

Preserving history through a modern approach to building management

On behalf of Australia's largest public museum organisation, CIM has been Museums Victoria's building analytics and technology partners since 2016.

Across four sites including Melbourne Museum, Scienceworks, Immigration Museum and their Moreland Annexe storage facility, CIM's innovative PEAK Platform is helping to embed a modern approach to building management.



Visibility

See a uniform data set across all buildings



Control

Improve operational decisions based on the facts



Transparency

Understand the impact of inefficiencies in building management



Accountability

Empower all stakeholders to be more visible and productive



Challenge

Museums Victoria operates a culturally significant portfolio that connects two million annual visitors to the past, present and future.

To optimise the four sites within their portfolio, Museums Victoria sought a building analytics and technology provider to:

- **Preservation of Collection Items:** Many of the 17 million collection items date back hundreds, thousands and even billions of years and are incredibly sensitive to temperature and relative humidity fluctuations.
- **Create a Collaborative Operations Team:** A lack of transparency and visibility of information slowed decision making and operational efficiency.
- **Optimise Maintenance Expenditure:** Without access to data, maintaining equipment performance relied on third-party assistance to resolve faults.
- **Reduce Energy Use & Carbon Emissions:** Museums rely heavily on building management systems to control temperature and humidity levels. This leads to high energy usage and carbon emissions.

Adding to the project's complexity was the size and scale of the overall floor space totalling more than 96,000m² across the four sites. To protect items located within certain areas of the building, Museums Victoria needed to manage humidity and temperature on a zone by zone basis. With the ideal preservation temperature range set below the optimal human set-point range, protection strategies often work against measures to balance existing thermal comfort and energy reduction targets.



“ With history, art and culture at the fingertips of many thousands of viewers each year, operating large cultural centres where you have delicate collection items requiring extreme care can be challenging. Museums Victoria required a building analytics and technology partner to optimise operations and protect collection items so that we could focus more of our time on providing amazing customer experiences. ”

Sean Langenberg, Building Engineer, Museums Victoria

Solution

Museums Victoria's initiative to leverage CIM's PEAK Platform allowed them to optimise their building performance. Their technology-focused approach to building management facilitated greater temperature and humidity control, visibility of information, and accountability of workflows. This approach also helped align stakeholder objectives through open communication and transparency of decision-making.

In addition, CIM's technical engineering team designed an innovative humidity tracker for the PEAK Platform that would allow extra control and visibility over the performance of their equipment.



Maintaining Operations During COVID-19

Through multiple lockdowns, Museums Victoria and CIM have worked collaboratively to preserve collection items and improve efficiencies. With the added complexity of managing the building from a remote location, the PEAK Platform and CIM's technical engineering support have provided the onsite team with data-driven insights and asset control strategies. This collaborative approach has helped maintain consistent temperature and humidity levels throughout these challenging times.

To prepare for reopening, Museums Victoria and CIM combined to ensure the health and safety of patrons. The PEAK Platform was again used to optimise air quality, ventilation and temperature control.

Results

Since 2016, Museums Victoria has used CIM's PEAK Platform across four sites within their portfolio, including:

- ✓ **Melbourne Museum**
- ✓ **Scienceworks**
- ✓ **Immigration Museum**
- ✓ **Moreland Annexe Storage Facility**

“ CIM has gone above and beyond to improve the performance of our portfolio. While these statistical reductions in energy use were fantastic, the differentiator for us was the benefits that you can't see. The PEAK Platform has empowered our team to deliver remarkable results in customer experience.

Sean Langenberg, Building Engineer
Museums Victoria



KEY STATISTICS



Four sites 95,600m²



5864 data points



621 major equipment monitored

Below is an outline of how the PEAK Platform has helped Museums Victoria overcome their challenges and maintain performance.

SITE	ACHIEVEMENTS
Preserve Collection Items	<ul style="list-style-type: none"> ✓ Minimised item degradation through managed temperature and humidity control. ✓ Established relative humidity scores to assess conditions. ✓ Balanced space conditions against adverse impacts to energy consumption.
Create a Collaborative Operations Team	<ul style="list-style-type: none"> ✓ Increased productivity by improving transparency of work orders to prioritise what matters most. ✓ Empowered onsite teams through openly communicating resolution strategies. ✓ Streamlined workflow via PEAK Actions.
Optimise Maintenance Expenditure	<ul style="list-style-type: none"> ✓ Supported FMs by facilitating greater transparency and accountability in monthly meetings. ✓ It enabled portfolio tracking to align actions and record outcomes. ✓ PEAK Actions workflow automated detection of maintenance issues and allocated actions to appropriate FMs. ✓ It reduced contractor call-out costs. ✓ Peak performing assets helped prolong the equipment lifecycle.
Reduce Energy & Carbon	<ul style="list-style-type: none"> ✓ Peak performing HVAC equipment achieved greater energy efficiency. ✓ Identified seasonal demand opportunities to utilise economy cycles to improve natural ventilation and cut costs.



Measuring Success

Using data and technology to improve operational efficiency, Museums Victoria has benefited from a modern approach to building management.

The PEAK Platform has helped drive long-term benefits that include:

- ✓ **Collaboration:** CIM's technical engineering support team worked closely with Museums Victoria to help them align the objectives of each team. The PEAK Platform then provided complete visibility and transparency over workflows to optimise the building's performance.
- ✓ **Customer experience:** The PEAK Platform provided precise temperature zone control to balance preservation needs with customer satisfaction. Success was reflected through high thermal comfort and humidity scores.
- ✓ **Data-driven decision making:** With data gathered in near real-time, the PEAK Platform gave stakeholders deeper insights into the building's performance, facilitating greater asset control.
- ✓ **Empowered Operations Team:** The PEAK platform provided site managers with actionable insights. Doing so helped embed a proactive maintenance approach that would reduce wastage over time and optimise capital planning.
- ✓ **Sustainability:** Museums Victoria has recognised a step-change in their sustainability targets. By optimising equipment performance, they have reduced wastage, CO2 emissions and energy usage.

Key Performance Outcomes

Across the Museums Victoria Portfolio, CIM has helped Museums Victoria save **19.3GWH** of electricity as of July 2021. That is the equivalent of:



2.8

Wind Turbines running for one year



31,174

Oil barrels consumed



6750 tonnes

Coal burned

ABOUT CIM

CIM's award-winning PEAK platform is a SaaS-based technology that integrates building analytics, artificial intelligence and technical engineering support to improve efficiency, sustainability and comfort across sites and property portfolios.

- ✓ Simplifies and accelerates the end-to-end process of fault detection, diagnosis and problem resolution
- ✓ Automatically collects and monitors live building data, and leverages algorithms to pinpoint, highlight and prioritise inefficiencies
- ✓ Facilitates a collaborative workflow with stakeholders to quickly resolve issues
- ✓ Provides visibility and insight to optimise site and portfolio performance.

We look forward to hearing from you.

CONTACT

APAC: +61 (0) 2 8971 4066

EMEA: +353 (0) 1 254 8549

smarterbuildings@cim.io

cim.io

