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Conference & Exhibition

pragma

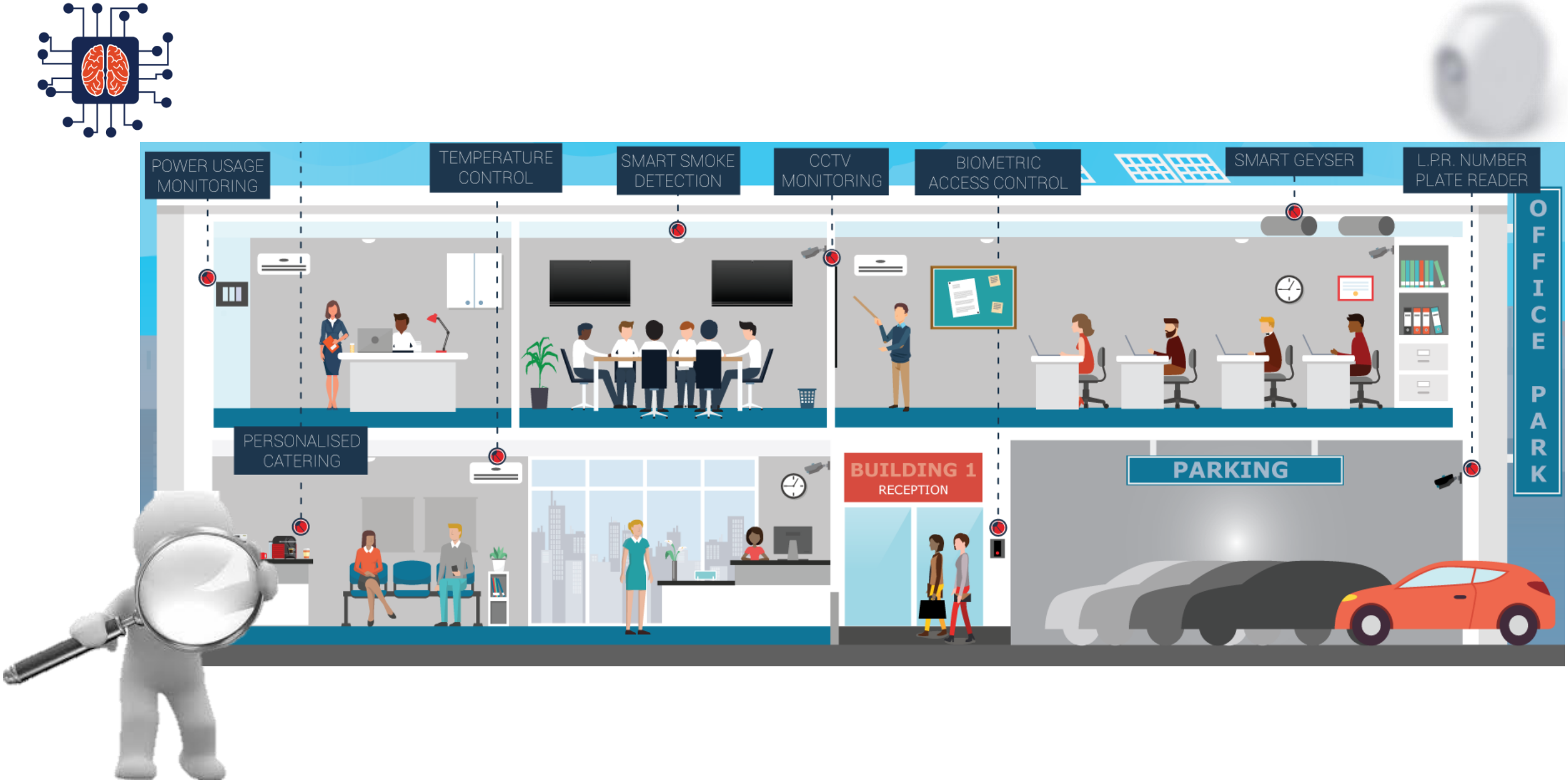
A case study on the expectations, costs and practicalities of implementing a Smart Building solution

Darren White

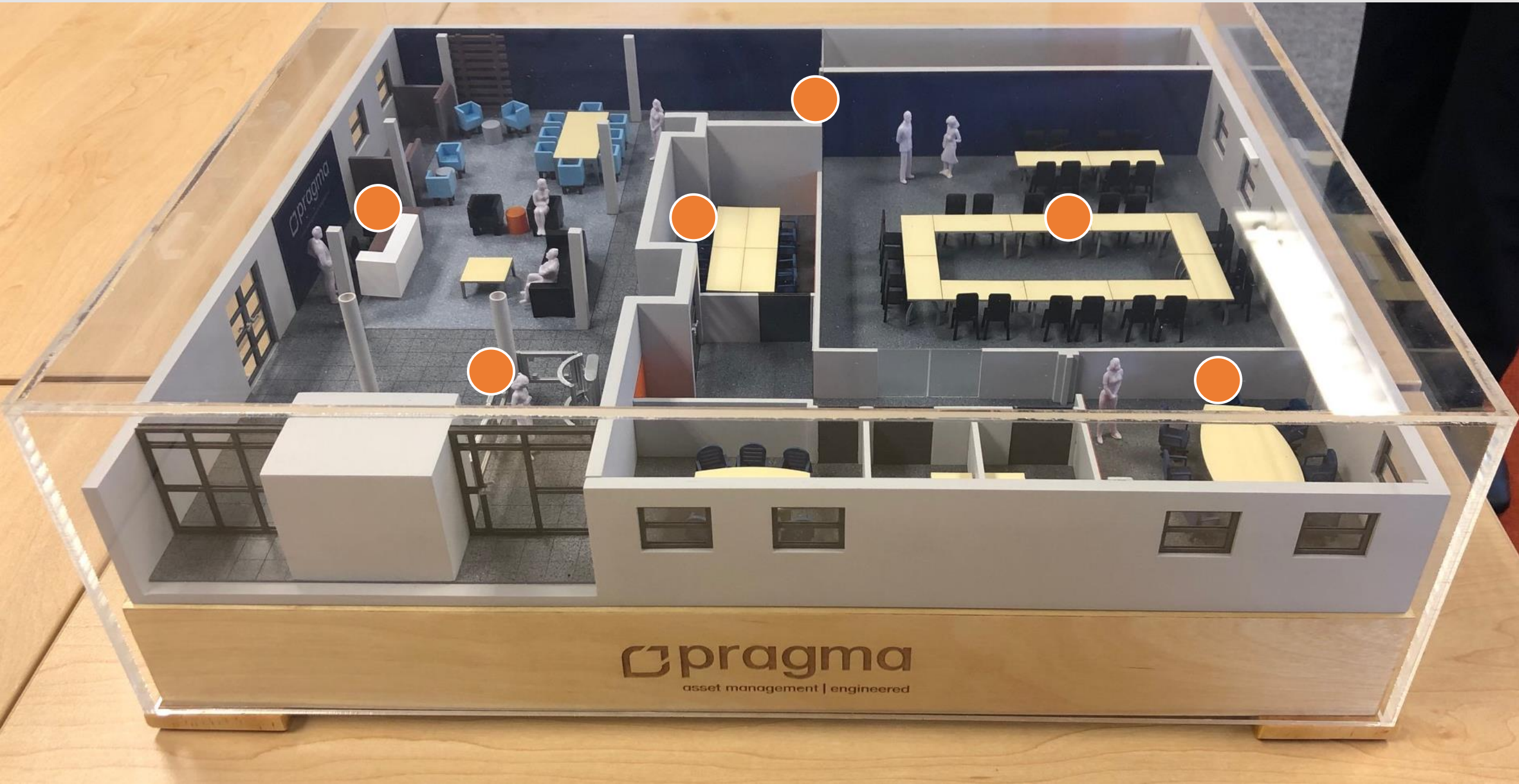
Content

- What are Smart Buildings?
- Owners and FM Responsibilities
- Making a Building Smart
- Case Study: Touch Points of Ideal Solution
- Case Study: Technology Architecture
- Case Study: Value Assessment
- Digital Transformation Strategy
- Recommendations
- Identify the Installed Device

What are Smart Buildings?



Physical Twin



Owners & FM Responsibilities

Comfort & Health

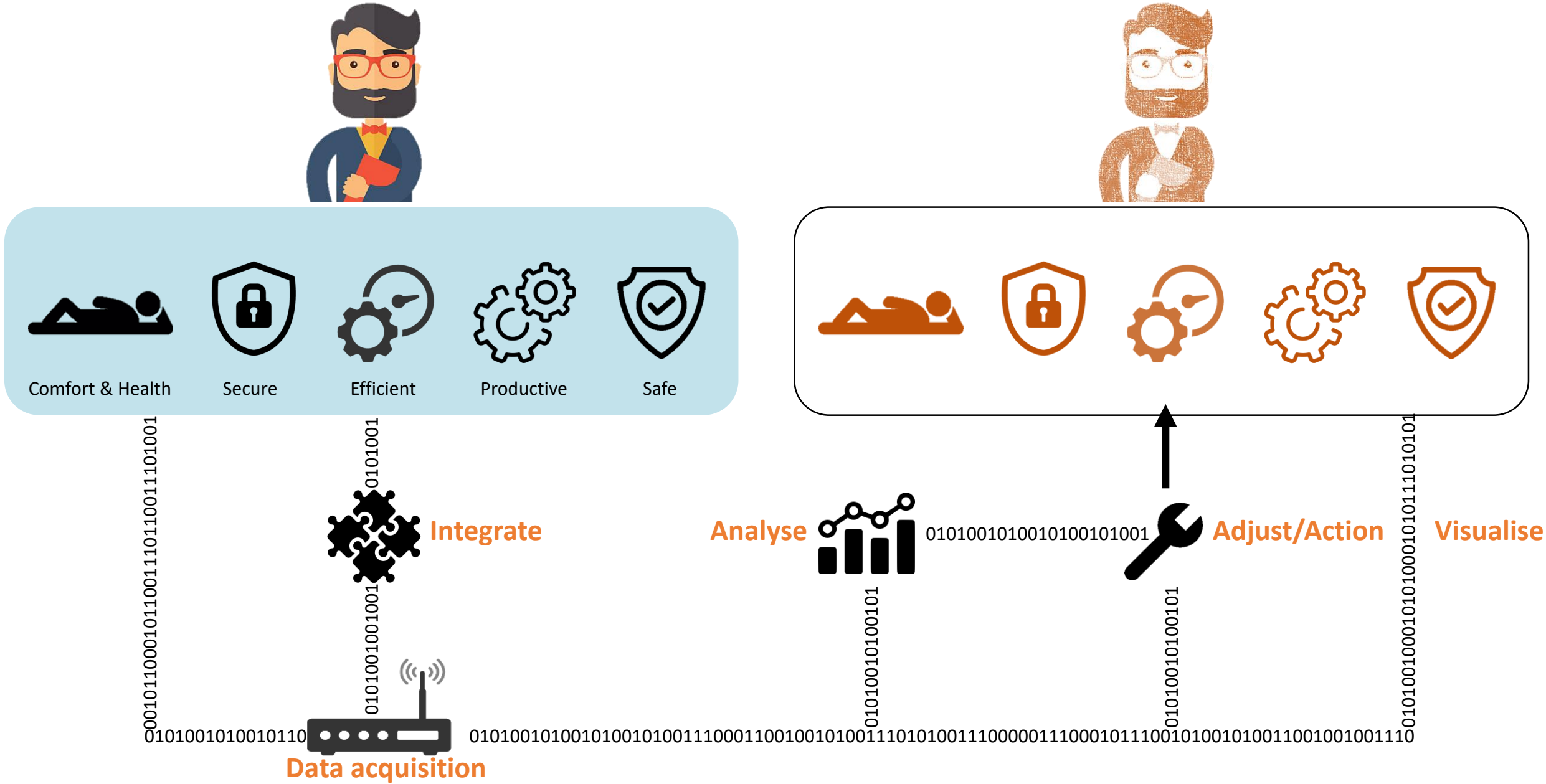
Secure

Efficient

Productive

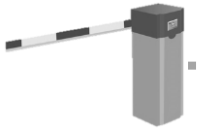
Safe

Making a Building Smart



Case Study: Touch Points of Ideal Solution

Navigate



Navigate

- Pre-register
- Reg plate scan
- Assign parking bay
- Auto access
- Facial recognition
- Induction
- Host notification

Objective: Establish a comprehensive connected Smart AM/FM installation to experiment with and demonstrate our Maintenance 4.0 capabilities.

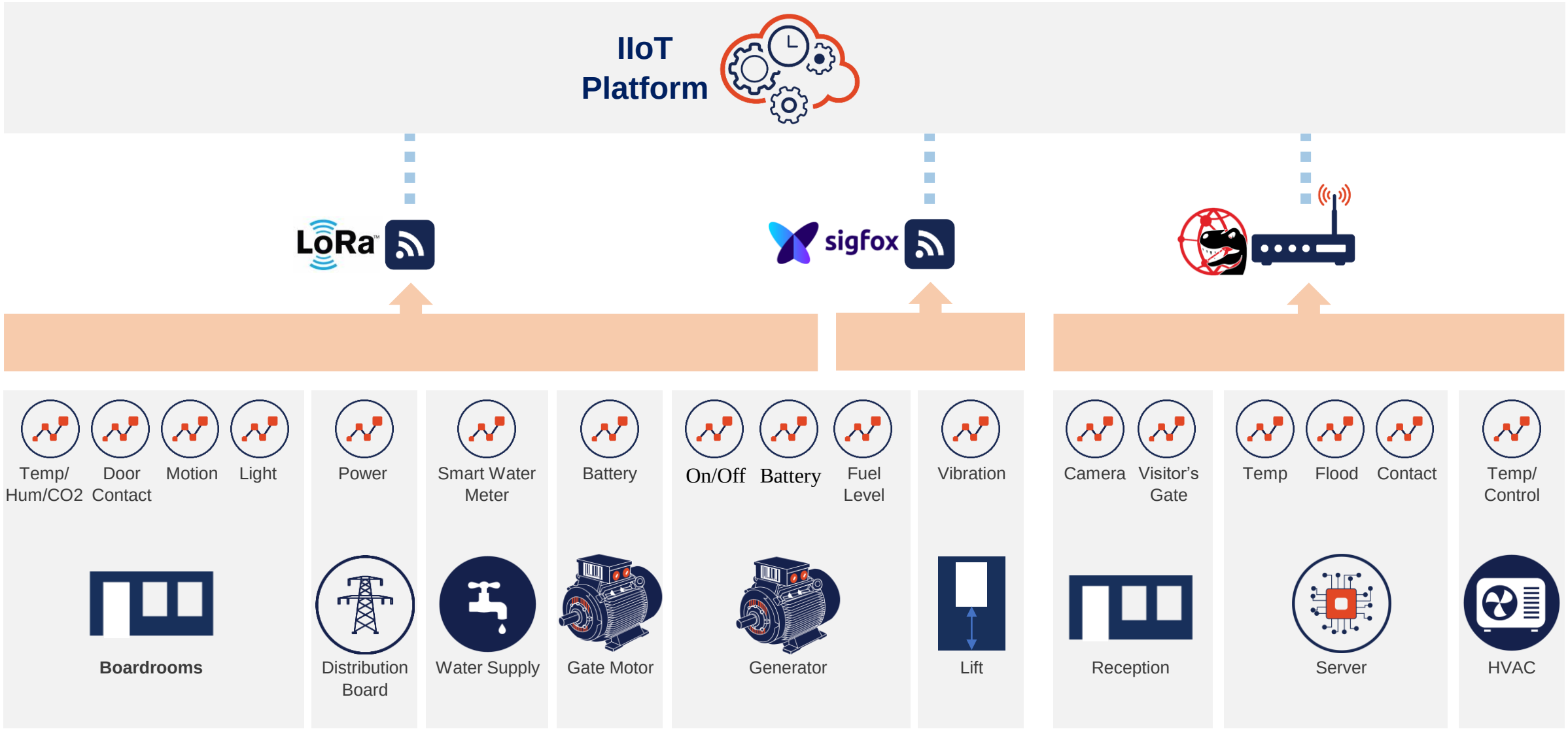
Navigate

Navigate

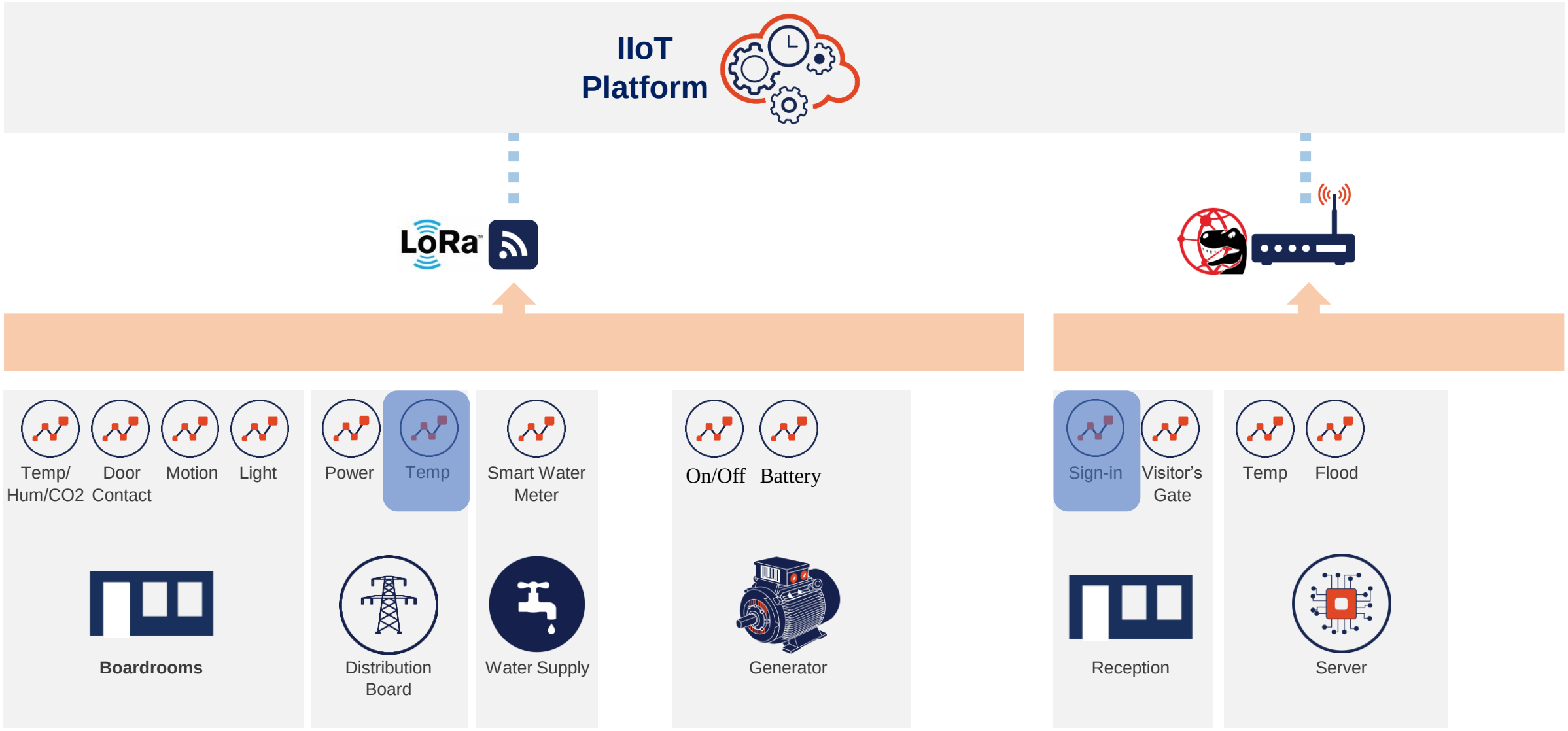
- Auto projector provision
- Noise sense
- Motion sense
- Environment
- Space planning
- Emergency evacuation
- Auto Food ordering
- Proximity marketing
- Coffee machine stock levels
- Flood sensing
- Dispenser replenishment
- Client feedback
- FM Call log

Case Study: Touch Points of Ideal Solution - Mind Map

Case Study: Technology Architecture – Original Scope

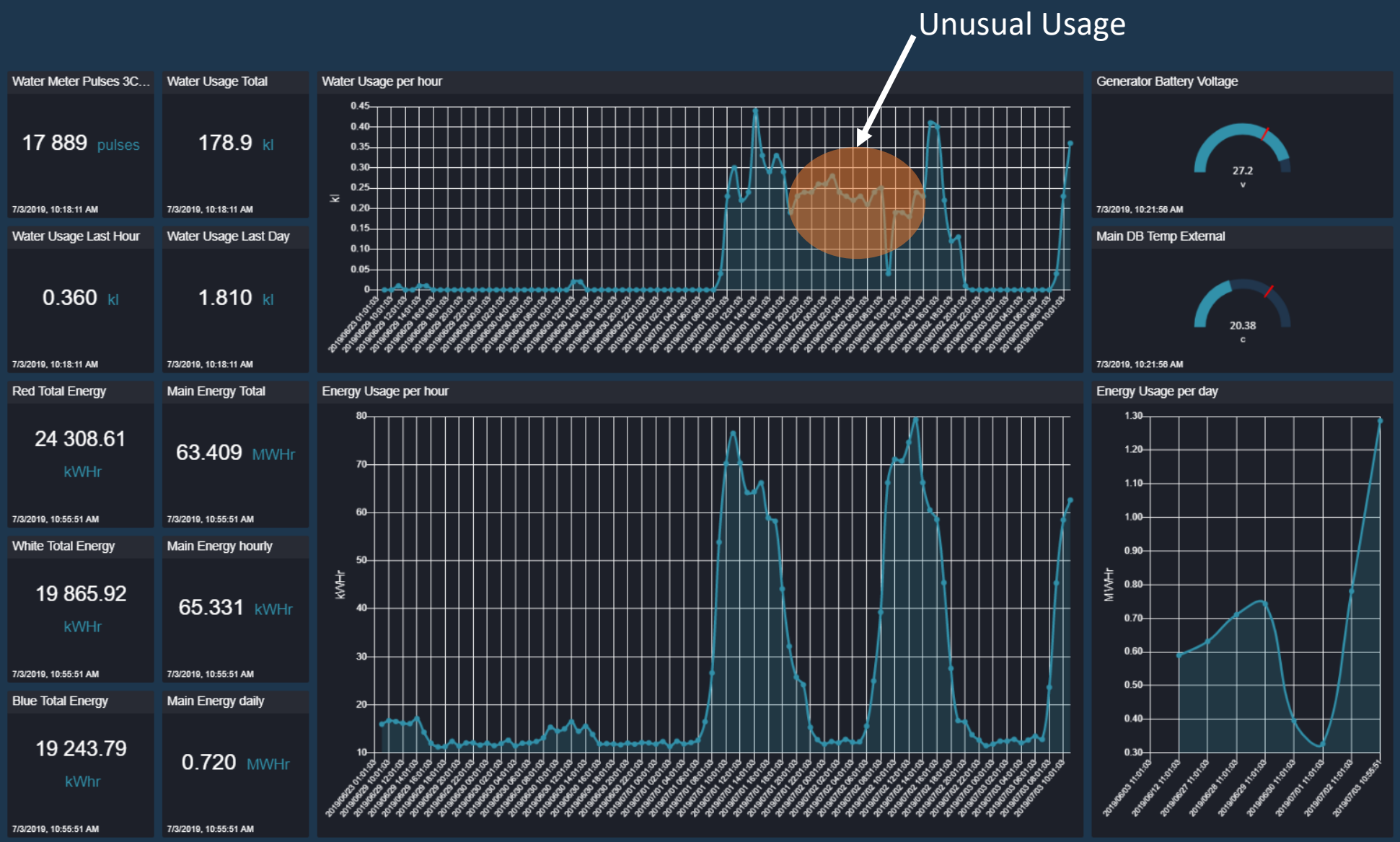


Case Study: Technology Architecture – Phase 1

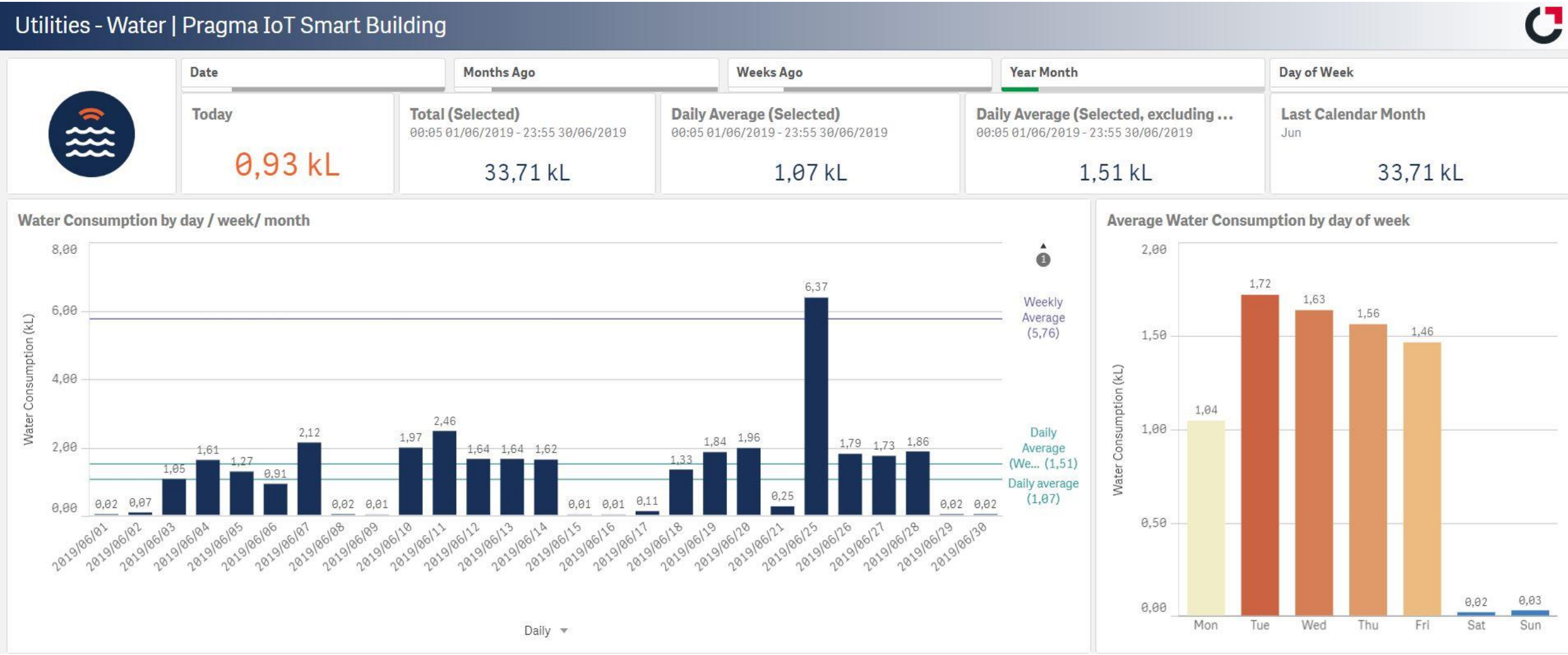


Case Study: Implemented Technology

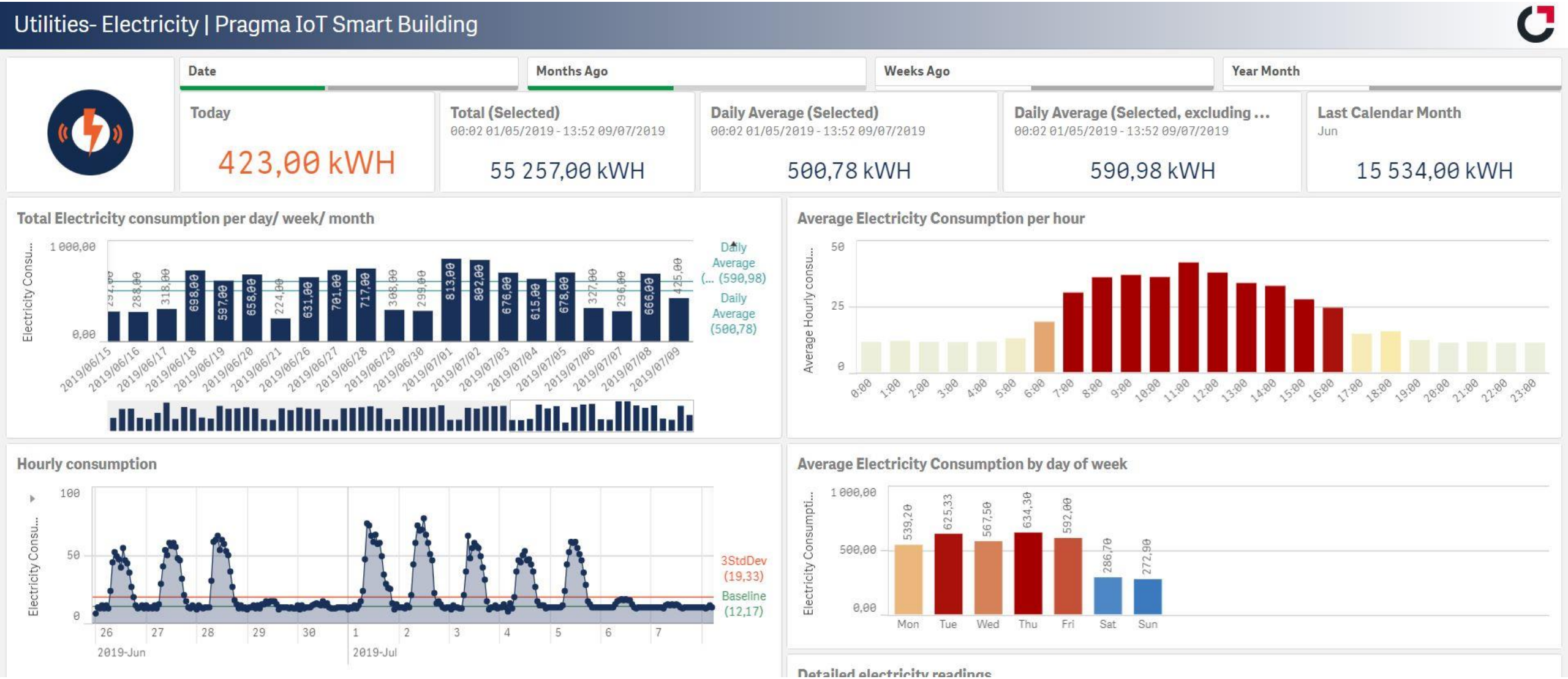
Case Study: Real-time Dashboard – Water and Electricity



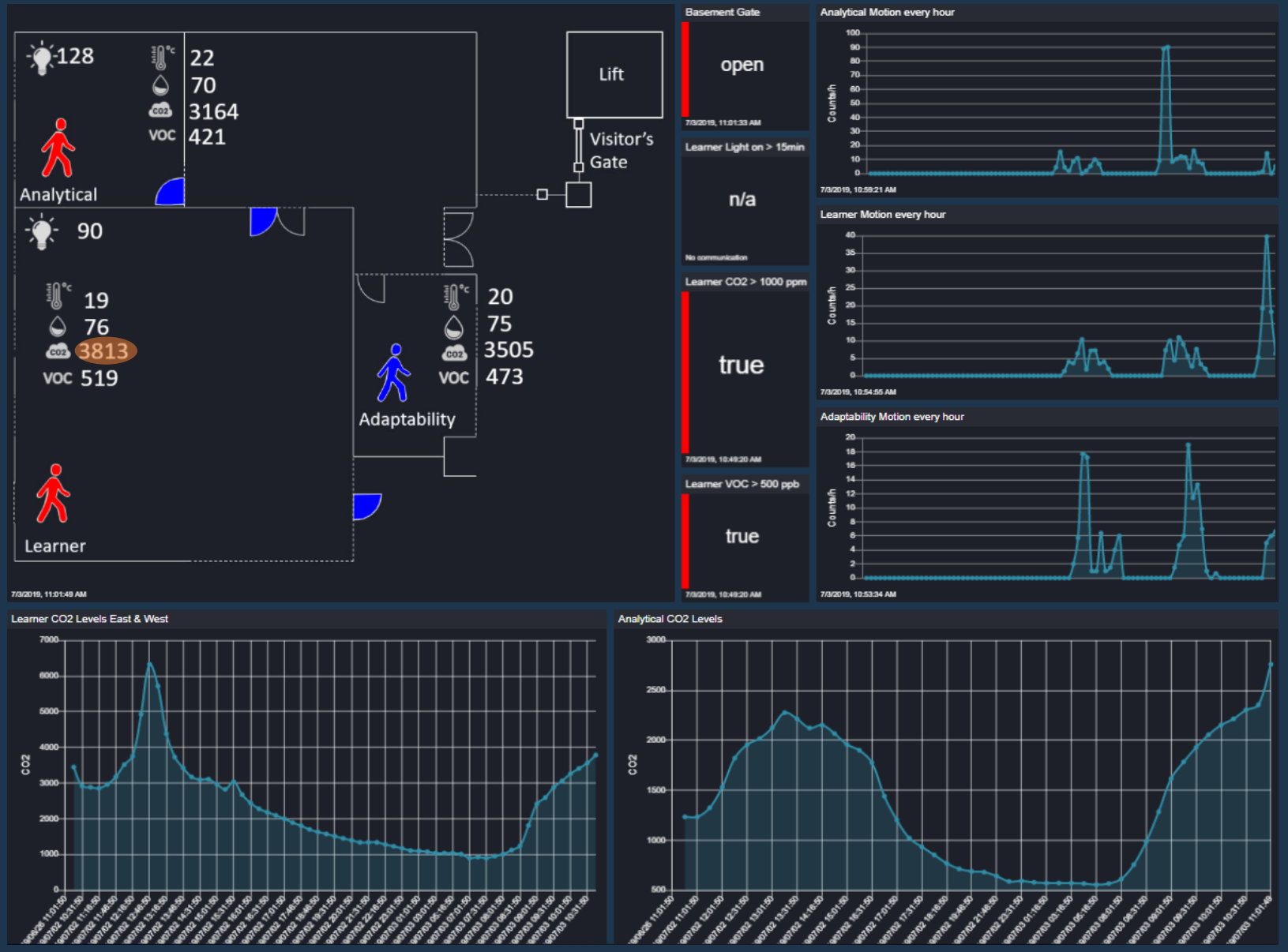
Case Study: Analytics Dashboard – Water



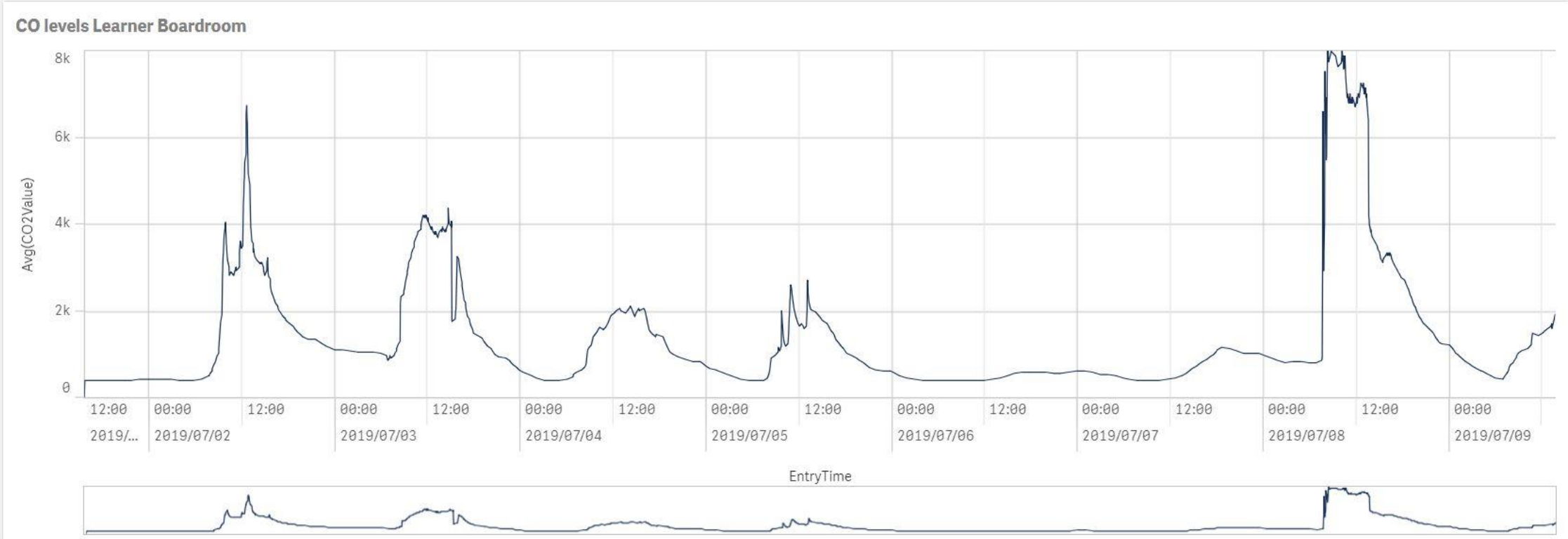
Case Study: Analytics Dashboard – Electricity



Case Study: Real-time Dashboard – Ground Floor



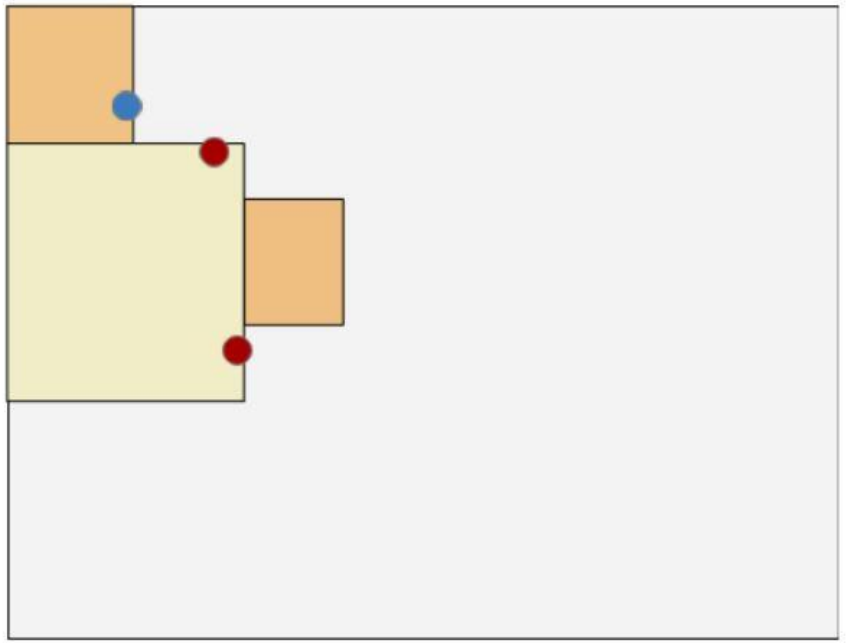
Case Study: Analytics Dashboard – Ground Floor



Case Study: Analytics Dashboard – Ground Floor

Floorplan | Pragma IoT Smart Building

Cape_Town_Office Floor 0 Average Temp



Doors
Point layer
13:51 09/07/2019
0 1

Temperature Layer
Area layer
Average Temperature Reading
8 30

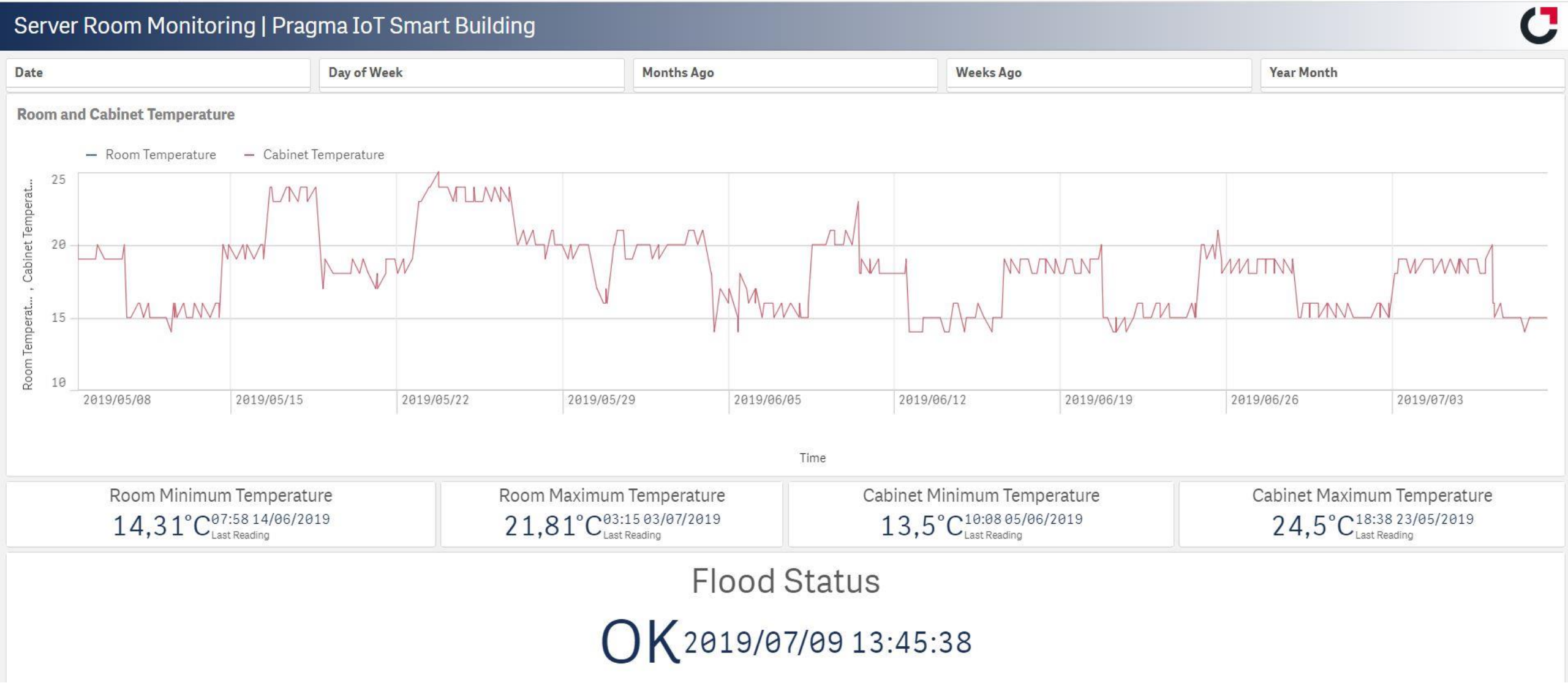
The calculation condition is not fulfilled

The calculation condition is not fulfilled

The ca

Case Study: Real-time Dashboard – Server Room

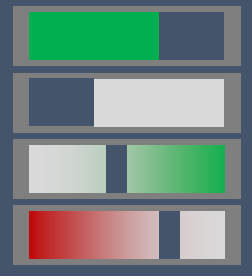
Case Study: Analytics Dashboard – Server Room



Case Study: Value Assessment

	Technology	Valuable Action?	Valuable Insight?	Cost-effective?	Overall beneficial?
Comfort & Health	Temp/Humidity	✗	✓	✓	✗
	CO2	✗	✓	✓	✓
	Volatile Organic Compound (VOC)	✗	✓	✓	✗
	Lighting	✗	✓	✓	✓
Safety & Security	Visitor's gate	✓	✗	✓	✓
	Visitor sign-in	✓	✗	✗	✓
Efficiency	Electrical energy usage	✓	✓	✗	✓
	Water usage	✓	✓	✓	✓
	Lighting & Motion	✗	✓	✓	✗
Productivity	Motion for room availability	✗	✓	✓	✗
	Outlook integration - space planning	✗	✓	✗	✓
	Branding - lighting box	✓	✗	✗	✓
	Generator battery charge state	✓	✗	✓	✓
	Generator fuel level	✓	✗	✗	✓

Digital Transformation Strategy

Process & Content	Clear understanding of gap / requirement	1	Do we understand the problem, context and planned solution well enough?
	Value • Stay in business • Statutory compliance • Optimisation (P, C, R) • Time to impact  Priority	2	How urgent is it to transform / replace this business process / function? Ex. how quickly will my competition start using this to outperform me?
	Other process transformations	3	Which other processes must be digitalised first before transforming this one?
Technology	Technology availability / maturity / cost	4	Technology that must be available at the right maturity and cost in the preferred platform.
People	Skills development / sourcing; Change management	5	Skills availability to implement, support and use the technology. Change management plan in place?

Digital Transformation Strategy – Form Example

Digital Ecosystem - Roadmap Element Sequence

Transformation Initiative

Gap / Requirement Definition

Process	
People	
Tech.	
Content	

Value contribution

Value element	Value range		Score
Stay in business need	Minimal (1)	Significant (10)	
Statutory requirement	No (1)	Yes (10)	
		Subtotal	(A)

Value element	Value range		Score
Performance benefit	Minimal (1)	Significant (5)	
Cost benefit	Minimal (1)	Significant (5)	
Risk treatment benefit	Minimal (1)	Significant (5)	
		Subtotal	(B)

Time to impact	2+ years (1)	Immediate (5)	(C)

Priority (A + B) x C

Prerequisite process transformations / actions

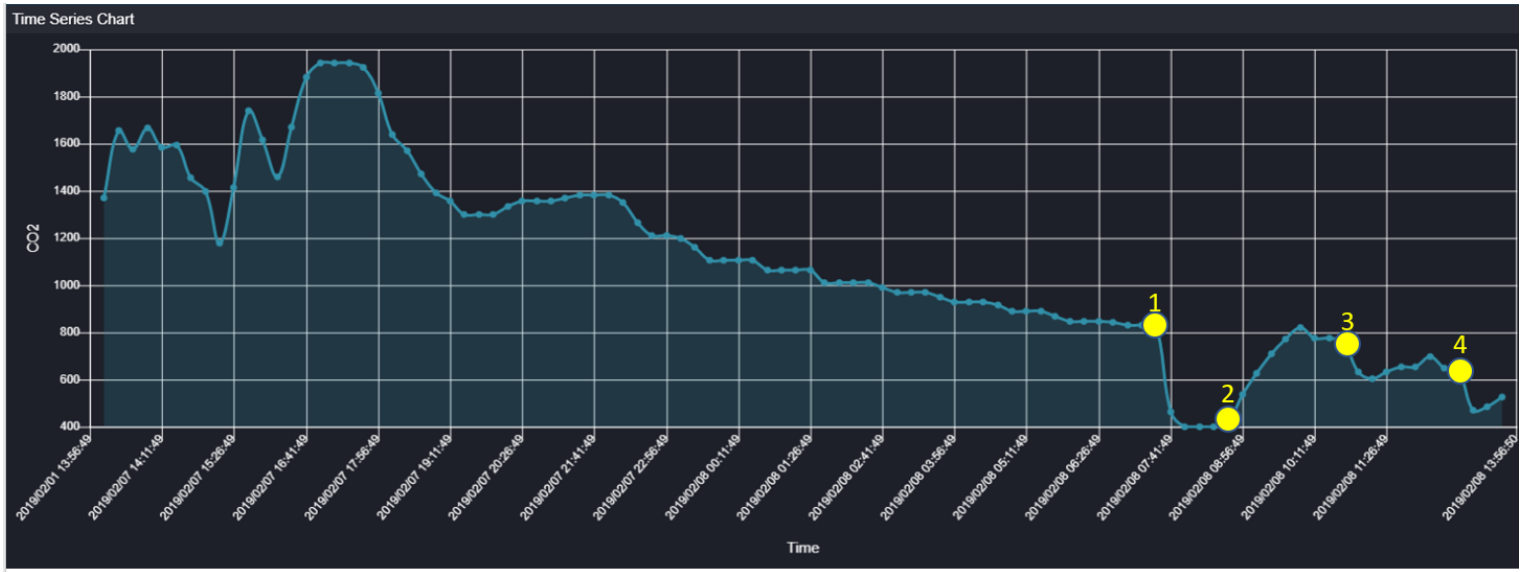
Action/process transformation	Importance range		Score
	Minor (1)	Critical (5)	
	Minor (1)	Critical (5)	
	Minor (1)	Critical (5)	
	Minor (1)	Critical (5)	

Recommendations

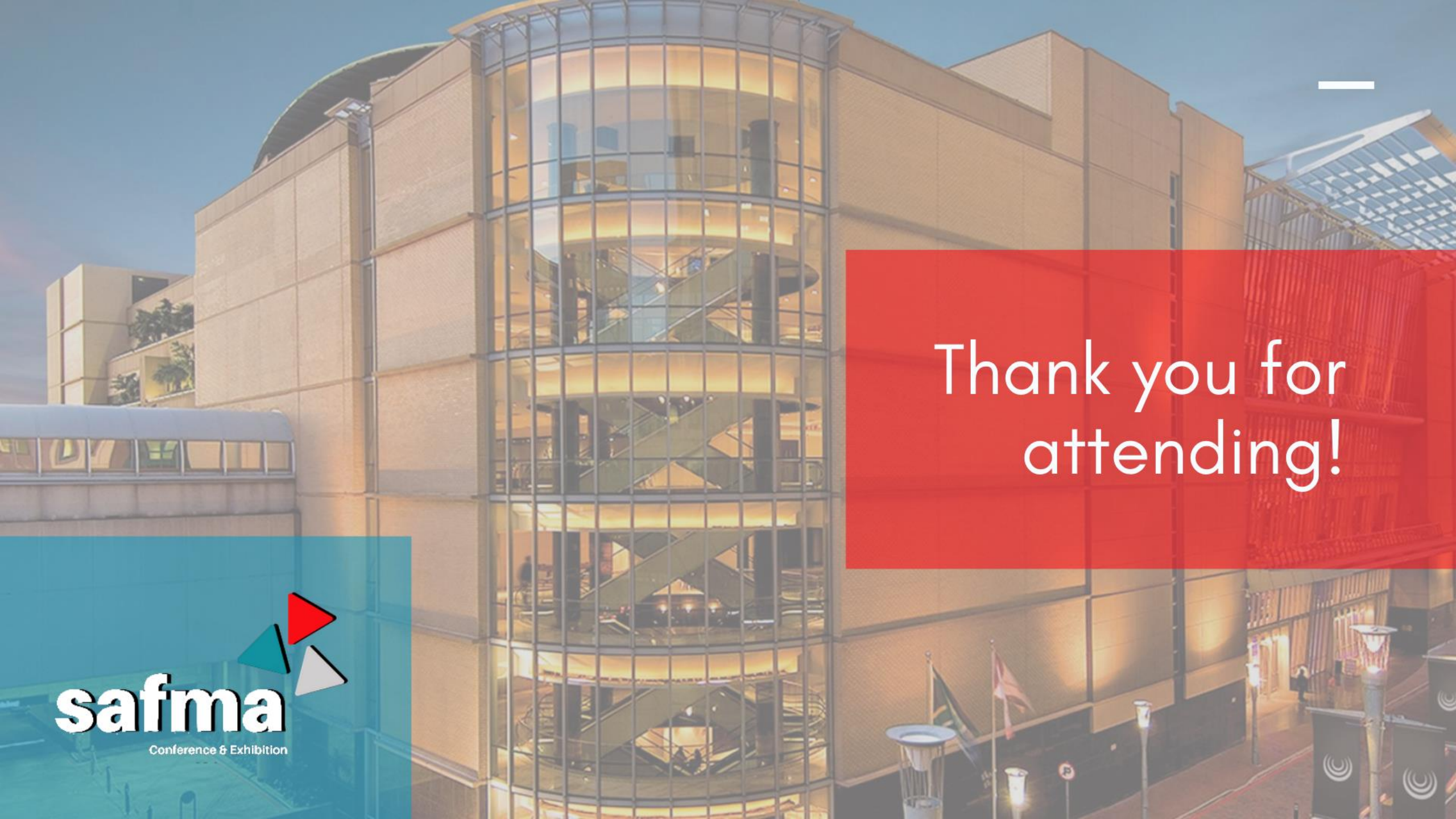
- Understand your requirements
- Maintain alignment with all key players
- Ensure sufficient value will be gained
- Select mature, easy maintainable and agnostic technology
- Device management flexibility
- Continuous monitoring might not always be the solution
- Implement a flexible and interoperable IoT solution – plug ‘n play
- Integrate into existing systems if available

“Don’t get disrupted by technology!”

Identify the Installed Device



1. Time: 07:30 – Arrived in Learner and opened up windows
2. Time: 08:30 - Started with training and the room was full with people
3. Time: 10:40 – Tea break and the room was thus empty
4. Time: 13:00 – Lunch break


Thank you for attending!
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