



Clearview
Intelligence



Insight

Data Management Platform



Insight provides a suite of applications and tools in a single platform for device management, data collection and analysis



Insight Data Management Platform



Insight provides a suite of applications and tools in a single platform for device management, data collection and analysis.

Accessed via any modern web browser the platform is a cloud-based subscription service providing secure 24/7 access across multiple devices and operating systems.

The platform approach enables users to access their data in a single place using a familiar set of tools regardless of the data.

Four key features below, along with the Insight core platform functionality, can either be used as individual applications, combined or as a whole package.

Insight Places utilises integrated sensors to provide key data around travel modes and the environment.

Insight Vision provides CCTV and computer vision capabilities for object detection, classification and events.

Insight Journey collects crowdsourced data to provide travel times from origin to destination.

Insight Parking enables data analysis of parking assets for operators and guidance systems for parking users.

Data sets are collected via field-based devices or data feeds, in addition to the types currently available through each application additional data sets can be obtained based on the solution required.

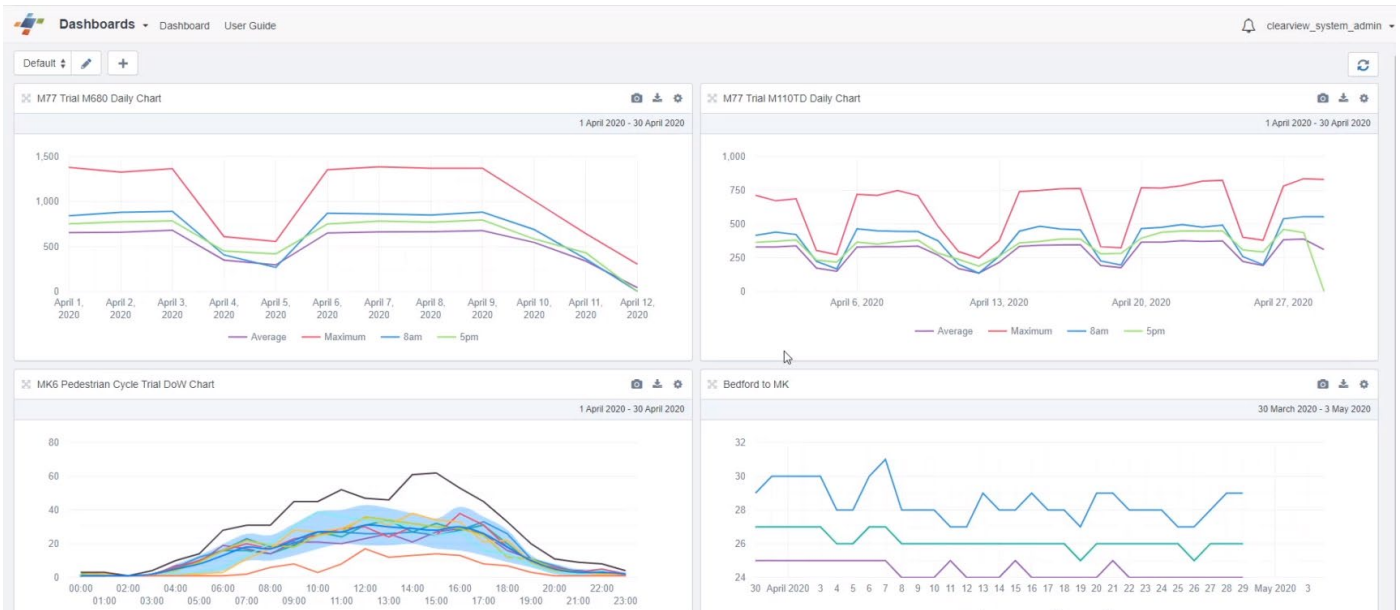
Key Features

- **Integrated** real-time data collection, device monitoring and analytics
- **Focused** applications with a common interface to mix and match for the right solution
- **Comprehensive** set of reporting tools across different data types

Key Benefits

- **Automated** and efficient process for remote sensor data gathering
- **Secure** and easily accessible 24/7 through a standard web browser on different devices
- **Real-time** access anywhere, anytime to inform decision making

Insight Dashboard



Insight

Common Tools

The core system provides key tools to aid the monitoring of devices, reporting, user management and application program interfaces (API).

Monitoring

Devices can be easily monitored and managed using our **secure web-based interface**.

In the event that any problems arise, alerts are raised instantly, which allows the user to deploy maintenance as required.

Comprehensive support for the monitoring and management of **Variable Message Signs** is provided as part of the core application.

Users

Insight includes a **powerful permissions** and roles module which in addition to **providing secure granular access** can also be used to customise elements of the interface by removing certain modules. This way a user is only presented with the information they need to perform their tasks and within the constraints of the locations they need to monitor.

Analytics

In line with Insight's focus on **ease of use**, reports and dashboards are easily configurable, flexible and customisable. Users can create new reports or modify existing ones and present them in a chart and table format. Reports can be generated in a pivot table which allows users to group by aggregate rows and columns and highlight variation data using conditional formatting. An **automated report scheduler** runs reports according to a time frame set by the user.

Interface

Sharing your data with other systems is easily achieved using the Insight API that covers all applications. An online documentation system enables developers to not just view calls and responses but to also test the API in their browser. Data is delivered in the industry standard formats of XML and JSON in a simple and clear structure.

Insight Places

Safer, Greener, Smarter Places

As cities, towns and villages continue to grow, so do the challenges related to mobility, population and the environment. Insight Places from Clearview Intelligence is a centralised data collection, monitoring and analysis hub designed to provide authorities with the information required to make accurate data-driven decisions. The platform collects key data around people, transport and the environment through integrated sensors.



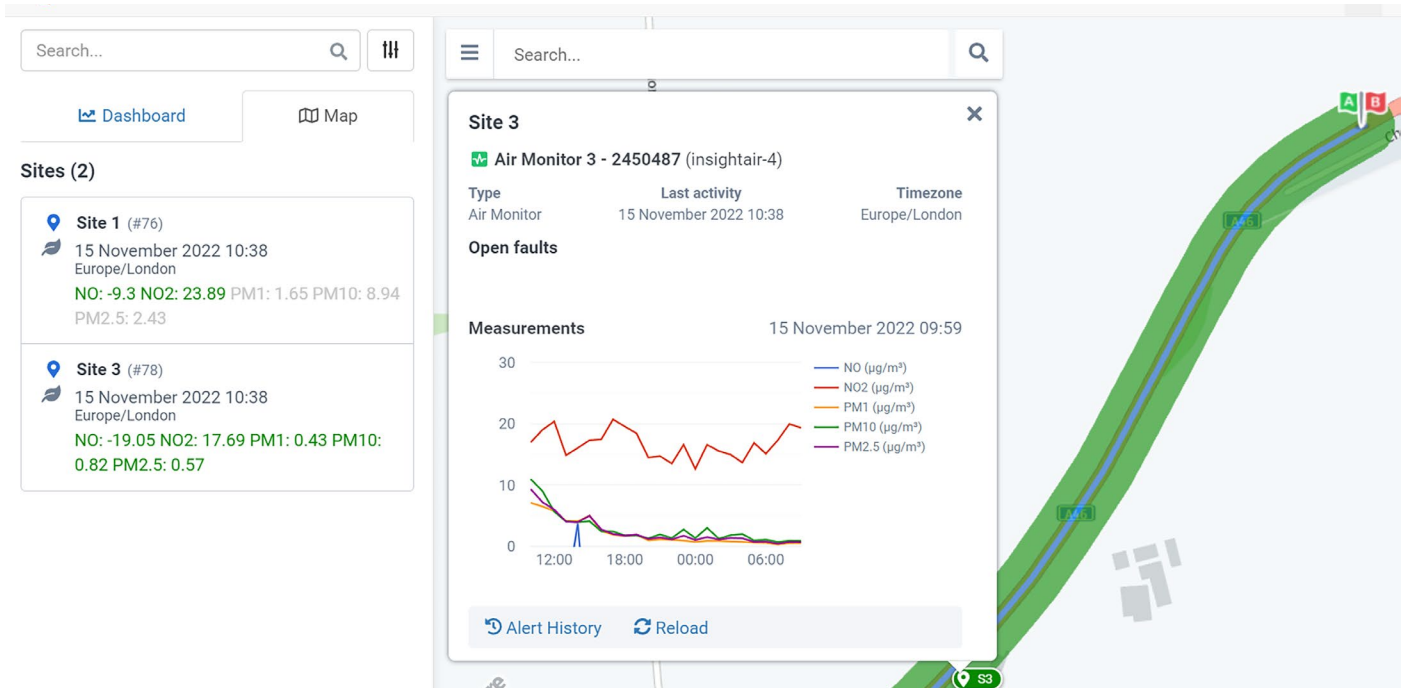
Environment

Cleaner Places

Air quality is a critical aspect of creating cleaner places and easy access to data on particulates and gases in the air is a key enabler. Utilising integrated air quality sensors data is available through the reporting tools and in the environmental dashboards.

The environmental dashboard provides the ability to visualise the data onto maps using dynamically created heatmaps based on user configurable thresholds.

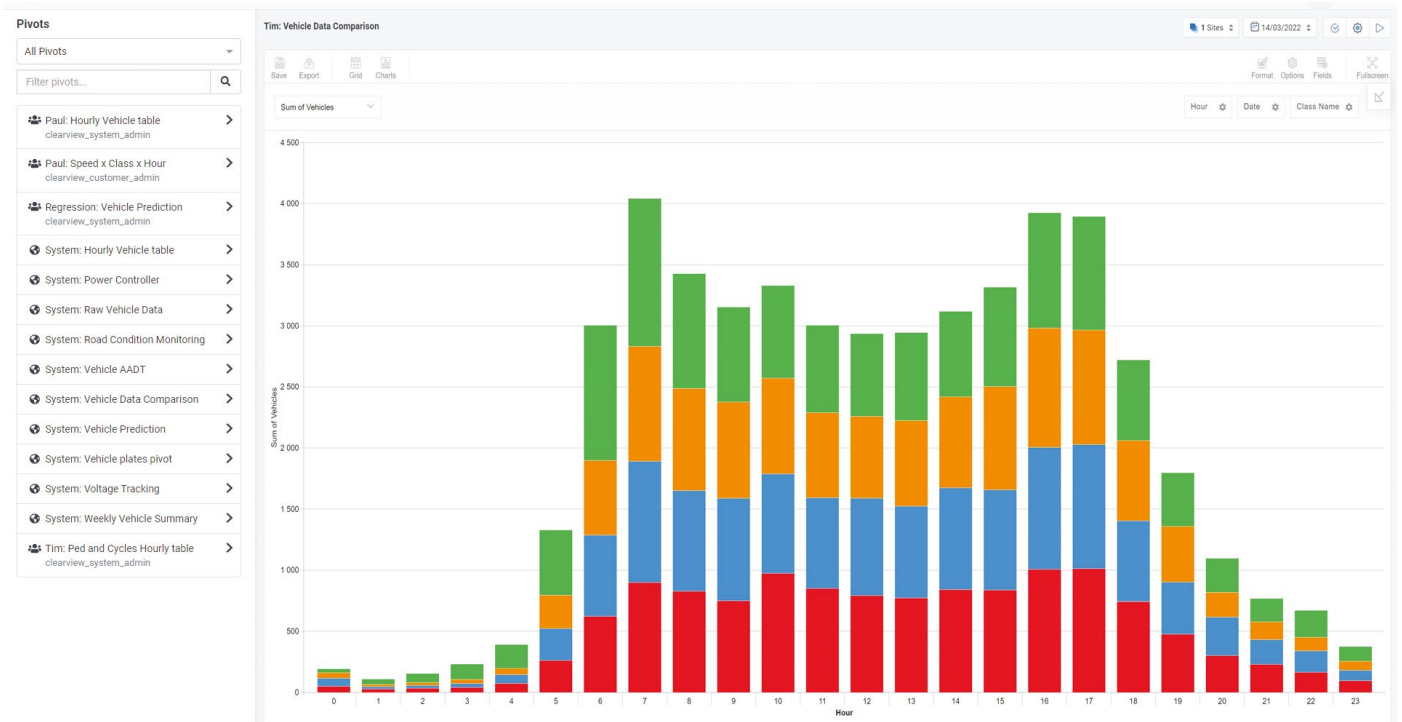
Devices



Safer Places

Non-invasive road condition sensors are integrated into Insight Places and provide data on surface condition (dry, damp, wet, snow, ice), surface and air temperature, humidity, friction coefficient and grip rating. This data can help to create safer places by providing notice of deteriorating road conditions and informing drivers through data feeds to 3rd party systems or direct to Variable Message Signs (VMS) integrated into Insight.

Reports



Count and Classification

Real-time pedestrian, bicycle, vehicle count and classification data can be obtained from multiple types of integrated devices including Insight Vision AI solutions.

Full device status monitoring, alert, data collection and quality tools are provided alongside comprehensive reporting capabilities which generate custom reports and charts.

Specific times, such as peak rush hour, can be monitored to show **peak time data**. Data validation will compare incoming information against historical records to highlight abnormal or unusual data.

For power users there are many ways to customise the reports and charts as well as an **integrated pivot table generator** for more complex analysis.

Data can be displayed on custom dashboards shared via an API or exported as CSV or Excel Format.

Key Features

- Supports multiple data sets based on geographical area
- Integrated dashboards, reports, API's and heatmaps for simple or complex analysis
- Integrated sensors with status monitoring and alerts

Key Benefits

- Utilising multiple data sets provides a more complete picture of a place for analysis
- Multiple analytical tools that cater for a range of abilities and styles provide information to a broader audience
- Single integrated system for data collection and analysis enables a better understanding of data quality

Insight Vision

Computer Vision

Insight Vision provides computer vision and CCTV capabilities for object detection, recognition, classification and events. It has the capability of analysing video and transforming information into intelligent data which can help the user in decision-making.

Insight Vision uses an advanced AI 'engine' to analyse video images and identify objects traveling along a route. The resulting data is seamlessly relayed into the Clearview Intelligence data management platform for both real-time monitoring and historical analysis, facilitating informed decision-making.

Deployment Options, Object Detection and Recognition

Insight Vision provides two methods of object detection and recognition:

- **Insight AI Vision** - Streams video from a camera into Insight and can utilise existing camera assets where the specification is suitable.
- **Insight AI Edge** - Streams data from an edge video processor and camera into Insight, supporting up to 4 cameras per edge device.

Both will analyse the video images in real-time and generate data sets for use with Insight reporting tools. Based on project requirements Insight Vision can be trained for different types of object detection and recognition to meet the needs of a particular solution.

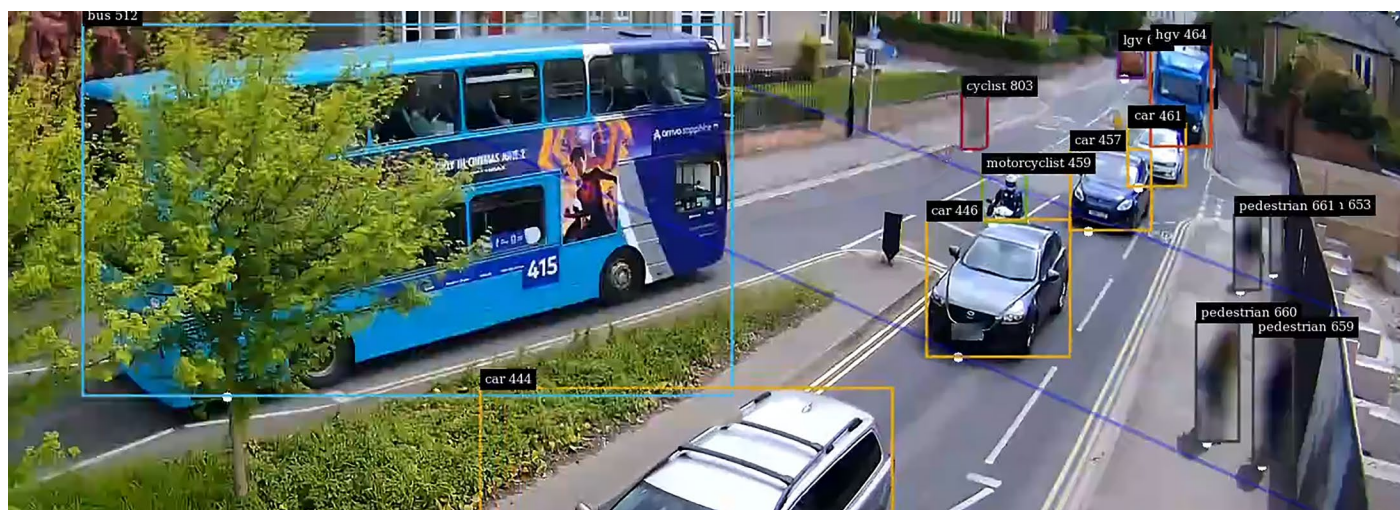
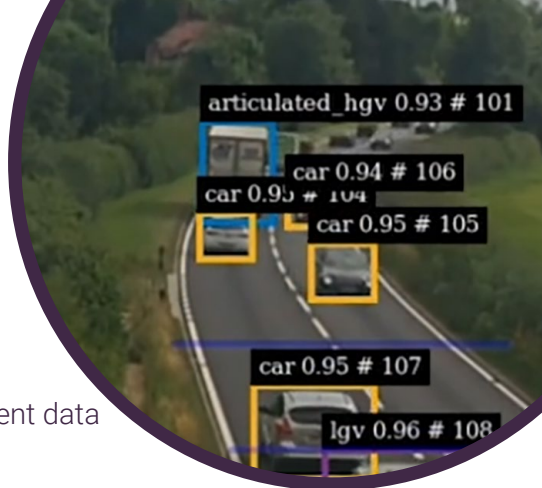
Class Scheme

Data sets are available for Count, Gap, Speed, Lane and Direction as well as multi-modal travel for:

- Pedestrians/People
- Cyclists
- Motorcyclists
- Car
- LGV
- HGV
- Articulated HGV
- Bus or Coach

Each detected object (vehicle/person) creates a separate record (often referred to as Vehicle by Vehicle) and is in the same MQTT format as our latest Connex traffic counters.

A single Insight Vision device can track and analyse several hundred 'objects' at any point in time, so is suitable for even the busiest locations where vehicles, cyclists and pedestrians are present. The Insight Vision device can accurately detect both approaching and receding 'objects' across up to 8 lanes.



Insight Vision

Incident Detection Events

- Stopped Vehicles
- Slowdown and queue build up
- Wrong way driving
- Pedestrian detection
- Poor visibility

Recognition and Accuracy

Insight Vision offers adaptable object detection under different lighting, ensuring accurate counts of approaching and receding objects, even at night.

Licence Plate Recognition

Insight Vision includes the ability to capture licence plates and analyse or export using Insight's Pivot Reports. Licence Plate data is available in encrypted and raw format dependent upon the operators' requirements and GDPR compliance.

Upholding Privacy

Around any video-based solution there may be concerns about invading the privacy of those that are detected, and so the Clearview Insight Vision system can perform real time blurring of faces, people and licence plates (even in low-light conditions) to help to maintain privacy.

CCTV

Whether it is from monitoring live traffic congestion or site surveillance, Insight Vision offers the ability to securely view through ONVIF (Open Network Video Interface Forum) compliant cameras through a mobile or wired connection. Controlling and managing ONVIF compliant cameras can be achieved with ease using a user-friendly interface.

Key Features

- Computer vision solution available as a streaming service or edge solution
- Object detection and classification for data collection, analysis and event generation
- Real-time blurring to ensure privacy and compliance



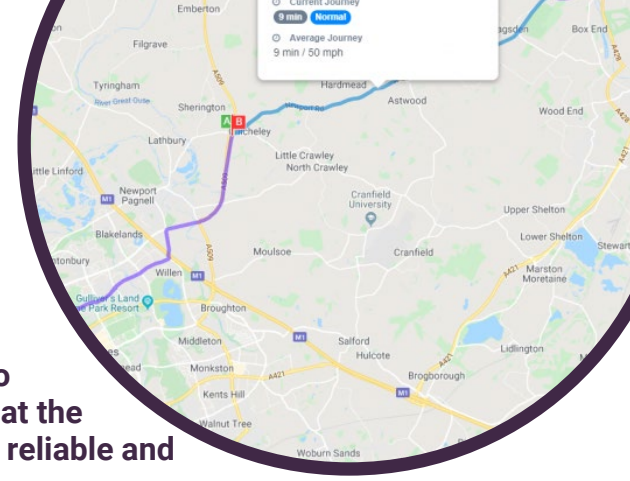
Key Benefits

- **Ability to utilise existing cameras** - reduces capital and startup costs - cost effective
- **Blurring retains privacy** whilst enabling the system to be used for monitoring as well as analytics -maximising infrastructure and cost savings
- **Easy to install** so can be used for temporary as well as permanent installations
- **Sustainability** - operable from a renewable energy source
- **Combined** with other Insight modules can provide a single system for a variety of solutions

Insight Journey

Journey Time Monitoring

Insight Journey is an integrated online application that aids the monitoring, visualisation and analysis of traffic journey times. Journey uses floating car data and is often referred to as crowdsourced data removing the need to deploy sensors at the roadside. The application utilises this vehicle data to deliver reliable and accurate journey time information.



Journey time data can be a critical asset in the road operator's battle to **keep the traffic flowing**, reduce congestion and manage incidents on their road network. This intelligence significantly aids the operator in analysing and **identifying bottlenecks within the network** whilst monitoring roadworks and informing drivers of free flowing traffic or potential congestion/high pollution spots to enable them to make informed decisions on the route they take.

No hardware required

The Insight Journey application is a flexible solution that enables road operators to monitor the flow of traffic on their network and respond accordingly. With **no requirement for roadside hardware** the system can be deployed quickly to manage events, roadworks and associated diversions. It also allows you to keep road users updated with information via Variable Message Signs. The extensive reporting system, dashboards and traffic maps enable both **real-time monitoring** and **historical analysis** to better understand the road network.

Journey Times



Analysis

The Insight Journey application works smarter by providing a set of reporting tools to enable any user to instantly analyse the data and gather intelligence utilising visual aids such as charts and heatmaps. Specific times can also be monitored, such as 8am or 5pm, to show peak time data. Reports are available for speed and duration, either for individual segments or for multiple segments as part of a route and can be scheduled for automatic delivery via email.

Insight Journey

Alerts



Alerts

User configurable alerts enable operators to be notified on the dashboard and via email when the journey time increases/decreases past a configurable trigger value.

Alerts can be configured to utilise an adaptive algorithm that considers historical traffic patterns so that alerts are not triggered by the usual peaks and troughs of a particular route.

Variable Message Sign (VMS)

Support Journey time information can automatically be fed to mobile or permanent VMS to inform drivers of delays ahead. VMS management is integrated, and operators can override the default and automated messages to respond to changing conditions.

Interactive Maps

Journey time information is displayed on maps where individual routes are colour coded based on normal, slow, or stationary traffic speeds.

Service Flexibility

Administrators can create routes to be monitored on-demand. This feature enables data collection for short-term temporary surveys, events or roadworks which can be re-used as required and other routes may run longer-term for analysis and monitoring.

Key Features

- Traffic speed and journey time using crowdsourced data
- Interactive map with user definable colour-coded routes that change based on road speed
- Feed journey time information and text to Variable Message Signs (VMS) from a single interface
- Integrated alert system to identify journey time changes via email and dashboard

Key Benefits

- Dashboard and email alerts notify changes in traffic flow reducing the need for 24x7 monitoring of roadworks for incidents or breakdowns
- No hardware installation minimises set-up cost and road worker exposure
- Highly flexible service enables routes to be implemented and start reporting journey times minutes

Insight Parking



Parking Analysis

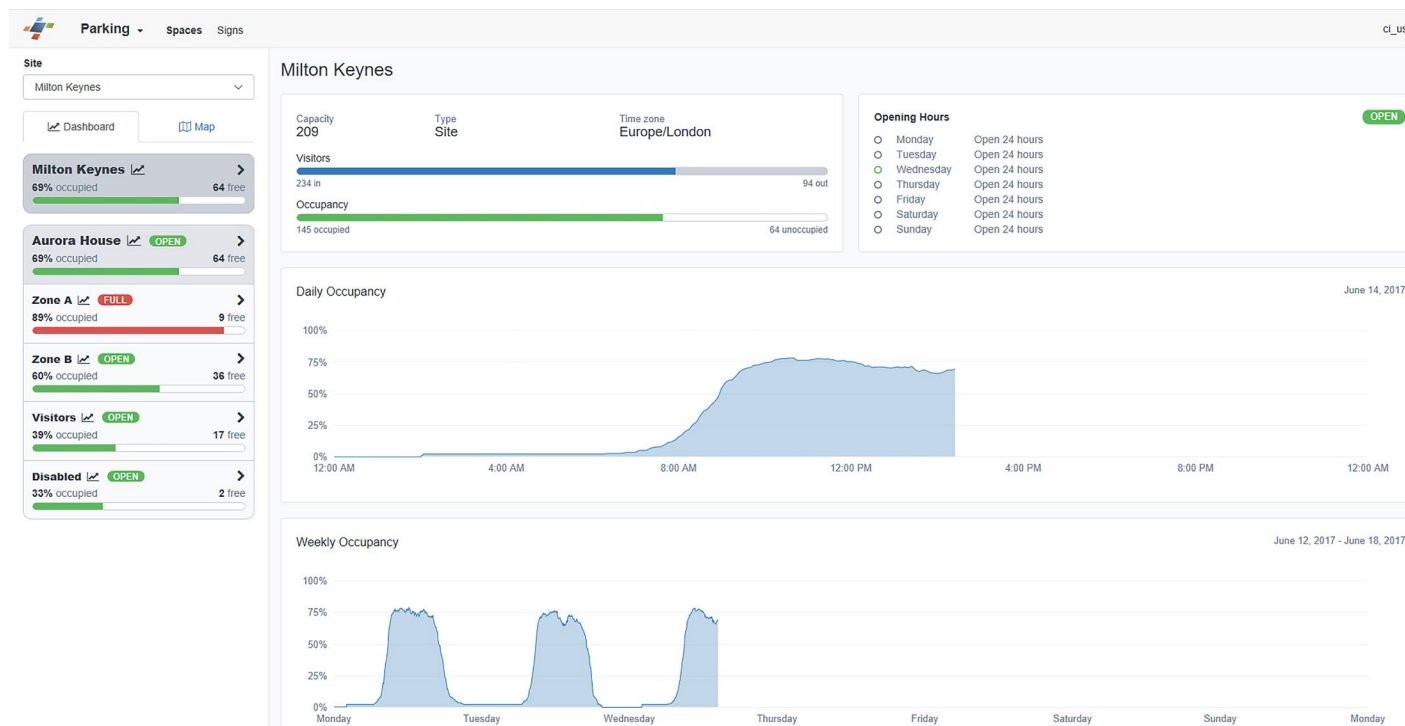
Insight Parking is designed to simplify the management, monitoring and analysis of parking assets. Combined with a range of sensors and signs, Insight Parking provides a complete solution for all types of parking operators and environments.

Insight Parking builds on the core platform by providing a dedicated application for the management, monitoring and **reporting of parking assets**. Developed to meet the needs of operators in all sectors with a suite of tools designed to maximise workflows and usability.

Real-time dashboards **update instantly on receipt of data** from sensors and signs ensuring that information presented is always up to date, enabling informed decisions to be made.

Designed to handle different operational roles across a multitude of locations, access to key functions and visibility of assets is controlled through a powerful permissions and roles module.

Parking Occupancy



Insight Parking

Parking Analysis

Reports - Template Viewer Template Creator Reports Pivots Saved User Guide oUser

Parking Sites Reports 09/01/2023 - 15/01/2023

Template: Daily Occupancy Report

Groups: Zones: Zone A (Europe/London), Zone B (Europe/London) Capacity: 179

Groups:
 Milton Keynes [3]
 Aurora House [C]
 Zone A [Z]
 Zone B [Z]
 Visitors [Z]
 Disabled [Z]
 Reserved [Z]
 Camera [3]
 Demonstration [3]

Report Title

Start Date: 09/01/2023
End Date: 15/01/2023
Interval: 1 hour
View Report

| Time of Day | Mon, 9 Jan 2023 | | Tue, 10 Jan 2023 | | Wed, 11 Jan 2023 | | Thu, 12 Jan 2023 | | Fri, 13 Jan 2023 | | Sat, 14 Jan 2023 | | Sun, 15 Jan 2023 | | Average | |
|-------------|-----------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|------------------|-------------|-----------|-------------|
| | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % | Occupancy | Occupancy % |
| 00:00 | 3 | 1.68% | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 1 | 0.80% |
| 01:00 | 3 | 1.68% | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 1 | 0.80% |
| 02:00 | 3 | 1.68% | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 1 | 0.80% |
| 03:00 | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% |
| 04:00 | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% |
| 05:00 | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% |
| 06:00 | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% | 2 | 1.12% |
| 07:00 | 3 | 1.68% | 3 | 1.68% | 3 | 1.68% | 5 | 2.79% | 3 | 1.68% | 2 | 1.12% | 2 | 1.12% | 3 | 1.68% |
| 08:00 | 12 | 6.70% | 20 | 11.17% | 7 | 3.91% | 16 | 8.94% | 11 | 6.15% | 22 | 12.29% | 2 | 1.12% | 13 | 7.18% |
| 09:00 | 55 | 30.73% | 62 | 34.64% | 41 | 22.91% | 76 | 42.46% | 49 | 27.37% | 60 | 33.52% | 8 | 4.47% | 50 | 28.01% |
| 10:00 | 72 | 40.22% | 88 | 49.16% | 56 | 31.28% | 102 | 56.98% | 48 | 26.82% | 65 | 36.31% | 16 | 8.94% | 64 | 35.67% |
| 11:00 | 73 | 40.78% | 91 | 50.84% | 58 | 32.40% | 107 | 59.78% | 48 | 26.82% | 57 | 31.84% | 47 | 26.28% | 69 | 38.99% |
| 12:00 | 71 | 39.66% | 88 | 49.16% | 58 | 32.40% | 107 | 59.78% | 49 | 27.37% | 45 | 25.14% | 116 | 64.80% | 76 | 42.62% |
| 13:00 | 70 | 39.11% | 86 | 48.04% | 59 | 32.96% | 96 | 53.63% | 49 | 27.37% | 28 | 15.64% | 116 | 64.80% | 72 | 40.22% |
| 14:00 | 69 | 38.55% | 86 | 48.04% | 57 | 31.84% | 102 | 56.98% | 49 | 27.37% | 13 | 7.26% | 46 | 25.70% | 60 | 33.68% |
| 15:00 | 67 | 37.43% | 86 | 48.04% | 55 | 30.73% | 103 | 57.54% | 41 | 22.91% | 4 | 2.23% | 9 | 5.03% | 52 | 29.13% |
| 16:00 | 65 | 36.31% | 75 | 41.90% | 44 | 24.56% | 86 | 48.04% | 35 | 19.55% | 3 | 1.68% | 4 | 2.23% | 45 | 24.90% |
| 17:00 | 35 | 19.55% | 49 | 27.37% | 29 | 16.20% | 44 | 24.56% | 28 | 15.64% | 3 | 1.68% | 4 | 2.23% | 27 | 15.32% |
| 18:00 | 9 | 5.03% | 12 | 6.70% | -1 | -0.56% | 8 | 4.47% | 9 | 5.03% | 2 | 1.12% | 4 | 2.23% | 6 | 3.43% |
| 19:00 | 4 | 2.23% | 6 | 3.35% | -7 | -3.91% | 6 | 3.35% | 7 | 3.91% | 2 | 1.12% | 4 | 2.23% | 3 | 1.76% |
| 20:00 | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 11 | 6.15% | 7 | 3.91% | 2 | 1.12% | 4 | 2.23% | 3 | 1.68% |
| 21:00 | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 4 | 2.23% | 2 | 0.88% |
| 22:00 | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 4 | 2.23% | 2 | 0.88% |
| 23:00 | 3 | 1.68% | 2 | 1.12% | -9 | -5.03% | 2 | 1.12% | 7 | 3.91% | 2 | 1.12% | 4 | 2.23% | 2 | 0.88% |
| Average | 26 | 14.76% | 32 | 18.09% | 18 | 10.17% | 36 | 19.93% | 20 | 10.89% | 14 | 7.98% | 17 | 9.50% | | |

Occupancy

At the heart of Insight Parking is the real-time occupancy system providing car park space availability via status bars, graphs, VMS reports and APIs.

Vehicle movements in and out of parking bays, zones and car parks are delivered by Clearview Intelligence's range of vehicle detection technologies.

Guidance

The ability to feed occupancy data and information to **Variable Message Signs (VMS)** provides several benefits to operators and customers. The ability to guide the customer to a parking place reduces the time to find a space providing a better experience and reducing congestion.

The integrated VMS management system enables **dynamic and manual updating of signs** in addition to device and communication monitoring.

Analytics

Insight Parking includes a set of core reports designed to enable quick and easy access to vital parking management data. A simple interface means in a few clicks reports can be generated on screen and exported to Excel in seconds.

Key Features

- Real-time application providing occupancy information for car parks and bays
- Dynamic and manual operation of Variable Messaging Signs
- Comprehensive set of web reports provide instant access to important data and export to Excel for further analysis

Key Benefits

- Event driven system ensures that key decisions can be made with the latest information available
- Modular software and hardware solution provides multiple options to meet business needs and budgets
- Designed for usability and multiple operational roles – aids in reducing the time spent managing assets, people, speed and wind direction



Want to know more?

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