

**Case Study:**  
**North Yorkshire**  
**County Council**  
**Deploys Prefabricated**  
**Modular Data Centre,**  
**Designed and Built by**  
**Workspace Technology Ltd.**



North Yorkshire County Council located in the town of Northallerton is responsible for providing a wide range of public services including waste, street and parking management as well as planning services to the people of the county. The Council is active at the heart of their local communities, listening to concerns and responding to the needs of the public whilst acting as a champion and spokesperson for North Yorkshire and its people.

The Council's goal is to ensure that North Yorkshire continues to be a thriving county which adapts to a changing world and remains a special place for everyone to live, work and visit.

## The Challenge

The County Council was operating from an aging data centre facility which suffered from a range of issues including cooling inefficiency, ineffective airflow, poor room integrity and structural fire rating issues.

A number of options were considered including upgrading the existing cooling to fresh air free cooling, renovating the existing data centre space and the deployment of a Prefabricated Modular Data Centre within the County Hall Campus.

Throughout the process Workspace Technology's Design Team consulted and advised the Council. Given the inherent challenges and associated risks with the renovation and modernisation of the existing data centre space the Council's final preferred solution was to deploy a Prefabricated Modular Data Centre. This option also had the advantage of allowing the old data centre space to be re-purposed for office use.

## The Solution

### DataCube™ Prefabricated Data Centre



Workspace Technology's industry leading Prefabricated Modular Data Centre solution met with all of the Council's key critical requirements which provided them with a versatile, cost-effective, environmentally friendly solution, that significantly reduced implementation timescales, reduced impact on the local environment and allowed the existing data centre to be sustainably re-purposed.

The Council identified a dilapidated portacabin building within the Northallerton Campus as the site for the new data centre. Demolishing this building provided the opportunity for Workspace Technology to deploy a brand new Prefabricated Modular Data Centre installation delivering a scalable approach whilst eliminating the need for an expensive traditional 'bricks and mortar' building.

## The Benefits

Workspace Technology's Prefabricated Data Centres are ideal where installations are 'static', and ease of serviceability is paramount. The Prefabricated Modular Data Centre was a bespoke solution formed and delivered in two half section buildings, positioned, joined and sealed on-site to form a larger dual aisle data centre facility. In order to meet the County Council's security concerns the prefabricated building was built to FR60 fire rating and SL4 security standards incorporating layers of expamet security mesh, steel plating and fire rated boarding. Following erection, a specialist 25 Year Sarnafil roof membrane was applied offering enhanced weather protection.

The installation was based on Workspace Technology's integrated Prefabricated Modular Data

Centre system fitted with a raised access floor, Freecool® direct fresh air evaporative free air cooling, Novec fire suppression, equipment cabinets, critical and standard power distribution, modular Riello Multi Power modular "hot swap" rack format UPS systems, internal inter-cabinet Category 6 and Fibre Optical cabling. Additional fitout items included secure access control, intruder detection, environmental and DCIM management systems.

The installation was designed to support a total cooling capacity of 60kW N+1 across 16 equipment racks when fully populated. The compact dual aisle arrangement contributed to improved airflow efficiency and reduced the overall data centre footprint.



**Workspace**  
**Technology Limited**  
Technical Prefabricated Building Solutions

The Modular Data Centre was server ready in less than 16 weeks from project commencement, significantly reducing timescales when compared to a bricks and mortar building.

Working in partnership with the County Council's appointed framework contractor William Birch and Align Property Services, Workspace Technology's Design Team provided the specialist data centre skill sets to successfully deliver the solution as a key member of the project team.

## Exceptional PUE Performance

A combination of Freecool® direct evaporative free air cooling and a DX system were deployed in order to provide a 2N solution for the Council.

Freecool® by Workspace Technology is an established industry leading direct fresh air evaporative cooling system that delivers industry leading PUE performance figures of less than 1.15 with annualised PUEs of sub 1.1.

By pairing the Freecool® system with a FläktGroup MultiDenco DMA065 CRAC unit, Workspace Technology was able to deliver enhanced system resilience based on a range of programmable conditions including, primary cooling failure and over temperature events.

## Solution Benefits

- **Server Ready** – The complete installation was fully wired ready, for instant deployment of the Council's servers.
- **Integrated Self-Contained System** – Supported a turnkey installation complete with Cabinets, Cooling, Gas Fire Suppression, UPS and Power Distribution.
- **Energy and Environmentally Efficient** – designed using Workspace Technology's 'EcoDesign' best practice principles to reduce carbon emissions through design and technology. The selection of our industry leading Freecool® evaporative free air-cooling technology leads to annualised PUEs of less than 1.1.

- **Rapid Deployment** – The installation was quick and simple with minimum on-site preparation needed for immediate functionality. This avoided the need to build a traditional bricks and mortar building significantly reducing build costs.

- **Resilient** – The installation offered the Council 2N resilience with dual power feeds and N+1 cooling, modular UPS systems and internal static transfer switches for essential equipment power.

Simon Ward of Unity Partnership commented **"The contribution of Workspace Technology as data centre specialists was considerable, helping guide the Council through the available options."**

**Workspace Technology's prefabricated data solution proved to be an ideal fit addressing many of the Council issues within a single integrated installation.**

**Energy efficiency and the lowest possible PUE ratings were critical requirements. The installation of their Freecool® evaporative free air-cooling technology has delivered upon this essential goal exceeding our expectations".**



Interested in finding out more?

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