Twinview®

Move closer to Net Zero.

We help commercial property owners reduce their carbon footprint, operational costs and improve efficiency by using building technology and advanced digital twins.

www.twinview.com

What is a digital twin and why Twinview?

While there is much debate around the exact definition, there are two key features of every digital twin (as outlined in the Gemini Principles) – firstly, they must be connected to their physical counterpart and, secondly, this connection must be made through real-time data generated via systems or assets.

Digital twins are nothing new, they've existed for decades, but they're now more relevant than ever as organisations are looking to reap the benefits of using this technology across different industries.

On its smallest scale, a digital twin is able to mirror specific materials and chemical reactions while a more ambitious use of a twin could see it monitor the activities of an entire city.

Digital twins link to their physical twins via sensors connected to the systems or assets within it. In the built environment, a fully co-ordinated 3D digital model is created during the construction process. Once a project is completed, a model is handed over to the building owners or developers - often never to be used again.

Twinview allows building owners and operators to utilise this data by providing real-time analytical insights from connected assets, sensors and systems in an operational building.

This can be viewed in a 3D model, on 2D sheets or via a reporting dashboard.

Digital twins allow building operators to monitor performance and predict maintenance work.

Twinview allows building operators to schedule maintenance in accordance with legislation whilst logging all project activity in a golden thread of maintenance data.

In just a few clicks, Twinview can connect real-time IoT data streams to any applicable assets so that you can monitor and optimise asset performance.

They allow us to easily access all of a building's data in one dashboard for ease of use. With Twinview, a user can view their building in 3D whilst picking out what they wish to examine from 2D sheets. These orchestrated relationships provide a greater understanding of your building's performance inside one easy-to-use area.

Twinview allows users to test out various design options, as well as replacing broken assets in real time within the live building so that its operators can make the correct decisions first time. These steps are crucial in saving time, money and removing the room for human error prior to ordering equipment or assets.

Remove the inability for true collaboration in a project. Twinview allows you to upload multiple models within your project so you can view every type from the structural steel model right up until the final, completed building. As the widespread adoption of digital twin technology continues to gather pace, it is becoming increasingly important for those in the built environment to get ahead of the trend and build their processes around their use of a digital twin.

Governments around the world set ambitious Net Zero targets.

Learn how Twinview satisfies companies, investors and governments pursuing systemic solutions to interrelated sustainability problems within the construction sector through property technology.

The year 2020 saw environmental, social and governance (ESG) issues at the forefront of so many discussions, most of which was the ongoing challenges posed by climate change and resource allocation. This presented companies, investors and governments with the opportunity to pursue economic goals that also help to create positive social and environmental impact.

At the recent Sustainable Investing Summit, hosted by investment banking company, Morgan and Stanley, senior executives, institutional investors, academics and policymakers explored ideas on how to efficiently invest in a sustainable world.

Recurring roadblocks emerged; not least the policy and business initiatives to curb climate change.

Not addressing climate change remains one of the biggest threats to the planet.

It is widely believed that governments must make themselves responsible for incentivising the private sector to invest in methods to positively impact climate change. It is also expected that emerging trade policies will begin to embrace carbon tax - a policy for reducing and eventually eliminating the use of fossil fuels whose combustion is destabilizing and destroying our climate.

This pressure also affects corporates, who have a commitment to their investors to demonstrate their ability to manage risks associated with the transition to a low-carbon economy. We believe that this inevitably improves relationships and makes their businesses more appealing to investors.

Property technology such as Twinview can prove to be the first step for many buildings when achieving their carbon emission targets and moving closer to Net Zero. By integrating with existing building systems, capturing and analysing data and through artificial intelligence, Twinview provides information on how spaces are used and function. Through better decision making, Twinview reduces carbon throughout the life cycle of the building, reduces operational costs, improves efficiency and the occupier or tenant experience.

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Reduce your building's carbon footprint.

Buildings are responsible for 39% of global C02 emissions, with 28% generated during operation.

Governments worldwide have begun to set ambitious targets to achieve Net Zero. The UK's target is to acheive net-zero carbon by 2050, with a 68% reduction target by the end of this decade.

Twinview gives your business a complete overview and in-depth data analysis of where you use energy. By integrating with IoT, existing building management systems and using sensors, Twinview displays valuable data to help your business make better decisions.

Reduce your operational costs.

The more you understand where energy is being consumed, the better you can develop approaches to cut that energy cost.

Traditionally, building managers were limited in their ability to control energy use because there was no way to know exactly how a building's power-sourced systems were performing. The best they could do was utilise building management systems to do things like turn the lights off at a certain hour or maintain predetermined room temperatures.

Twinview unlocks access to your building's data to make more informed decisions. By using IoT and sensors, Twinview uses sophisticated artificial intelligence that can identify trends and how often and how spaces function.

By monitoring a building's systems such as lighting, heating and cooling, Twinview can identify patterns in energy use whilst achieving the optimal performance.

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Improve efficiency with Twinview.

As well as live performance data, assets can be controlled from the dashboard. You no longer are required to have the basement room filled with product manuals, and warranty information. Instead, operation and maintenance manuals are stored and updated on Twinview, providing access to all property information quickly, remotely and securely.

Furthermore, users are able create personal dashboards for their own requirements and can include data sources from across multiple projects, giving them access to the information most important to them - this can include energy consumption and open maintenace tickets.

Twinview Field is our mobile app for iOS and Android. Raise tickets and issues directly and use your mobile phone camera to attach photos for your convenience while on site.

To add further value, we can attach QR codes to assets and use the mobile app's QR code scanner to pull up information on an asset,
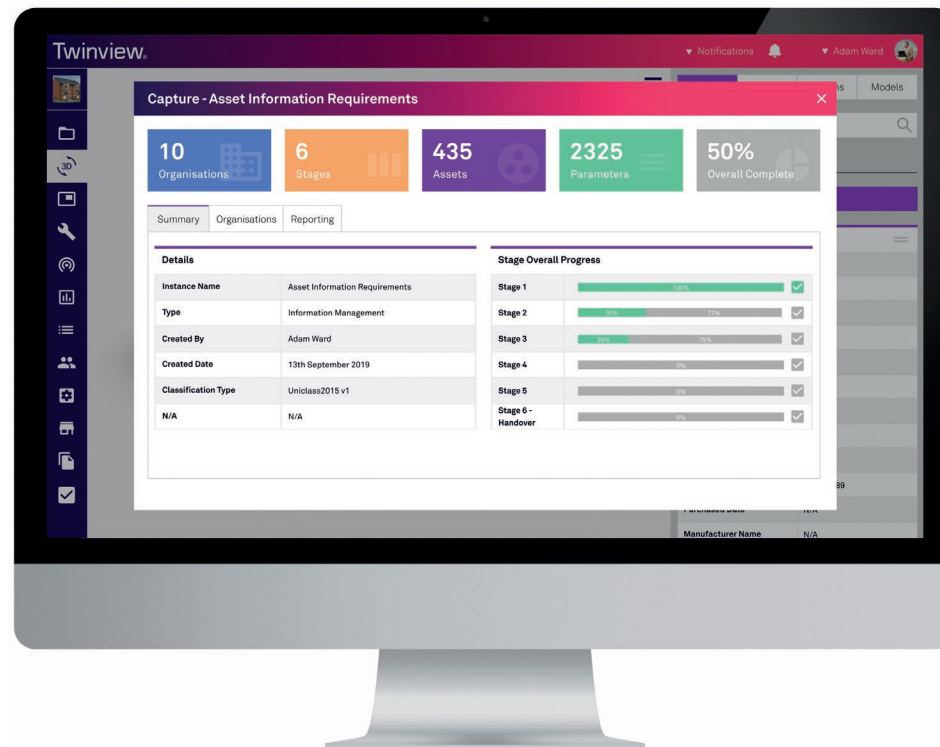
room or piece of equipment, making it easier to identify specific assets from busy spaces.

The recent introduction of Bluetooth Beacon technology allows the app to be 'location aware' when inside a building, automatically filtering to show the assets nearby.

Improve occupier experience.

By using Twinview, you can test changes and new features while proactively troubleshooting before implementing them live, preventing any unwanted outcomes later on.

This practice offers organisations with lessons and opportunities from Twinview that are applied to the building at a later stage and inevitably improves the occupiers experience.

To directly impact tenant experience, Twinview will soon launch SmartView. The Smartview app will grant occupiers and tenants access to a range of benefits from room booking and heating control, to air quality reporting and and lighting control.

To find out more, book a demo today.
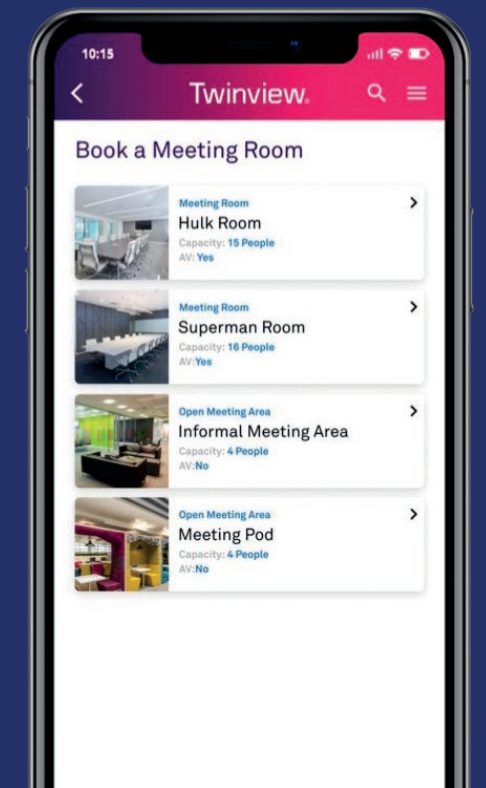
Digital Twin: The mind of a machine

The next largely unchartered territory for the property sector is that of Machine Learning and Artificial Intelligence.

Until now, buildings have not produced sufficient data to allow any data science to be of value. However, with IoT devices and connected digital twins the opportunity is a reality.

As the property sector data lakes grow over the years ahead, we will be able to learn from patterns in how we use buildings and how they perform. With this information, we can predict how spaces are used and how we can optimise their performance.

For example, we will be able to carry out predictive maintenance or reduce energy costs based on anticipated space utilisation.

The artificial intelligence develops as the data grows and patterns emerge:

1. See – updating and learning

2. Think – reasoning and optimising

3. Do – informing and acting

Within buildings this learning provides an increasing level of value:

Warning
An advance warning of a system failure (not a warning when it has failed).

Prediction
A prediction of how a system is going to operate and when parts need to be replaced.

Optimising
Using performance data to maximise life-cycle value and utilisation of resources.

The concept of machine learning and artificial intelligence is becoming increasingly common for consumers. For example, Tesla cars are continuously gathering data which they learn from. The self-driving mode predicts where a an accident may occur, or a child running on the road.

In buildings, scanners at the entrance to buildings are calculating how many people are entering by analysing shapes rather than using cameras.

Buildings already provide huge amounts of data which is not captured. For example, the access control system provides user information, the room booking systems identifies space utilisation whilst the CCTV can movement.

We are very much at the start of this journey in property, however the amount of information we are collecting is growing. Data scientists are beginning to become interested in how buildings operate and academics are starting to interrogate the data.

Much of the current thinking is at a single building level, however as more buildings become connected the data will grow. Connected buildings can then integrate with the smart city taking optimisation to the next level.

In the UK, the government are developing a national digital twin which is establishing standards so that information can be collected consistently over the next 30 years.

In an industry where we are still laying bricks and plastering walls, the reality of machine learning and artificial intelligence might seem a long way away. However, with the growth of data collection and digital twins, this may not be the case.

Learn more about how Twinview can use AI to predict energy usage and more by booking a demo - **visit www.twinview.com for more information.**

Twinview®

Book a demo today.

See live examples of how Twinview is used throughout
commercial buildings.

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