getronics

What is a Smart Building?

WHITEPAPER Smart Spaces

What is a Smart Building?

The world of work has changed dramatically in recent times. The rise of digital solutions – and more recently, remote working – has meant the workplace fulfilling a very different role to the one it held even just a few years ago. Having a water cooler and a vending machine may once have been all that any office needed – not so, anymore.

In fact, just as typewriters have been replaced by laptops, and filing cabinets have given way to servers, the office building itself appears set for a revamp. Across numerous industries, smart buildings are being talked about as the next big thing in the world of work. It's expected that smart buildings could reduce energy consumption, deliver new insights, and boost productivity. But what exactly is a smart building?

While definitions vary somewhat, a smart building is often taken to mean one that generates data and insights about itself and how it is used. This is primarily through the incorporation of digital advances like the Internet of Things (IoT), analytics, and other technologies within building management systems to transform big data into valuable insights around things like usage patterns, energy consumption, and much more besides.

.BUILDING MOMENT

The smart building market is expected to grow at a CAGR of 10.5% over the next few years, reaching a total valuation of $108.9 billion by 2025. There are several drivers behind this growth, many of which are connected to the digital transformation agenda that is sweeping through many workplaces, regardless of industry or geography.

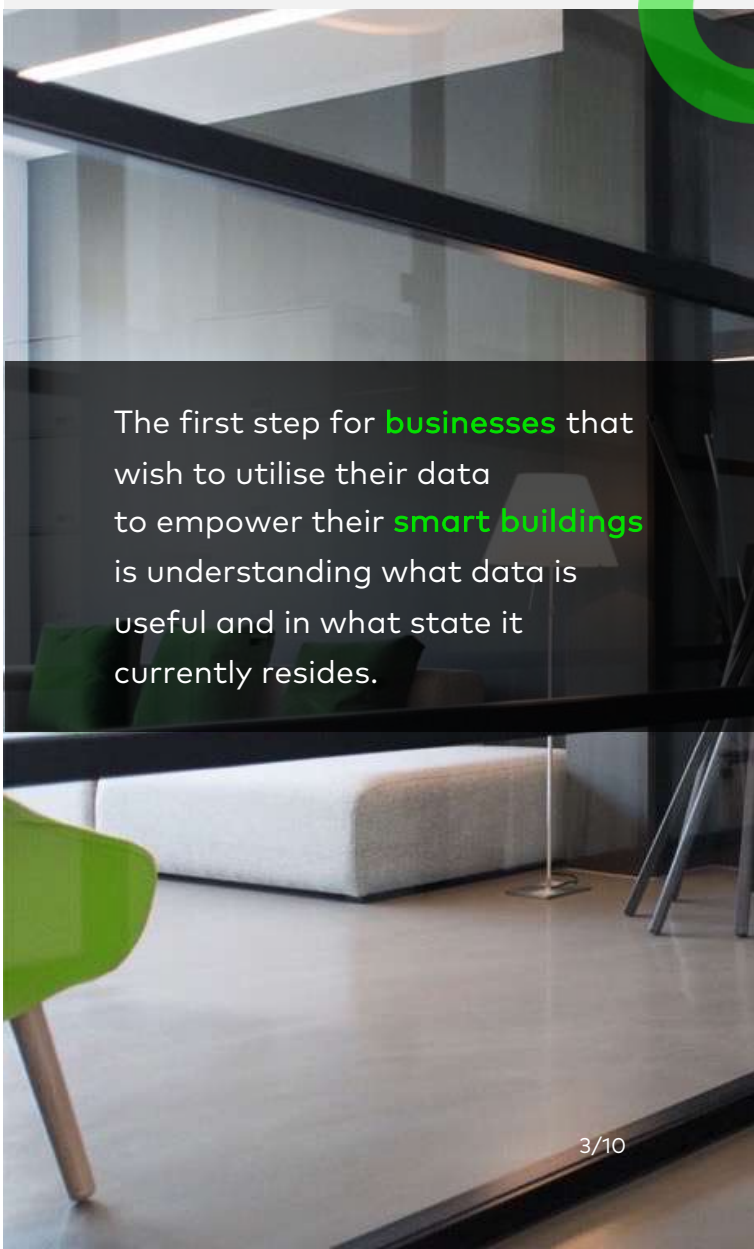
We've listed a few below:

1 Data

Without a good supply of data, smart buildings cannot function effectively. Today, businesses have access to a wealth of data that they can leverage within their smart buildings – data around occupancy levels, facility end uses, enterprise metrics, and resource consumption. This information can be collected via software-as-a-service (SaaS) platforms, mobile apps, IoT sensors, and any other network-connected solution.

This growing availability of data has been a key reason for the increasing popularity of smart real estate. Last year, smart buildings collected 37.2 zettabytes of data worldwide, more than double the 14.6 zettabytes collected in 2017. Of course, the rise of smart buildings is not just about having more data to hand – businesses are also gaining a better understanding of what to do with this data.

Ultimately, smart real estate is about creating a better experience for employees, visitors, and anyone else that interacts with the physical building.



The first step for businesses that wish to utilise their data to empower their smart buildings is understanding what data is useful and in what state it currently resides.

Globally, buildings generate almost 40% of all greenhouse gas emissions, which means that any reduction to the carbon footprint of the built environment can deliver a huge sustainability boost.

The sheer volume of data available may still be overwhelming but analytics and the field of data science are advancing rapidly to bring some order to the data deluge. The first step for businesses that wish to utilise their data to empower their smart buildings is understanding what data is useful and in what state it currently resides. Fortunately, technology is now available that can automate the discovery, acquisition and integration of data in the smart building space.

2 Sustainability

Sustainability is becoming a core concern for a wide range of industry sectors, with 80% of companies worldwide now reporting on sustainability.

High-profile firms have helped normalise the importance of investing in sustainability, with Amazon launching a $2 billion Climate Pledge Fund last year and Apple committing to be 100% carbon neutral for its supply chain and products by 2030. But you don't need to be a technology giant to help promote sustainability.

Smart buildings can certainly help in this regard by utilising IoT platforms to monitor current energy consumption patterns and providing targeted recommendations for ways to reduce energy use. The same approach can be leveraged to reduce water usage, implement recycling initiatives, and explore renewable energy options.

3 Adaptability

The COVID-19 pandemic has demonstrated that businesses cannot take anything for granted. It has rapidly accelerated existing workplace shifts and instigated entirely new ones. For office managers, these changes have resulted in a revamping of the workplace. With more businesses embracing remote or hybrid working, what does this mean for the future of the office? What are the needs and requirements for the built environment in a post-COVID world?

Although smart buildings do not hold all the answers to these questions, they are flexible enough to manage rapid workplace shifts more easily than traditional workplaces.

Smart buildings can be used to manage employee and visitor numbers to avoid overcrowding and employ a data-driven approach so that employees are only asked to come into the office when it is most productive for them to do so. Crucially, with many businesses (and workers) unsure exactly what form the workplace of tomorrow will take, smart buildings are adaptable enough to manage whatever level of occupancy is demanded.

4 Integration

Integration is the essence of every smart building. Data and insights can come from a multitude of sensors, each of which may be manufactured by a different vendor. The smart building toolkit is expanding rapidly, which has led to the introduction of increasingly complex building management systems.

Fortunately, tools are now available that allow security, energy, facilities and ancillary systems, independently of the vendor, technology, or communication protocols, to be integrated together.

What's more, smart real estate isn't solely available to owners of shiny, new offices. Older buildings can also enjoy a smart makeover by retrofitting IoT sensors and employing the data-rich software required to collect new insights. The main thing is that businesses have access to a large supply of data and the kind of analytics tooling that can bring everything together to give building owners and facility managers a single pane of glass view.

Older buildings can also enjoy a smart makeover by retrofitting IoT sensors and employing the data-rich software required to collect new insights.

SMART COMPONENTS

Although integration is essential if businesses are to get the most out of their smart project, it is still possible to prioritise certain elements. Each of the following individual components of the smart building provides its own rich source of data that businesses can derive insights from, while facilitating processes and enhancing **visitors' experiences within the building:**

1 Smart Access Control

Smart access control systems allow organisations to enrich their current access control approach. These tools deploy cutting-edge software, such as facial recognition tools, to provide secure and contactless access. They can also measure an individual's temperature and support face mask adherence.

2 Facilities Booking

This smart component grants facilities managers a holistic view of space use, providing reports on building usage. It enables building occupants to book a desk, parking lot, or similar facility and allows groups of users to coordinate activities and establish clear rules.

3 Spaces Management

The needs of occupants can change on a daily basis, which is why flexibility is a key smart building offering. Spaces management tools assist landlords by allowing them to offer building services to their tenants in a flexible way, managing different rates, quotes or HVAC schedules in line with the tenant's agreements, and updating these services as needed.

4 Visitor Management

Visitor management tools allow each employee to self-manage his or her guest visits via their mobile app or web portal. Visitors can also register remotely using a web interface or when arriving at the lobby using a kiosk located there.

5 Smart Airing

Improving air quality is another important smart building offering. IoT tools can now collect CO2 and presence sensor data, triggering automatic actions in doors, windows, and ventilation systems based on the measurements and data collected. This function is also key as part of the “new normal,” where it’s still a focus (and responsibility) for business and building owners to mitigate the spread of the virus.

6 Capacity Mearsurment

Being able to measure the number of people located inside a predefined area is becoming increasingly important – particular in terms of post-COVID workplace regulations. Capacity measurement could encompass imaging-based devices, digital signage, or a daily dashboard to measure daily usage.

7 Energy Consumption Monitor

Integrating data inputs from CAFM (maintenance), energy consumption, environmental sensors, occupancy levels, and more will create a rich environment for AI to enhance the sustainability of your building.

BRINGING IT ALL TOGETHER

While the building blocks of your smart ecosystem are all important in their own way, the core components of any smart building management system are those that glue these individual data sources together. These core components will represent the key source of information for you, your business and its key stakeholders.

1 The software integrator

The right software can integrate data collected from a variety of apps and sensors (regardless of vendor) and connect it to your bespoke facilities management requirements. Cleaning, security, engineering, and maintenance can all be monitored and adapted in light of this data, and strategic decisions can be pursued.

2 The app-based solution

With office space demands shifting and more collaboration taking place remotely, it makes sense that many smart building solutions are supported by mobile apps. Through the app, building occupants will be able to select a suitable space to work, link up with other users, and provide feedback on any building issue – all from their mobile phones.

3 A single pane of glass

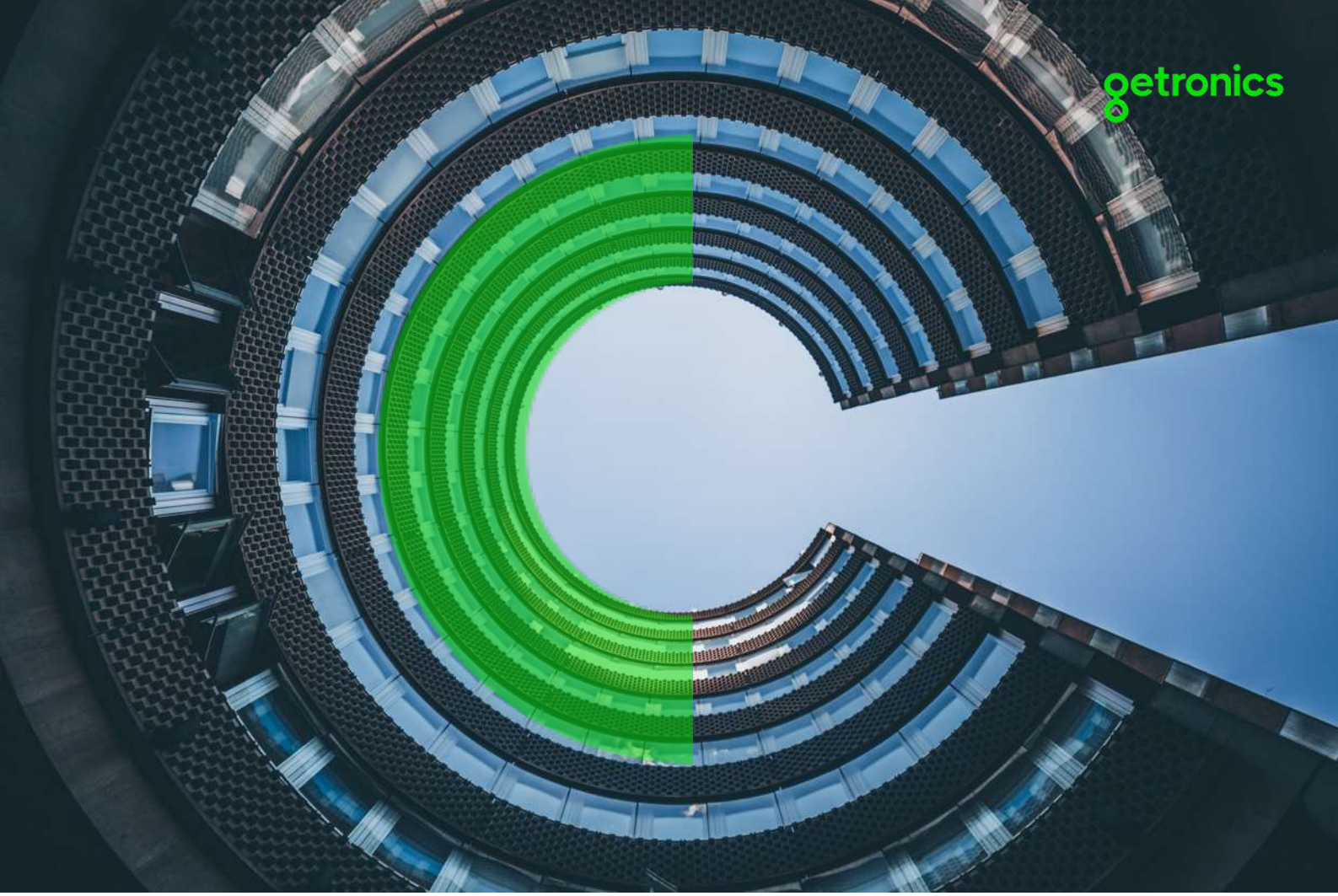
With desktop and mobile solutions forming part of most approaches to smart real estate, it's vital that businesses have access to a single pane of glass – a 'helicopter view' of every element of the building's use.

The many benefits provided by smart buildings are already being enjoyed by some businesses. For example, at Getronics, we recently supported Boustead Projects, a leading real estate solutions provider, to progressively transform its property portfolio and improve the occupant experience. We deployed a modular Smart Solution that was scalable across asset portfolios and geographies, including Smart Access Control, Facilities Booking, HVAC connectivity, Electronic Parking Systems, and Billing system connectivity. You can read more about the project here.

BECOMING SMART

Regardless of your industry, smart buildings can deliver a raft of benefits. Getronics's smart spaces proposition can provide you with innovative, data-driven solutions that transform your workplace into something totally new. Alternatively, we can integrate your existing systems, if applicable, to ensure they deliver efficiency, cost, and sustainability benefits. We are ready to guide you through the process of creating a truly smart building, acting as your global technology partner to transform your real estate portfolio.

We spend up to 90% of our lives in buildings. Isn't it about time we made them as good as they could possibly be?



ABOUT GETRONICS

Getronics is a global ICT integrator with an extensive history that extends over 135 years.

With over 4,000 colleagues across Europe, Asia Pacific, and Latin America, Getronics' vision is to reimagine the digital future, one customer at a time. We do this by leveraging an integrated and secure-by-design portfolio around **Digital Workplace, Business Applications, Smart Spaces, Multi-Cloud, Field & Onsite Support, Service Desk, Network Infrastructure, and Security & Compliance**, to serve our more than 1,400 customers in both public and private sector.

Getronics is the leading member of the Global Workspace Alliance. This unique model provides customers with consistent IT services across 185 countries, with one single point of contact and billing entity yet maintaining the local touch and flexibility of a local partner.

www.getronics.com