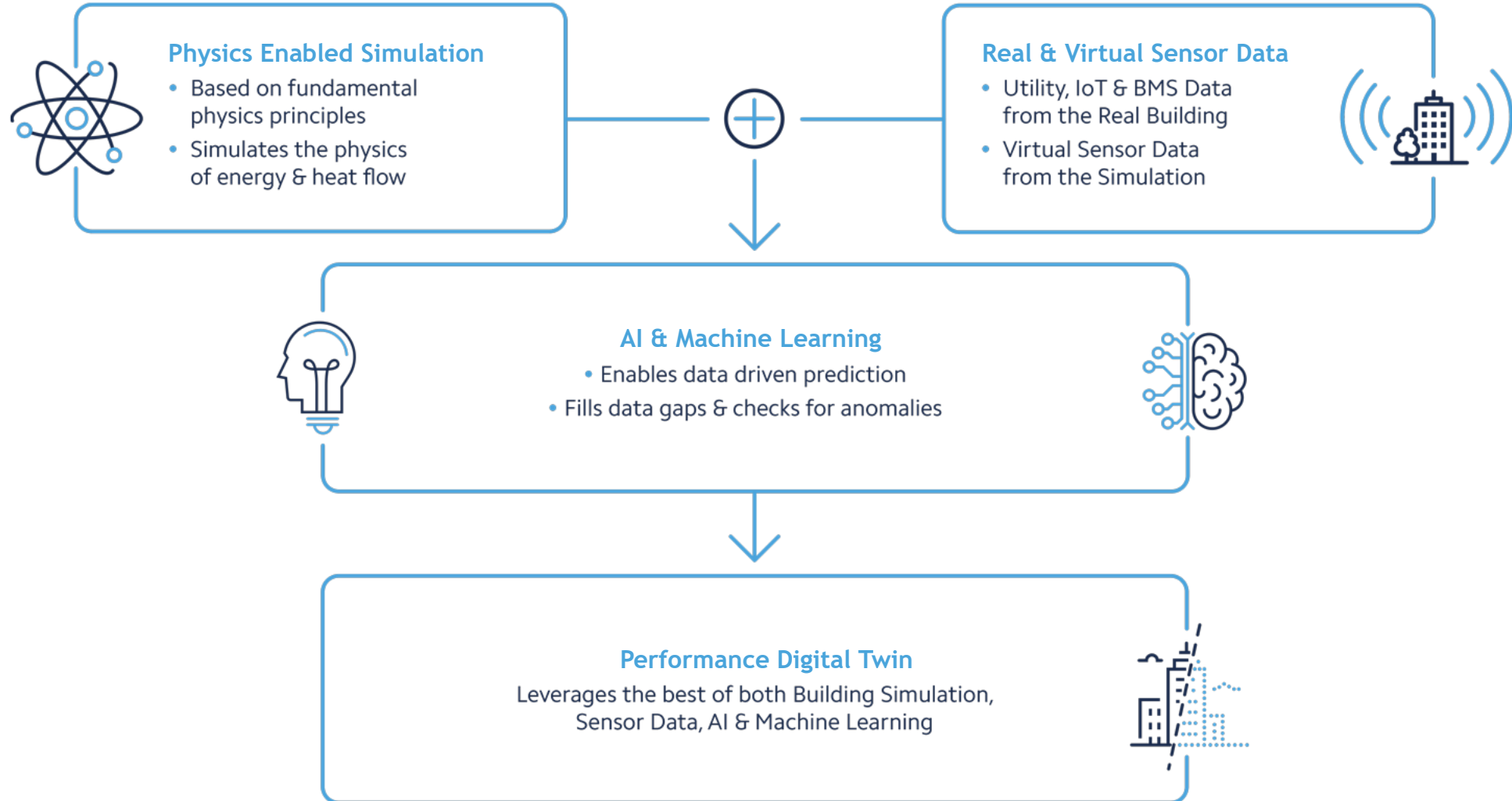


IES Digital Twin

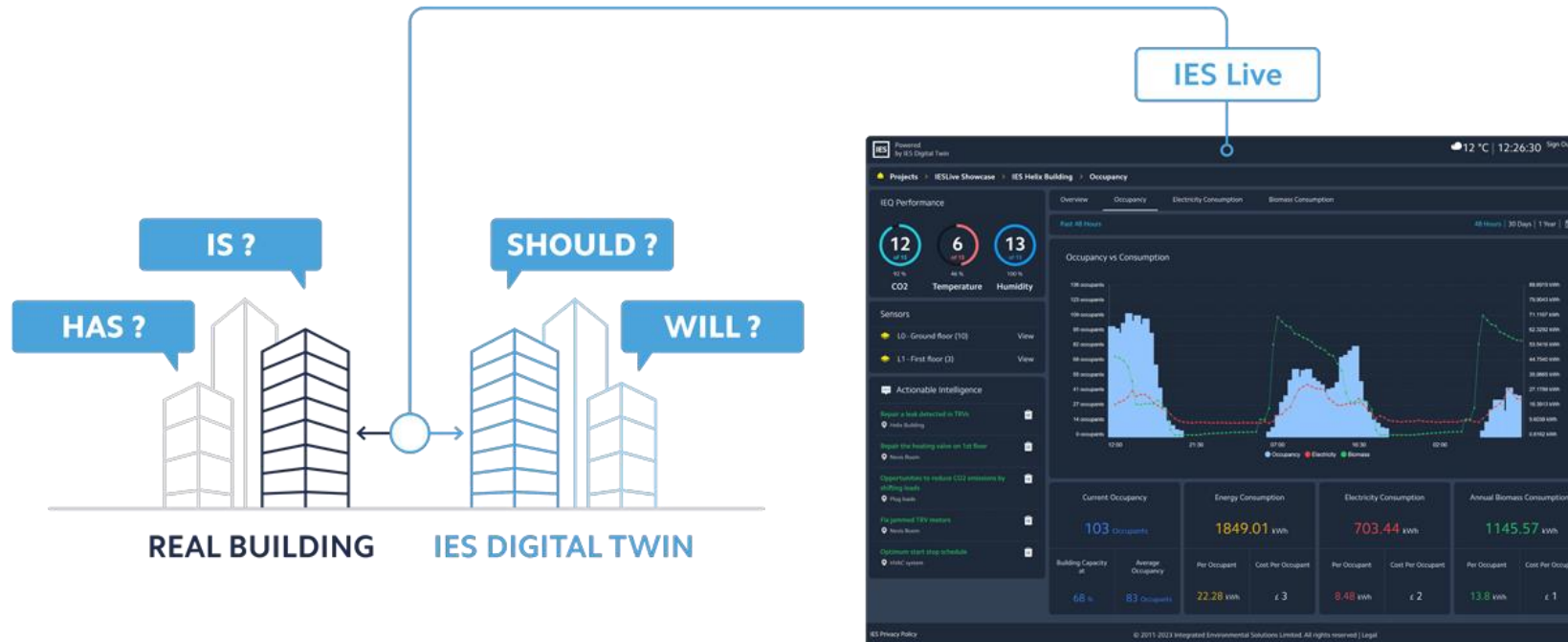
- Buildings are complex, dynamic systems
- The IES Performance Digital Twin
 - Includes energy simulation
 - Not just Digital Twin of BIM assets
 - Real-time digital replica
 - Responds & behaves like the real building
 - Physical and functional characteristics
 - Predicts impact of changes



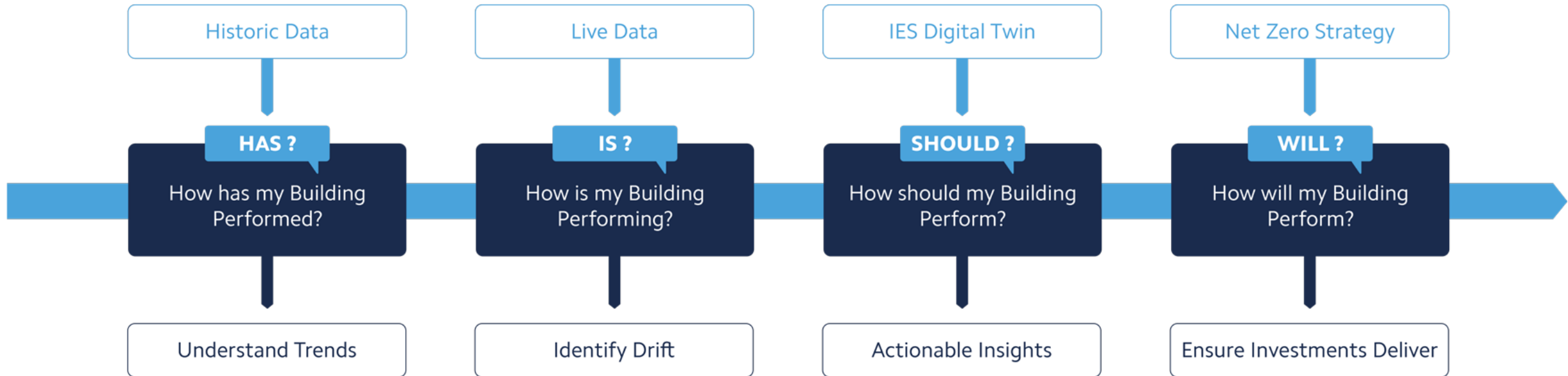
The Best of Physics, Data and AI/ML



IES Live: Unlock the Full Potential of your Building Data



IES Live: Keep your Finger on the Pulse of Operational Performance



Energy Management

- Achieve energy standards promised at design
- Identify performance drift
- Understand energy impact of comfort settings
- Save energy from layout changes
- Stop HVAC performance degradation
- Identify savings linked to fixing broken or faulty equipment
- Track savings from improvement projects
- Utilise - not waste - design energy models



Data vs Actionable Information

- Collate data from all types/ages of systems
- Utility meters, BMS, IOT
- Right information at the right time
- Trusted information
- Effective decision making
- Encourage behaviour change
- Improve feedback loops



IES Live: Keep your Finger on the Pulse of Operational Performance



Energy & Carbon
Reduction



Healthy &
Comfortable Spaces



Simulated Energy
Benchmark



Actionable
Insights



Single Pane Data
View



Net-Zero
Investment Tracking

Project Impacts: Energy & Cost Savings

- BMS optimisation of existing building:
 - 33% reduction in heat energy
 - 7% reduction in electricity use
 - £50k-£100k annual savings
- New building performance gap reduction
 - Using 20-50% more energy in operation
 - Against IES Digital Twin benchmark





Project Impacts: Energy & Cost Savings

Net-Zero Investment Tracking

- HVAC Refurbishment
- Verified savings of
 - 23% reduction in energy
 - £26.7k cost savings

Project Impacts: Comfort & Wellbeing

- Reduce comfort complaints
- Better indoor air quality
- Improved ventilation
- 8-11% increase in employee productivity
- Saves \$7,500/person/year in productivity
- Positive impact on turnover & profit



IES Live: Features

Energy & Carbon performance

- EUI, kWh, Cost, tCO₂e

Actionable Intelligence

- Impact of improvements
- Energy, cost & carbon savings

Net-Zero Investment Performance

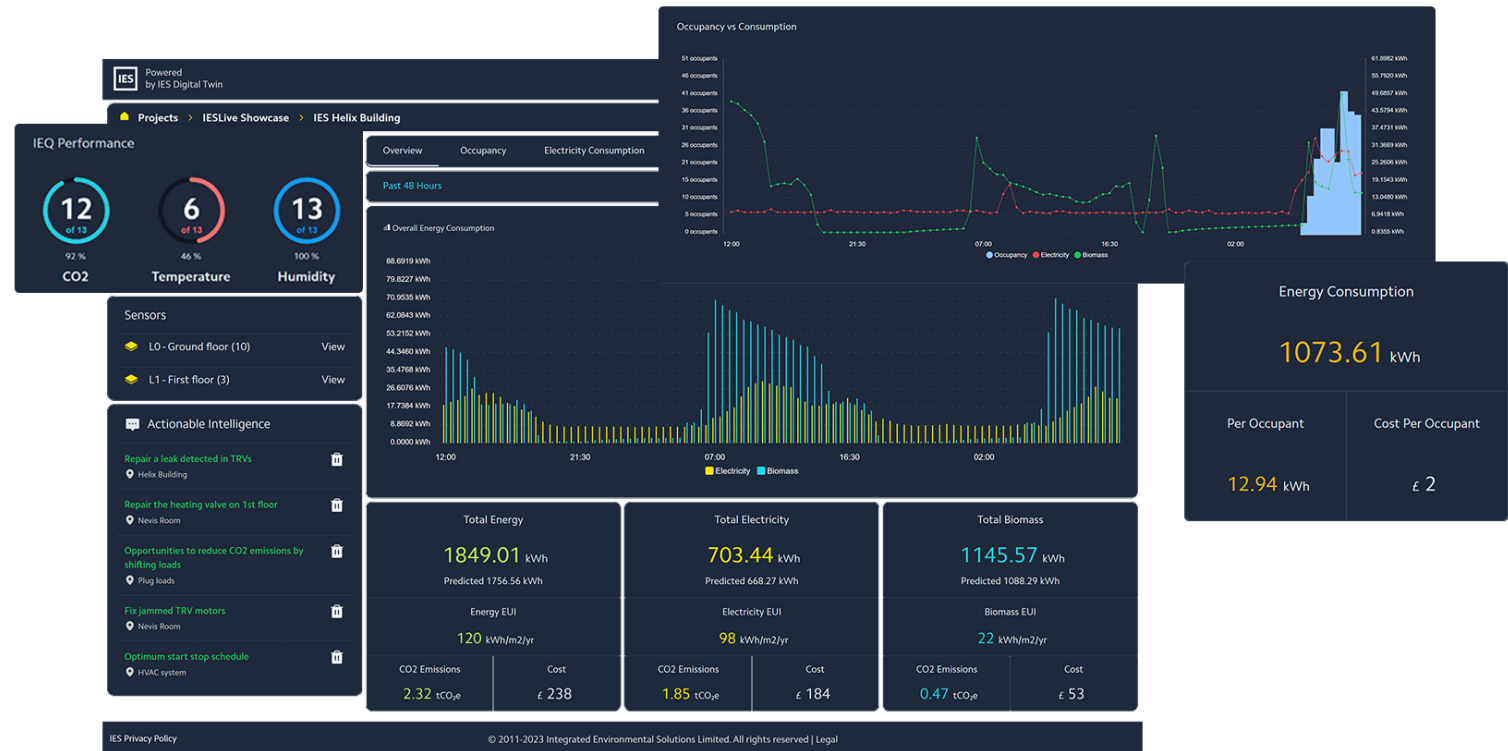
- Verify energy, cost, carbon savings

Energy tracked against Occupancy

- Use/Cost per Occupant

Indoor Air Quality (IEQ) tracking

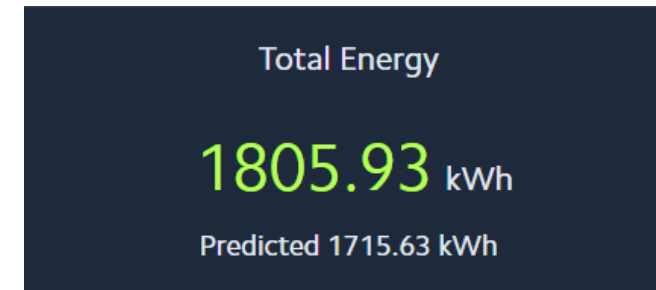
- CO₂, temperature, humidity





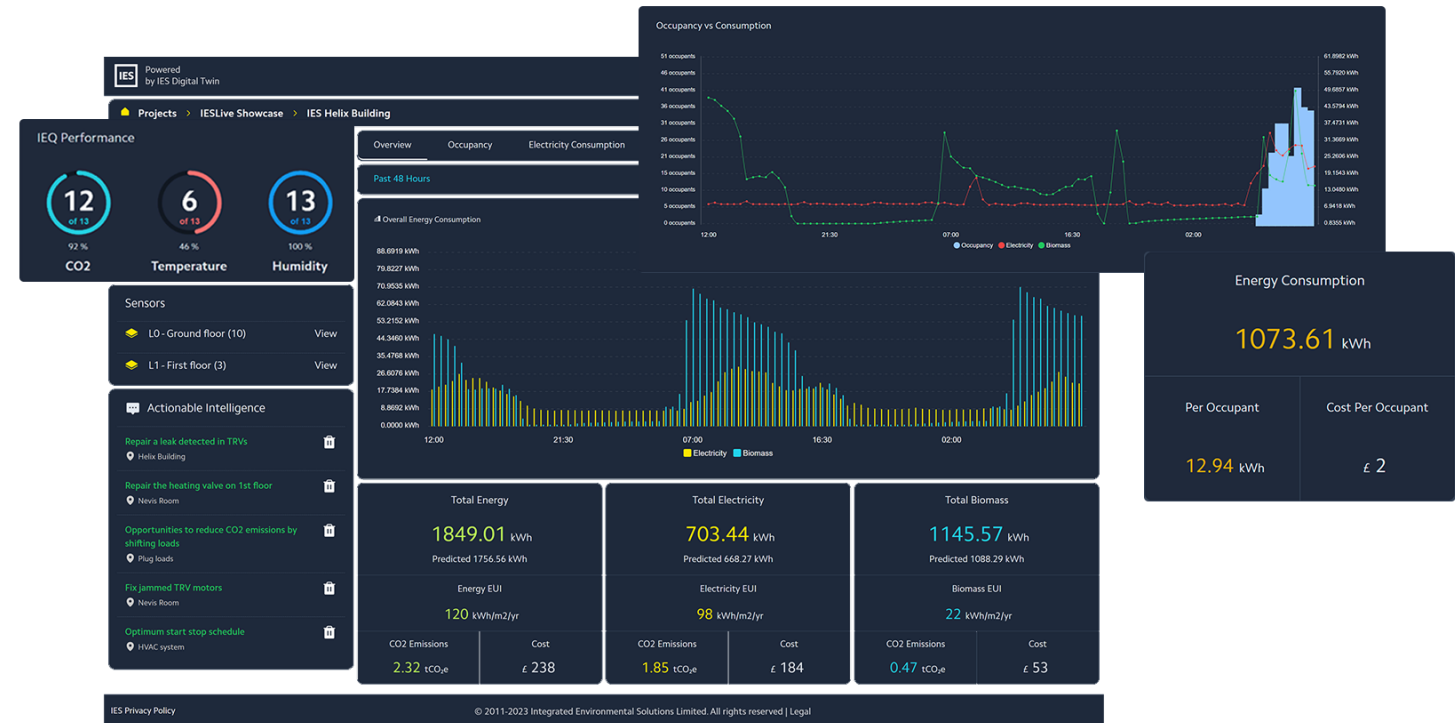
IES Live: Powered by the IES Digital Twin

- Actual vs IES Digital Twin
- Energy Benchmark specific to building
- Rich data model
- Dynamic energy simulation
- How building should be operating
- Calibrated to match actual building operation



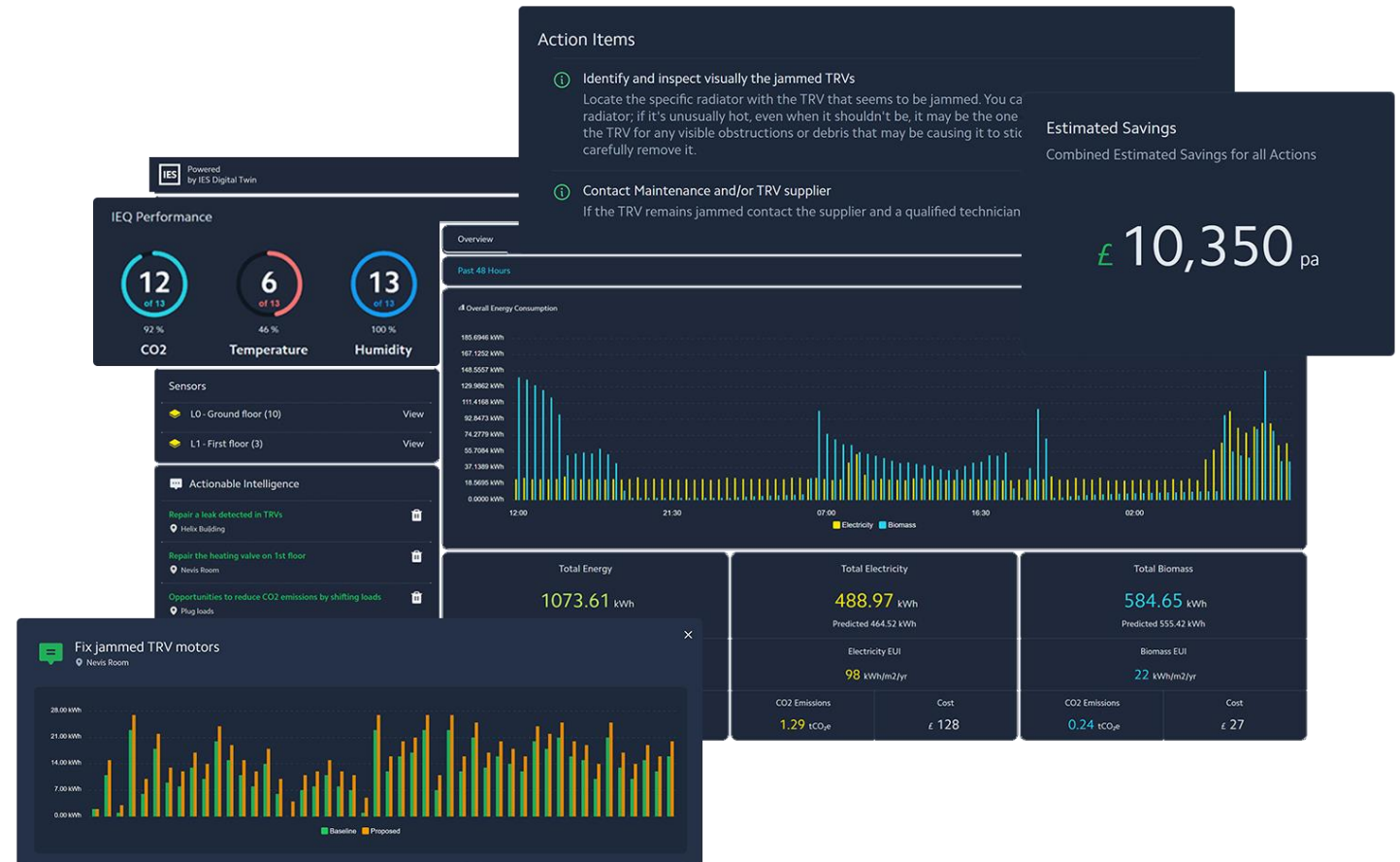
IES Live: Energy & Carbon Performance

- Track & report on key KPIs
 - EUI (kWh/m²/yr)
 - Total consumption
 - Carbon emissions
 - Costs
- Historic, current & optimal performance
- Electricity, Gas, Biomass
- Main and sub-meter breakdowns
- Adjustable date ranges



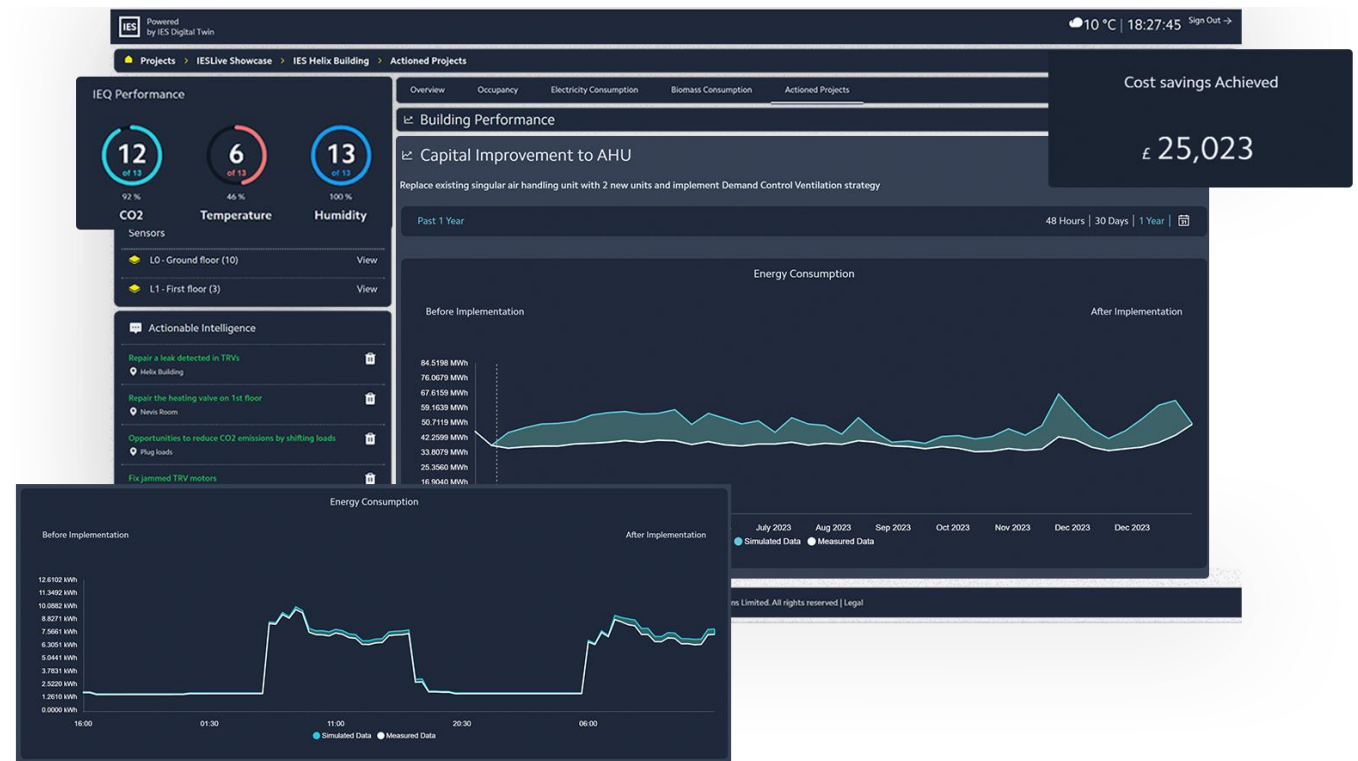
IES Live: Actionable Intelligence

- Impact of improvement scenarios
- Energy, cost & carbon savings
- Predictions vs actual
- Prioritise action
- Create business cases
- HVAC settings & schedules
- Equipment repairs
- Light retrofit scenarios



IES Live: Net-Zero Investment Performance

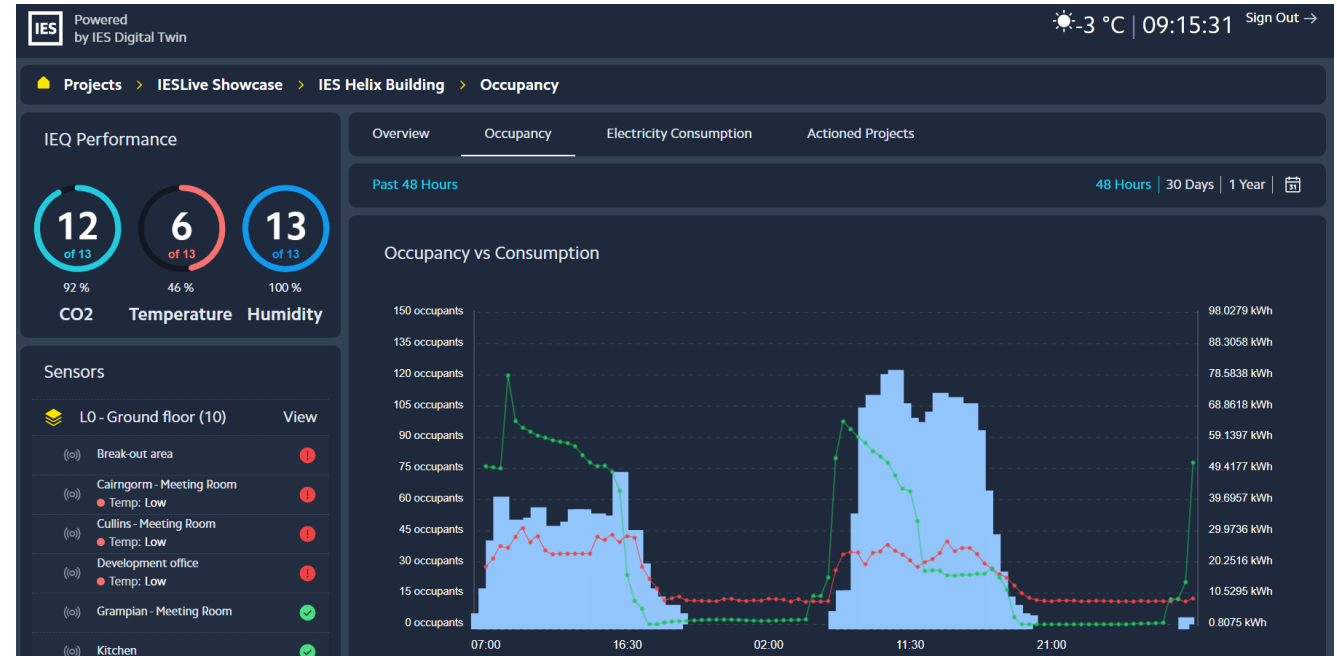
- M&V style tracking
- Verify performance savings
- Energy, cost, carbon
- Actioned improvement projects
- Ensure investment value
- Monitor actual savings
- Automatically updated daily





IES Live: Energy vs Occupancy

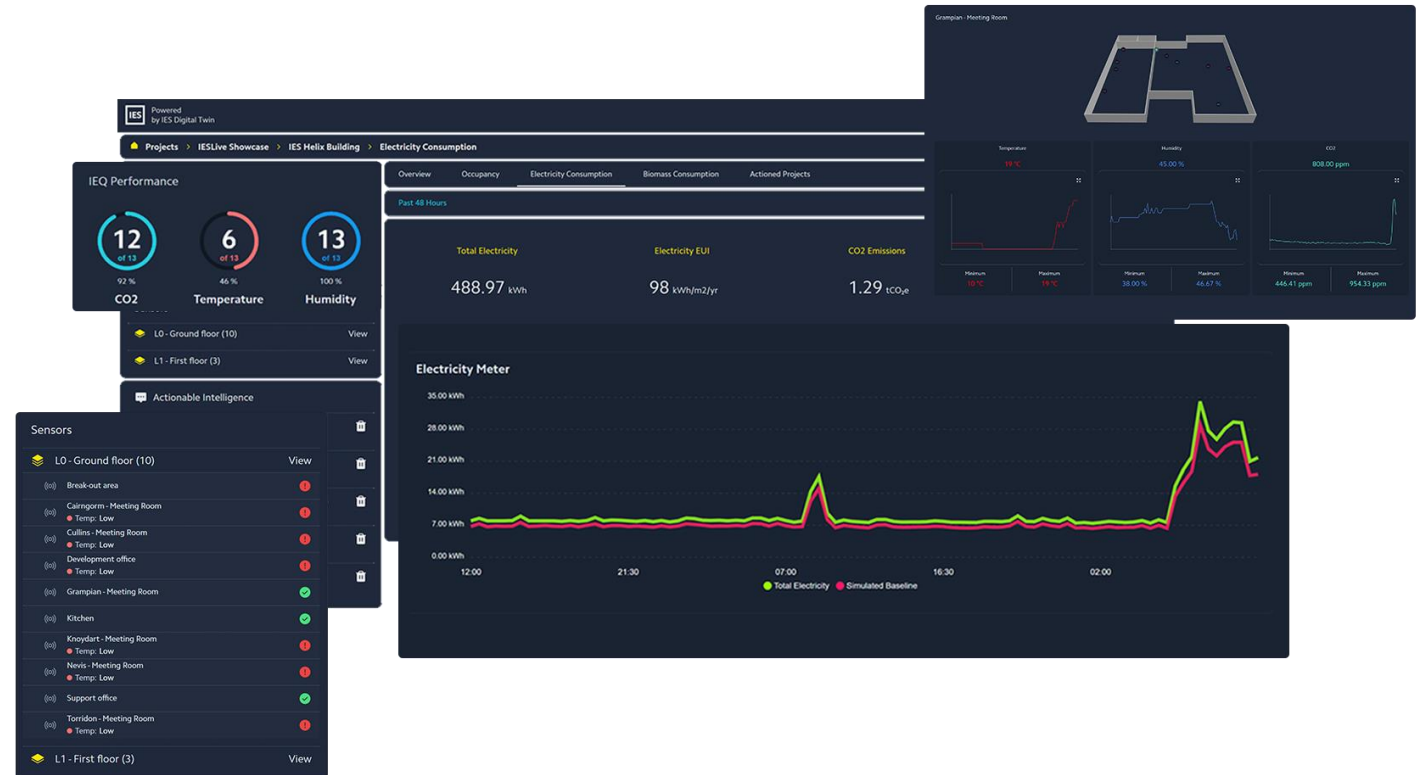
- Where Occupancy Data is available
- Building Capacity Tracking
- Energy tracked against Occupancy
 - Use per Occupant
 - Cost per Occupant
- Adjustable date ranges



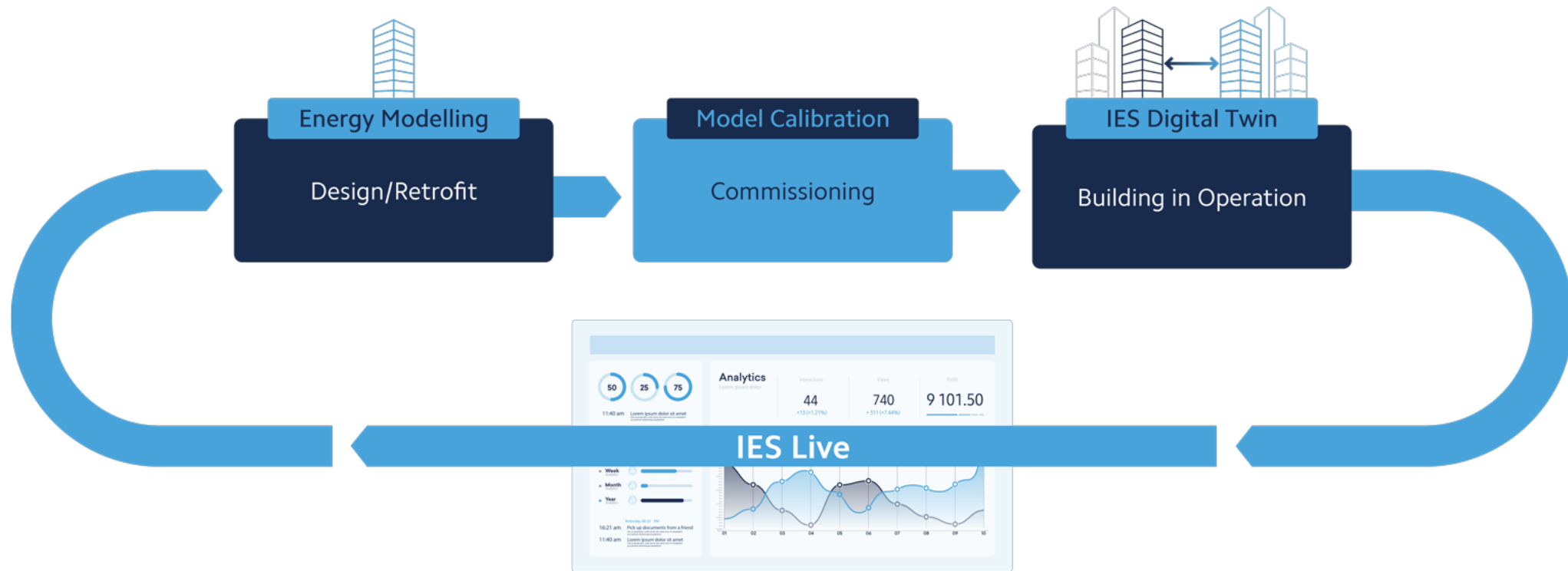
Current Occupancy		Energy Consumption		Electricity Consumption		Annual Biomass Consumption	
103 Occupants		1805.93 kWh		752.67 kWh		1053.26 kWh	
Building Capacity at	Average Occupancy	Per Occupant	Cost Per Occupant	Per Occupant	Cost Per Occupant	Per Occupant	Cost Per Occupant
68 %	83 Occupants	21.76 kWh	£ 3	9.07 kWh	£ 2	12.69 kWh	£ 1

IES Live: Comfort & Health

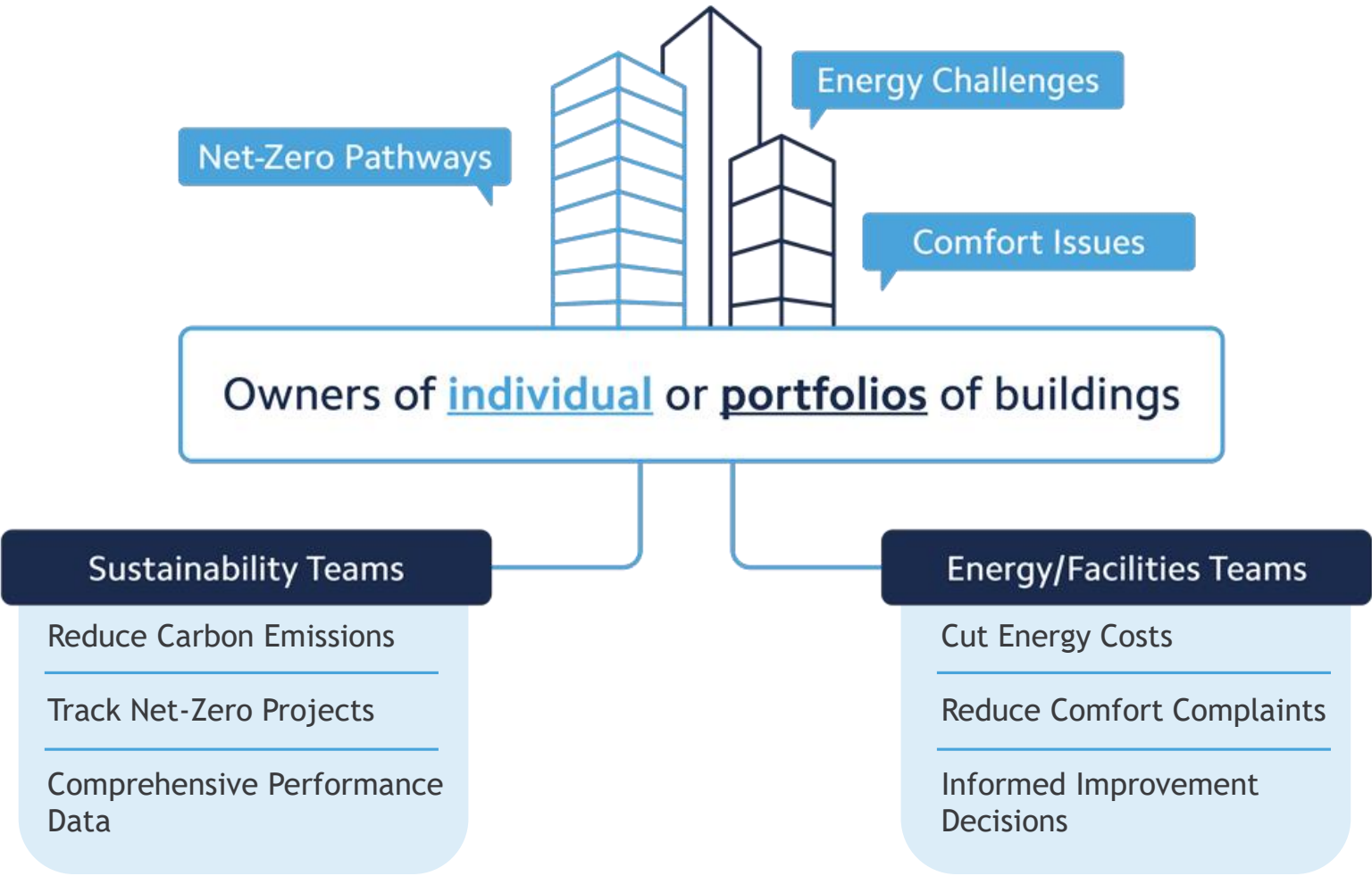
- Indoor Air Quality (IEQ) tracking
- CO2, temperature, humidity
- Pre-set acceptable comfort ranges
- Quickly identify problem spaces
- At sensor, room, area or floor Level
- Arrange and zone spaces
- Sensor locations on floor plan



IES Live: Whole Life Performance Evaluation



IES Live: Who Benefits?



IES Live: End-to-End Solution



Architects, Engineers
& Construction



Commercial Real
Estate



Education



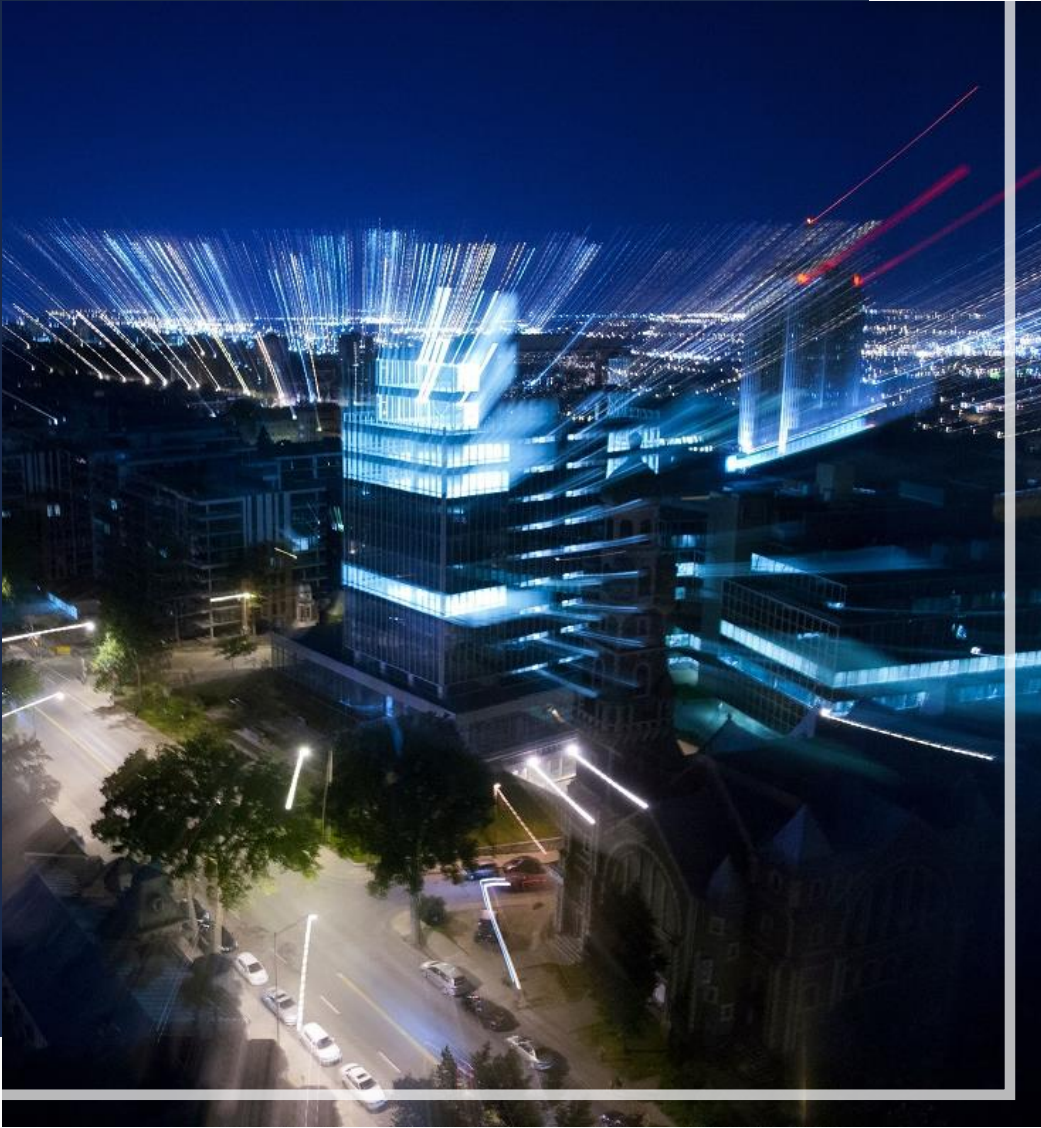
Healthcare



Local Government



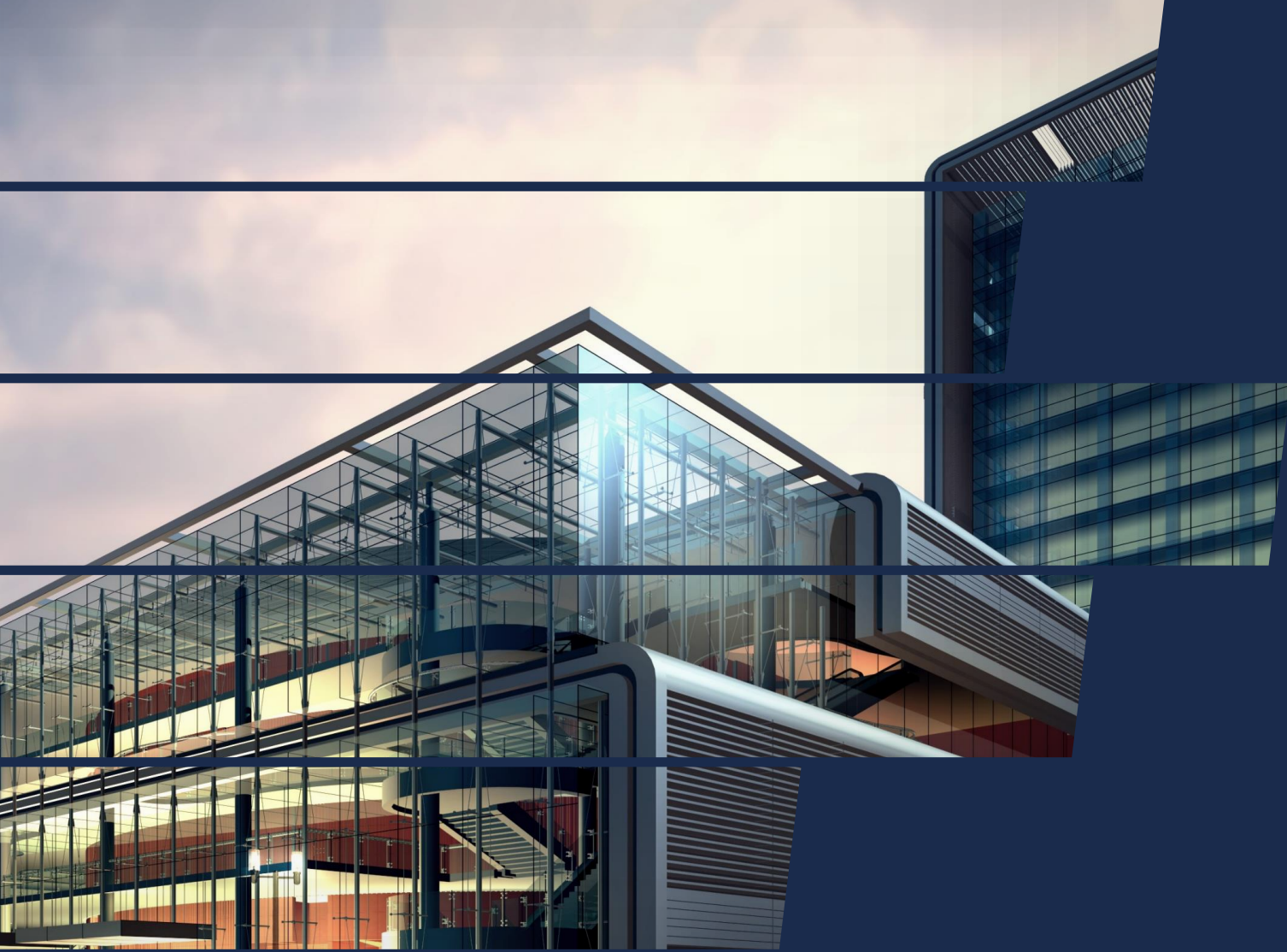
Manufacturing &
Industrial



IES Live: End to End Solution

Connect with us to kick start your project

- Energy audit/data gathering
- Identification of worst performing building(s)
- IES Digital Twin(s) creation
- Initial energy simulations/studies
- IES Live delivered
- Ongoing value from IES Digital Twin



THANK YOU

Any Questions?