



Upgrades to Legacy Data Centre Aligns Council with City's Sustainability Interests



Design IT.



Build IT.



Monitor IT.



Maintain IT.

The Overview

The city of Nottingham has a lot to be proud of: a world top 1% university, an award-winning transport system and topping the table for Green cities with the city last year reporting the lowest carbon emissions of any of England's largest cities.

Over the last couple of years, 2bm has been engaged in a programme of continual upgrade works to Nottingham City Council's legacy data centre; addressing issues of energy efficiency and power and environmental monitoring to help maintain the city's position at the forefront of sustainability awareness.

Location

Loxley House data centre, Nottingham

The Requirement

Nottingham City Council initially engaged with 2bm with the requirement of updating the existing fire suppression at the facility.

On visiting the site and carrying out a full data centre audit, a Room Report was handed to the client highlighting other areas of attention. The data centre was approaching a decade old, and had recently undergone an extension; however aspects of the room's infrastructure had been overlooked. These included the distribution of power and cooling, monitoring and airflow management.



Nottingham
City Council



The Challenge

It was impossible to gain a holistic view of the room as any form of monitoring had been omitted from the data centre.

The primary cooling system in operation (rear door coolers) were working inefficiently due to the lack of airflow management. The arrangement of the cabinets, a total of 62 server and network racks, meant that air was being recirculated and hot and cold air was mixing due to a lack of blanking off unused rack space. Confidence was also low with the secondary cooling solution, and both of these areas needed to be addressed imminently.

In regards to the existing fire suppression, the size of the room had changed since the room's original design. A room integrity test showed that all ten fire suppression bottles were soon to go out of date and the detection electrical system was in need of being rewired. In addition, in conjunction with the insurance company's requirements, the system would need to be commissioned by 2bm immediately.

As the council's critical operations are 24/7, one of the biggest challenges was to minimize any disruption and of course to avoid downtime.

The Room Report is a valuable asset to any Data Centre Manager. By detailing a set of recommendations, we are now quickly able to meet our objectives in terms of high resilience, sustainability and making an efficient use of space.

Thanks to 2bm, efficiency has been greatly improved at Loxley House, operating costs reduced and industry practices implemented.

- Elizabeth Hawkins, Nottingham City Council

The Solution

An initial in-depth audit of the room was carried out. The information gathered from this was then developed to create a total view of the facility with the objective of communicating immediate 'wins', and understand current operational parameters to establish future needs with regards to space, cooling, power, security and monitoring. Some of the solutions proposed and installed off the back of the Room Report are as follows:

- Installation of the non-intrusive power and environmental monitoring solution the iMeter
- Temperature and humidity sensors
- Water detection with 18m leak sensor cables
- Room integrity test, pressure testing and changing of fire suppression bottles
- Rewiring of fire suppression detection electrical system
- Installation of 600 blanking panels
- VESDA system
- Security cameras
- Full room and under floor void clinical clean
- Commissioning and testing
- O&M documentation
- On-site training of Nottingham City Council staff
- On-going support to assist embedding the updated facility into business as usual

Innovative Approach

Elizabeth Hawkins says, "The iMeter in particular was a welcomed introduction to our data centre. By actively monitoring the distribution of power within the cabinets, whilst highlighting the hotspots around the room, we now have a valued insight into how to distribute the kit in the racks to increase efficiency. This will also help us make informed decisions as to which cabinets are best to house future installations."

The Result

As a result of the work carried out, the Loxley House data centre is now fit for purpose and conforms to, and exceeds, recommended standards.



INNOVATORS IN DATA CENTRE TECHNOLOGY