



# BUILDING MANAGEMENT SYSTEM CASE STUDY

## ORACLE – THE HELICON BUILDING





# ORACLE - THE HELICON BUILDING CAT B REFURBISHMENT WORKS

## THE CUSTOMER

Oracle Corporation is a multinational computer technology corporation, headquartered in Redwood Shores, California. The company specializes primarily in developing and marketing database software and technology, cloud engineered systems and enterprise software products — particularly its own brands of database management systems. In 2015, Oracle was the second-largest software maker by revenue, after Microsoft.

## PROJECT OVERVIEW

The Helicon Building was built in 1996 and provides 119,000 sq. ft. of offices over first to eight floors, with retail units on the ground floor. The building is located in Moorgate and is bordered by Moorgate to the west, South Place to the south, Dominion Street to the east and Lackington Street to the north

Oracle occupy the fifth, sixth and seventh floors of this building with an area of approximately 55,000 sq ft. Oracle's occupied floors were refurbished to create an aesthetically pleasing environment for their London based staff. The refit included a new reception, open plan office and breakout areas and new meeting and training rooms.

3MSE were employed by the mechanical subcontractor to carry out the design, installation and commissioning of the BMS to allow for automatic control over the following items of plant:

- 145 No. 4-Pipe Fan Coil Units
- 43 No. Underfloor Air Transfer Fans
- 3No. Packaged BACnet AHUs
- VAV and CAV Dampers
- Various Extract Fans
- Utility Metering



## THE SOLUTION

### DESIGN

3MSE supplied and installed a Trend Building Management System with the field equipment controlled by the IQ4 range of controllers. New outstations were installed in the electrical risers on the 5<sup>th</sup>, 6<sup>th</sup> and 7<sup>th</sup> floors to monitor and control the plant on these levels.

Each outstation contains IQ4NC Controllers which are used to communicate with the Fan Coil Units, AHUs, and VAV controllers via BACnet.



3MSE Supplied controllers from the IQEco Range to the fan coil unit manufacturer for factory fitting.

Two fan coil unit networks were installed per floor to minimize traffic and provide a more reliable system.

A new BMS Supervisor PC was installed on the 6<sup>th</sup> Floor and runs Trend's 963 software to give Oracle's staff full control over the system and display temperature logs and alarms.

### INSTALLATION

Our on-site installation teams are fully trained and conversant in the installation of control systems and are fully qualified to the latest regulations.

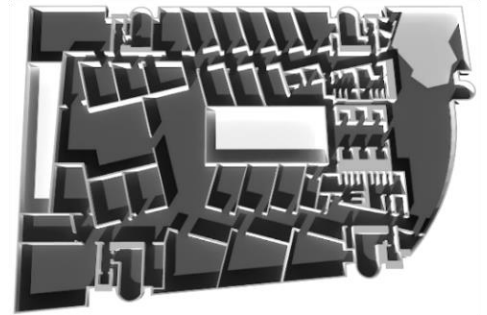
Our management team carefully coordinated our installation works with onsite activities and other trades to ensure that key program dates were met and high standards were maintained.

All installation works were carried out in-line with site specific risk assessments and method statements.

### CO2 CONTROL

CO<sub>2</sub> Levels within all cellular spaces are closely monitored and controlled to maintain a healthy working environment.

Each office and meeting room is equipped with a CO<sub>2</sub> sensor which will operate an air transfer fan within the floor void to maintain the fresh air requirements of the space.



### GRAPHICS

High Quality 3D floorplans for each level were developed in-house as part of the graphics package to give the end user an intuitive overview of the system

### INTEGRATION

High Level interfaces were provided to each of the packaged air handling units to extract detailed information on their operation, status and alarms via BACnet/IP

For the monitoring and control of the VAV Dampers we implemented Belimo's propriety protocol, MP Bus.

The BMS communicates with the bus via a BACnet to MP Bus interface, which allowed us to monitor volumetric flow rates and as well as write Vmin and Vmax values to each damper

