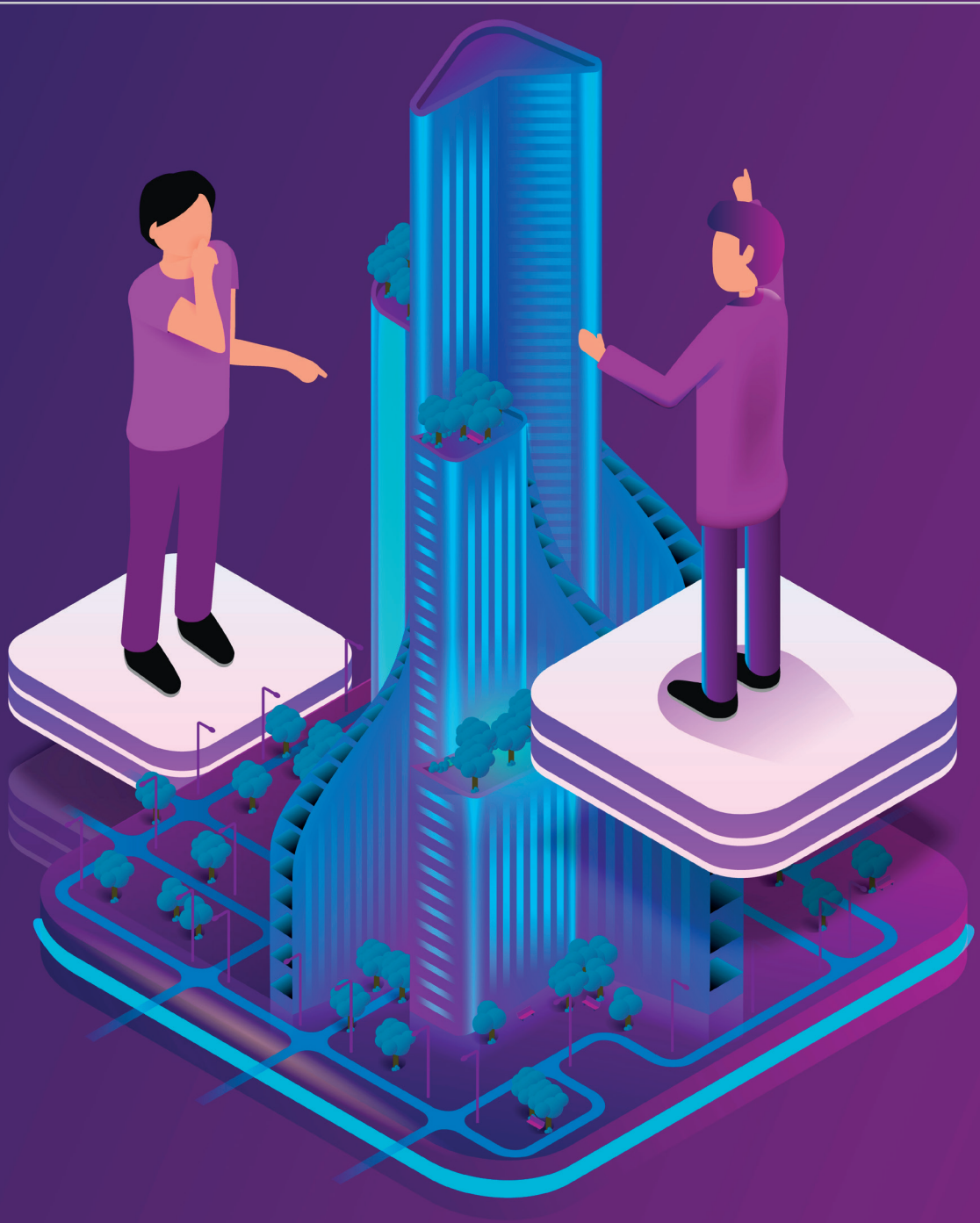
# New industry standard enables digital facilities management

By TK Wang, VBIS



Facilities managers rely on accurate information for planning and to keep assets running effectively. This includes asset maintenance and compliance records, financials, real-time performance, construction records and safety information; however, this information is typically stored in many places, not consistently structured, hard to find, and is continuously accumulated (Figure 1). This results in time spent finding, collating and recreating information. The ability to better access and operationalise this data allows facilities managers to make better use of information to support facilities management outcomes. To allow practical adoption, the approach must be simple, promote an asset-centric approach, work with existing commercial applications and be open.

Recent developments in proptech have resulted in more technology to gather information, creating more opportunities to derive value from this information to meet strategic and organisational objectives. This strengthens the need for a consistent way to structure and access information to maximise the value creation from the technological advancements.

The development of the Virtual Buildings Information System (VBIS) was funded by the Victorian Government through the Future Industries Fund's Section Growth Program in recognition of being an innovative development that supports the construction and ongoing management of infrastructure.

There are three key objectives of VBIS:

1. to provide an easy way for facilities managers to maximise the use of existing information to support capital and operational planning, performance benchmarking, and contract management
2. to provide a practical pathway for Building Information Modelling (BIM) in facilities management
3. to be easy to adopt in applications that are already in use by facilities managers and all off-the-shelf, commercially available software applications.

## INTRODUCING THE VBIS STANDARD

VBIS is an open standard; it is not a software application. It standardises how assets and asset information are classified, and facilitates a standardised means for commercial applications to

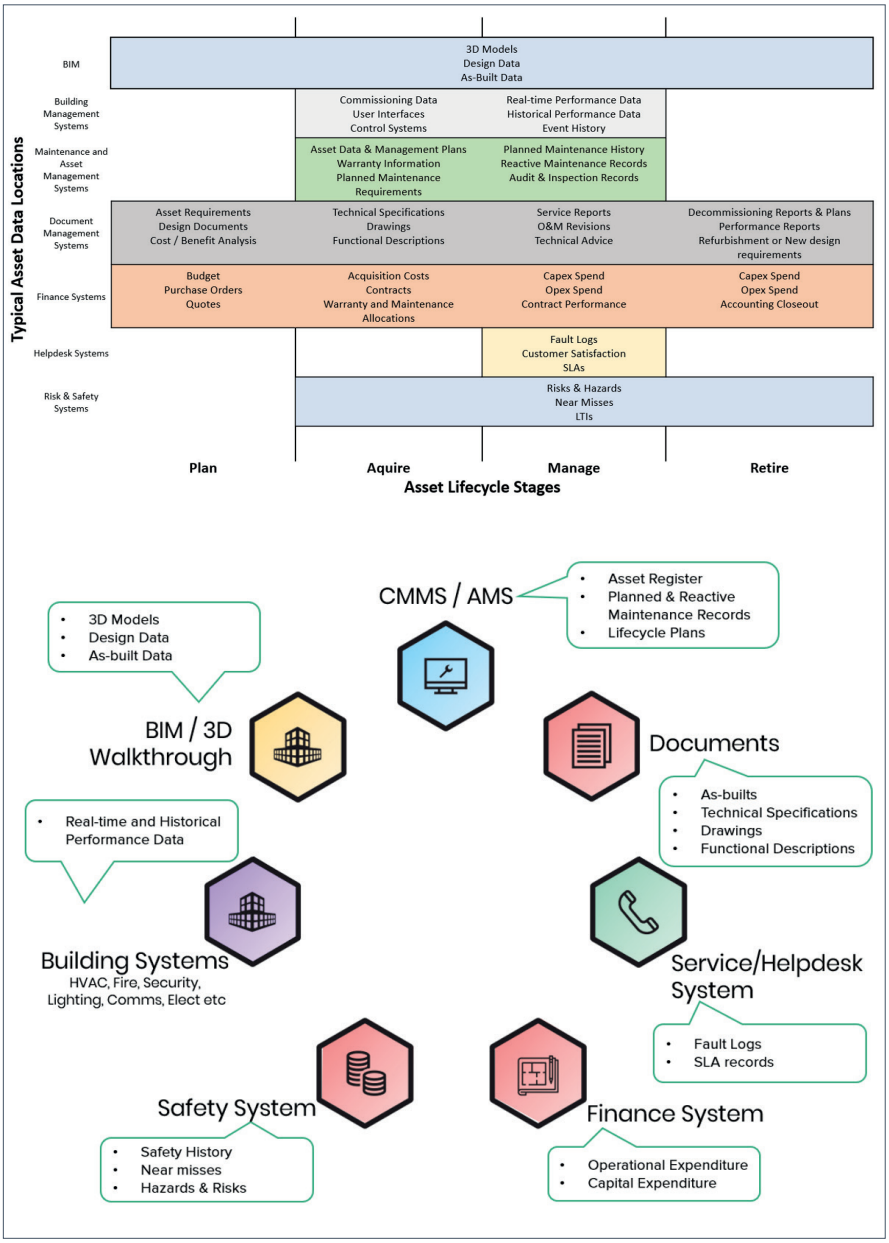



**Figure 1. A snapshot of asset information across the life cycle stages and stored locations**

| Level 1 **Disciplines** | Level 2 **Products** | Level 3 **Sub-Type** | Level 4 **Sub-Sub-Type** |
|---|---|---|---|

**Level 1:** Structure
**Level 2:** External Cladding
**Level 3:** Aluminium Panels
**Level 4:** ALuminium Composite Structure – External Cladding – Aluminium Panels – Aluminium Composite

**ST–EC–AP–AC**

**Level 1:** Mechanical
**Level 2:** Pump
**Level 3:** Centrifugal Axial Split
**Level 4:** Long Coupled Mechanical – Pump – Centrifugal Axial Split – Long Coupled

**ME–Pu–CAS–LC**

**Figure 2. Mechanism to locate the tagged information scattered across applications (VBIS Search Syntax)**

http://application.name.com/pms.php?proj=Project%20Name&sect=search&action=3&dtype=Drawing&tag=ME-Chr-WC-CE

***"Show me all drawings for this Chiller Installed in the ProjectName Project"***

Figure 3. An example of a VBIS Search Syntax information request

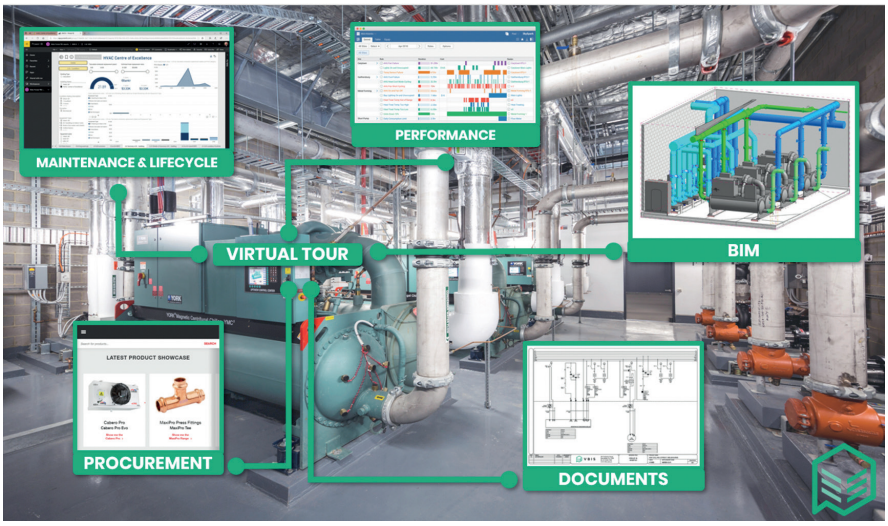



Figure 4. An example of a VBIS-enabled application ecosystem

communicate. This allows users to easily locate information on assets that are in various applications.

VBIS consists of two key components:

1. **Asset classification structure with tagging (VBIS Tag)**
   A unique identifier called a VBIS Tag is provided based on a four-level asset classification structure that details the disciplines, products and product-specific subtypes of assets located within facilities (Figure 2).

   The VBIS Tag can be allocated to various data components as a metatag to associate the data with the asset. This enables facilities operators to identify all scattered data associated with specific assets to bring together a whole-of-life view of an asset. This can be compared to an allocation of a universally recognised ID to specific asset types, which then allows the asset to stamp ownership on its data scatters across various applications.

   VBIS classification structures and tags have been developed for all common asset types that make up the built environment, including structures, services, fittings and furniture.
2. **Mechanism to locate the tagged information scattered across applications (VBIS Search Syntax)**
   This consists of a standardised format to pass the VBIS Tag and other search parameters between applications using a dynamic URL format (Figure 3). The search parameters and the format of the request are defined as part of the VBIS standard. This can be compared to adopting a common language by different applications to communicate and retrieve information tagged with the VBIS Tag. This enables an operator to locate scattered information by clicking on a button in the application that triggers this request to other locations or applications.

## THE VBIS-ENABLED APPLICATION ECOSYSTEM

The VBIS standard applied to commercially available applications facilitates an ecosystem approach to storing and making use of information (Figure 4). The operator now has the freedom to select best-in-breed, function-specific applications for different types of information, with information clearly identified and able to be discovered as required. The search syntax provides the common interoperability language that allows easy integration if the application is changed; it becomes as easy as pointing to the new domain of the new application.

## THE JOURNEY TO DATE

In Australia, VBIS has been endorsed and included in the Victorian Government's Digital Asset Strategy Framework, and the Queensland Government's data and information guideline.

Internationally, VBIS partnered with Brick, where both initiatives have the aligned goal of promoting a consistent, standardised approach to structuring data, gaining better insights but with differing focus areas. Brick, through collaboration with the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) and the US Department of Energy, defines an extensive dictionary of input/output points, and relationships between assets and points. With the VBIS classifications mapped, this provides a comprehensive model that assists with deploying technologies, such as analytics and asset management activities.

The VBIS Enabled program was launched in 2020 to support commercial software vendors to become VBIS-enabled. This supports adopting the standard, providing benefits to both the vendor and facilities manager. It enables a common communication language between commercial applications to enhance interoperability and allow the facilities manager to easily access all information.

Equipment suppliers such as the Reece Group have commenced VBIS tagging their product catalogue. They have tagged 26,000 products to date, and can be searched by VBIS Tag on their website. A number of VBIS-enabled application ecosystems have been deployed to date.

VBIS received the Australian Business Award 2020 in Building Technology, and was a finalist in the Facility Management Association of Australia's FM Industry Awards for Excellence 2020.

## A WAY FORWARD

Content such as the classification tables, support content and videos of ecosystems have been made available on the VBIS website (http://www.vbis.com.au).

VBIS recently announced the services on offer to support organisations. This includes understanding what information is relevant, and how best to set up existing applications or introduce new ones in a roadmap approach. These aim to help organisations to realise the potential of existing information to make well-informed decisions.

**For more information, email info@vbis.com.au.**