SmartViz
Better Buildings. **Better** Places.

Unleashing the
true potential:

Why 'Smart Buildings' need to get truly smart

Why are buildings so dumb and stupid, even the ones so called 'Smart Buildings'?

In this thought-provoking article, we delve into the inherent inefficiencies of modern buildings and explore the startling truth behind their lackluster performance. Join us as we uncover the challenges and offer insights into how we can revolutionize the building industry and make buildings truly smart.

Introduction

Let's face it: smart buildings aren't really so smart after all. Ok, so they may have the latest technologies. Latest Building Management Systems. Sensors. LED lights. Smart controls. Intelligent elevators. And so on. Yet these buildings are dumb. They don't know how many occupants are present. Or where they are. So they continue to heat and cool the floors and rooms even when they are empty or half empty. The sensors and BMS may turn the lights on and off, but don't regulate CO_2 to suit the occupancy. Or smartly position the elevators to suit the movements in peak times. Or simply track energy against occupancy to reduce carbon emission. The data collected by these 'smart' systems is often inaccessible. The supposedly 'intelligent' components are often vendor-locked and not interconnected. Their actions are hardly transparent so you never know if they are working right, or working at all! See if you can even get these intelligent systems to actually talk to each other. You can't. The hard truth is, most smart buildings are neither so intelligent, nor data driven, and definitely not people centred!

The misguided perception of smart buildings

Smart buildings, in theory, hold immense potential to optimize energy consumption, enhance user experience, and streamline operations. However, in practice, they often fail to deliver on these promises. Many smart buildings suffer from disconnected systems, limited data integration, and a lack of human-centric design. This disconnect between the technology and the actual needs of the building and its occupants leads to inefficiencies and missed opportunities for improvement.

Buildings are for people. Therefore knowing where they are, what they need, how they feel, etc is fundamental to its success.

Ignoring the human element

One of the primary reasons why smart buildings fall short is their failure to prioritise the human element. Buildings should be designed and operated with the occupants' comfort, productivity, and wellbeing in mind. Yet, many smart buildings focus solely on automation and data-driven processes without considering the impact on the people within those spaces. This oversight results in suboptimal environments and an overall disconnect between the building and its occupants. The result? Sick building syndrome. Poor productivity, and increased absenteeism at workplace. Compromised health and wellbeing at homes. Poor learning environment in schools, colleges and universities.

Siloed systems and data overload

Another significant hurdle faced by smart buildings is the existence of siloed systems and the challenge of effectively utilizing the wealth of data available. Building Management Systems (BMS), Energy Management Systems (EMS), and other specialized platforms often operate independently, limiting the potential for holistic optimization. Data overload further compounds this issue, making it difficult to extract actionable insights and implement meaningful changes.

Scattered, siloed data limit the potential for holistic building optimisation

Transforming dumb buildings into intelligent spaces

Transforming the landscape of smart buildings involves transcending the mere deployment of technology. It necessitates a paradigm shift toward creating structures that seamlessly integrate technology with human experiences. Where BIM, BMS and BEMS have failed to deliver the promise of improved building performance, IoT, digital twins and AI are paving the way for true building intelligence. Simple, low cost, peel-and-stick sensors, integrated with simple, intuitive digital twins and realtime building analytics can revolutionise the concept of smart buildings by addressing these inherent limitations. What will it take for these technologies to make buildings truly smart?

Disrupting the industry: building blocks of truly smart buildings

The fundamental building blocks we need to deliver a truly smart building:

1.   IoT for connected intelligence

Simple, low cost sensors can be easily retrofitted into any buildings, with an adjustable level of granularity.

## 2.   Cloud platform as a single source of truth

Cloud technology has matured a long way and provides a robust solution to aggregate, process and integrate data using a range of data storage, analytics and security services.

Delivering a single source of truth using data integration and digital twin

3.   Digital twin as a smart building platform

Digital twins are a virtual replica of the building – however they're much more than the 3D representations. They are living, breathing model of the building – streaming data from sensors, regulating controls in realtime, optimising building performance. They also provide insights into what parts of the buildings are used well vs unused, which parts are performing well vs poorly, and where substantial savings can be achieved. Moreover, they will also allow you to scenario plan and optimise the building elements to save costs and improve user experience.
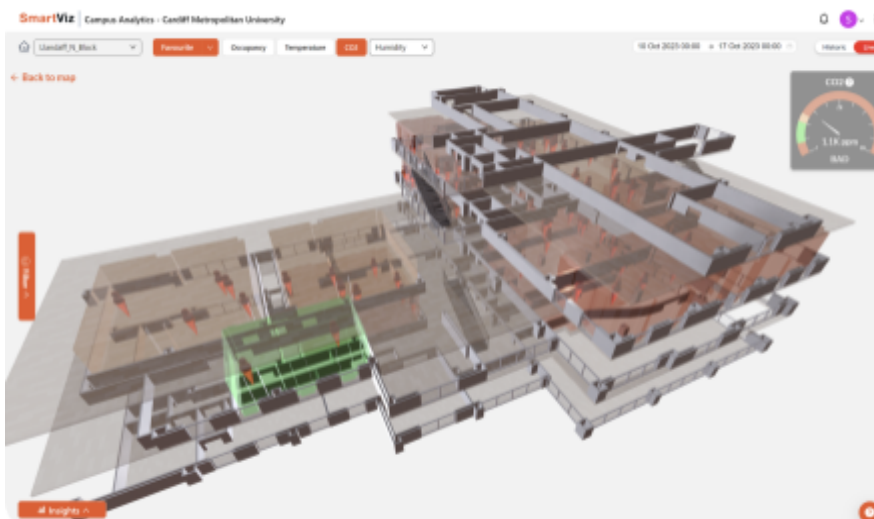
Example of a smart building digital twin platform - SmartViz

4.   AI

AI is becoming increasingly accessible as a technology. It can detect trends from the live and historic data. It can predict future performance. It can trigger alerts. It can warn you in advance and regulate systems based on future weather and events.

The power of human-centric design

At the core of truly smart building is the recognition that buildings should adapt to the needs and preferences of their occupants. By leveraging real-time data and AI-driven insights, you can optimise environmental conditions, such as lighting, temperature, and air quality, to create spaces that enhance comfort, productivity, and overall wellbeing. This human-centric design approach ensures that smart buildings become truly intelligent and responsive to the people they serve.

SmartViz – making buildings truly smart

SmartViz is revolutionizing the concept of smart buildings by addressing the above inherent limitations. As an intuitive digital twin platform, SmartViz offers a comprehensive solution to transform "stupid" and "dumb" buildings into truly intelligent and responsive spaces.

At SmartViz, we believe in the continuous evolution of smart buildings. Our platform integrates IoT and AI powered digital twin, occupancy monitoring and analytics, space management, indoor air quality monitoring, energy management solutions to create intelligent, adaptive, and efficient spaces.

Through its advanced predictive modelling and data analytics capabilities, SmartViz enables holistic visibility and control over building performance. By integrating disparate systems and consolidating data, SmartViz provides a unified platform that empowers building owners, operators, and occupants to make data-driven decisions for enhanced energy efficiency, improved user experience, and increased productivity.
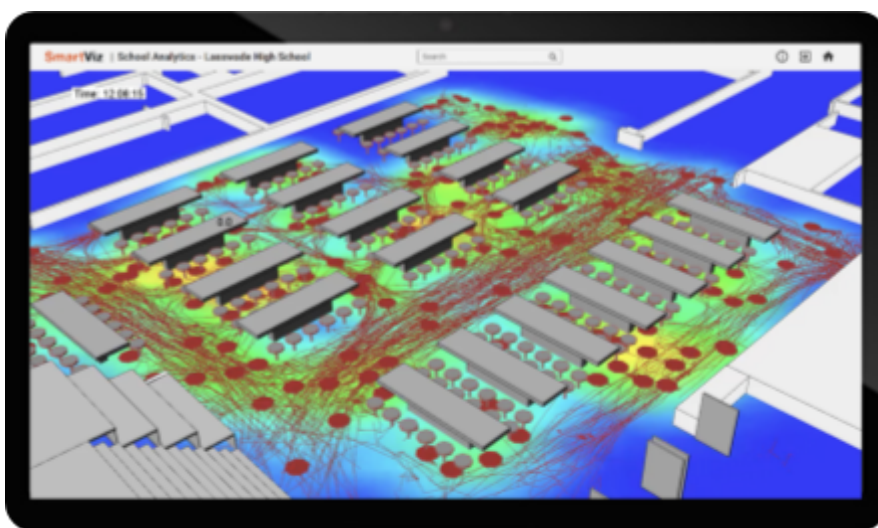
Live building analytics within a digital twin framework using SmartViz

Conclusion and the road ahead

The current state of smart buildings often leaves much to be desired, with their limited intelligence and disconnected systems. However, the future holds immense potential for transforming these buildings into intelligent, sustainable, and user-centric spaces. SmartViz leads the charge in this transformation, empowering buildings to break free from their limitations and unlock their true potential.

Through its intuitive digital twin platform, SmartViz bridges the gap between technology and human needs, revolutionizing the way buildings are designed, operated, and experienced. With SmartViz, we can redefine the notion of smart buildings, making them truly intelligent, adaptive, and efficient while enhancing the quality of life for their occupants.

Discover how SmartViz is driving the future of smart buildings and learn more about our innovative solutions. Contact us

An abridged version of the above article was published in the prestigious AEC Magazine. The article, titled "Why Smart Buildings Need to Get Truly Smart," delves into the inherent inefficiencies of modern buildings and explores how we can revolutionise the industry with data-driven and people-centred analytics.

Read the full article on AEC magazine here >

Ready to make your buildings truly smart?
See SmartViz in action. Request a demo today and see how SmartViz can benefit you.
Book your demo on smart-viz.com