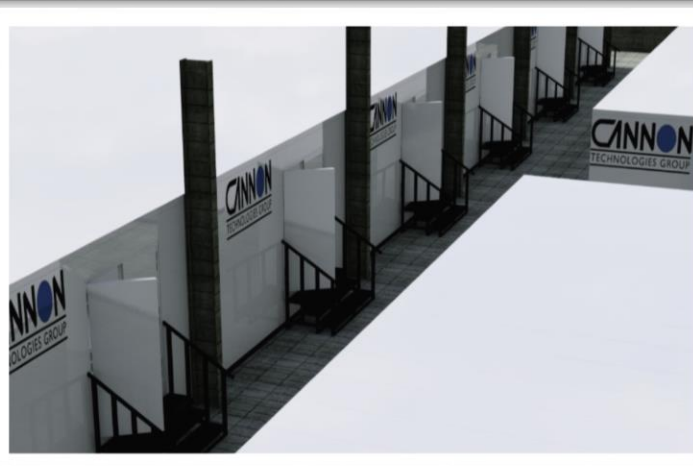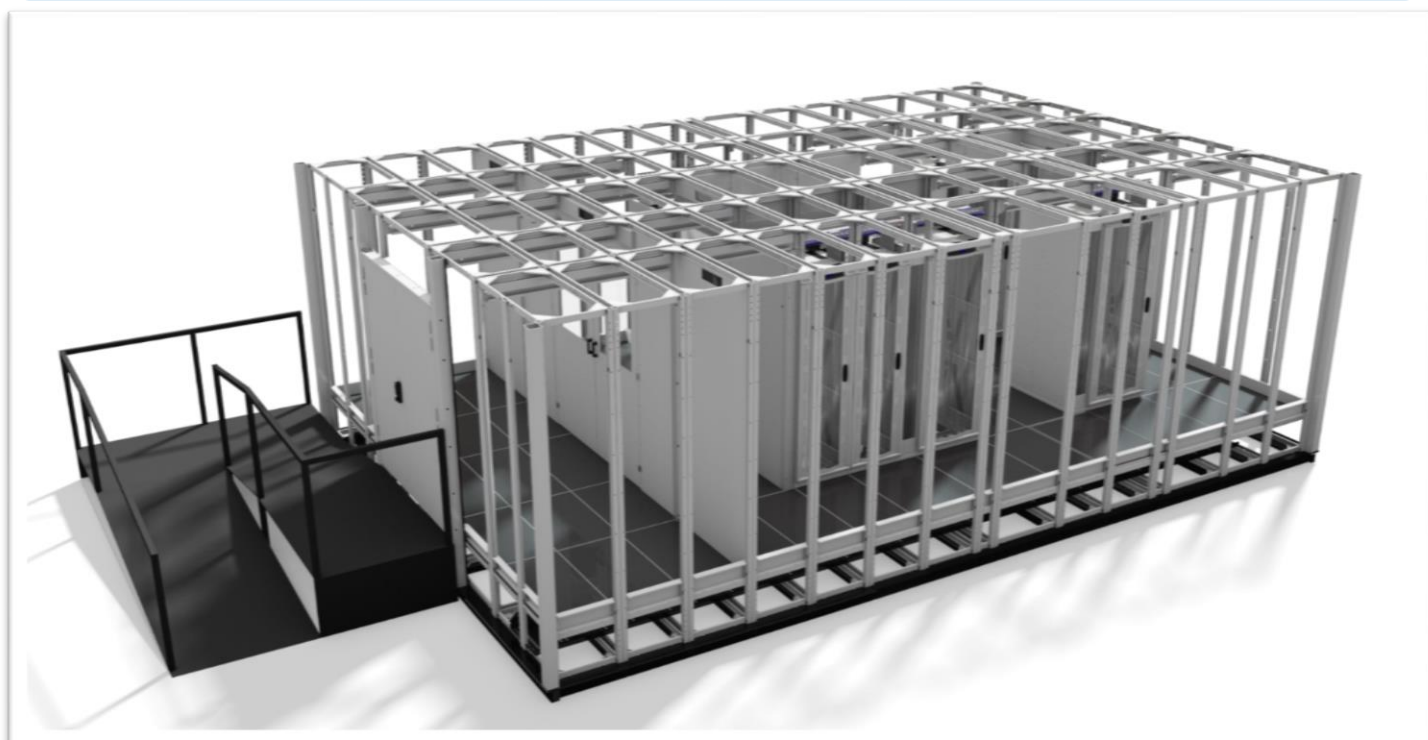# CANNON T4 MODULAR DATA CENTRE HALLS

Halve up-front investment, use a Modular fit out approach

Highly efficient, Low PUE, Scalable system with reduced Capex and Opex
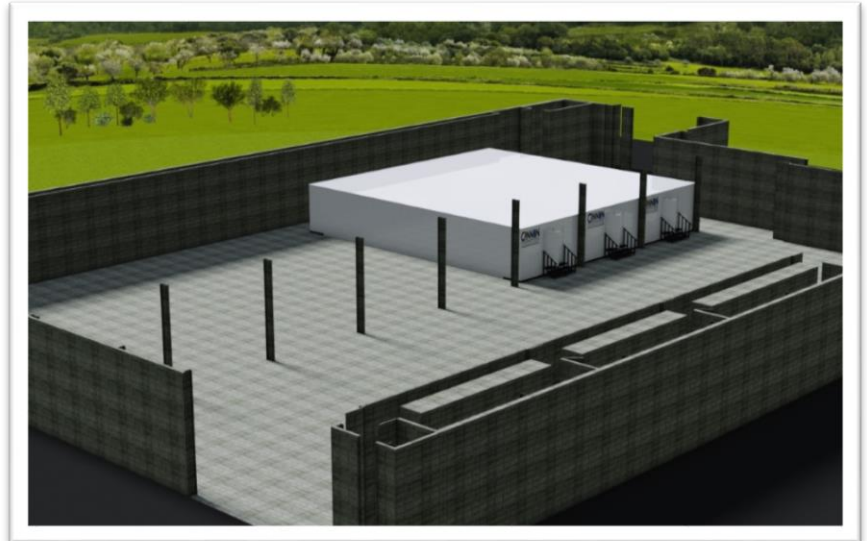

Turnkey solutions available – complete, commissioned and online.

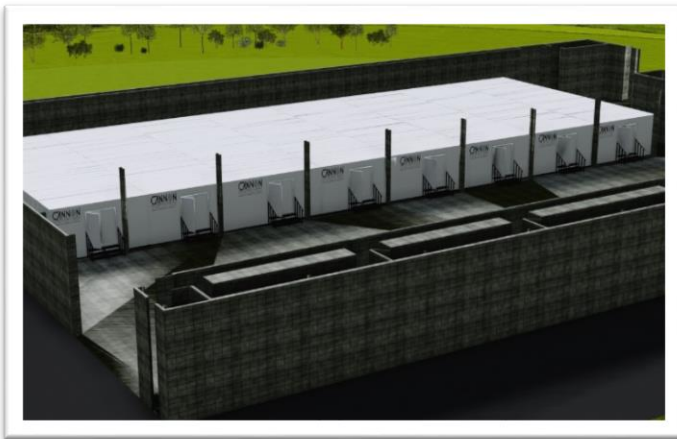# Modular Data Centre Halls:

Dramatically reduce upfront investment when fitting out shell buildings as new, resilient high performance Data Centres.

A unique solution developed by Cannon T4 Data Centre Solutions enables true 'pay as you grow' phased fit out. By using an indoor variant of the Cannon Pre-Engineered system, a Granular Modular Data Centre may be quickly built within a new or suitable pre-existing building.

Quick, Flexible system:

The Cannon system provides pre-fabricated Modular Data Centre halls, which can be of any size and various heights, they are rapidly erected and equipped as a customer's business grows.

Commissioned ready for fit out of IT Equipment by clients or integrators within eight to twelve weeks. The White Space, Aisles, Racks, Power, Cooling, Fire protection, DCiM, Security, CCTV, Cable containment and other needs are included for IT integration readiness.

This cutting edge solution has won multiple international awards worldwide. It provides high levels of physical security as well as leading levels of efficiency and operational resilience. Rating level 1, 2, 3 or 4 (TIA 942) available as required.

Modular Data Centre Halls: Construction

All components are pre made, High Quality, precision, man portable parts.

This simplifies the whole process of fitting out within the shell building, as access through small or difficult access points poses no problem. The components are 'flat packed'.

Transport to sites with difficult access is easy even at altitude.

No cranes or heavy construction equipment whatsoever is required for the build.

The Cannon MDC Halls weigh only 280kg per square meter, (58lb per square foot).

Cabinets can be loaded to 1000kg (2200lb). *Overall average floor loading of a populated MDC hall is <1 ton per square meter (48 x 1 ton loaded cabinets plus MDC frame = 69 metric tons in 75 sq meters).*

Non-Intrusive Deployment:

Only hand, battery operated tools are used during the assembly process, there are no wet trades, cutting or dust, there is no disturbance to occupiers of other facilities within the building, or in the vicinity.

Rapid availability:

Most of the mechanical and electrical infrastructure is also based on pre-made modular systems and hence a complete, commissioned & tested data centre can be available in a few months rather than years.

IT Ready:

Racks / Cabinets, Power Distribution, UPS, Battery systems, Fire Protection, Cooling units – all are quickly installed when the white space is fitted out.

Inside the white space of a Cannon MDC Hall

The Cannon cable and fibre raceway system is built in allowing for simple installation of pre-terminated copper and fibre cabling.

Modular Data Centre Halls: Flexible Layout;

The unique Cannon solution can encompass any floor layout.

The Halls can be deployed in any size to suit the specific requirements of the occupying client be it single or double cabinet rows, cold and hot aisles or open freeform spaces
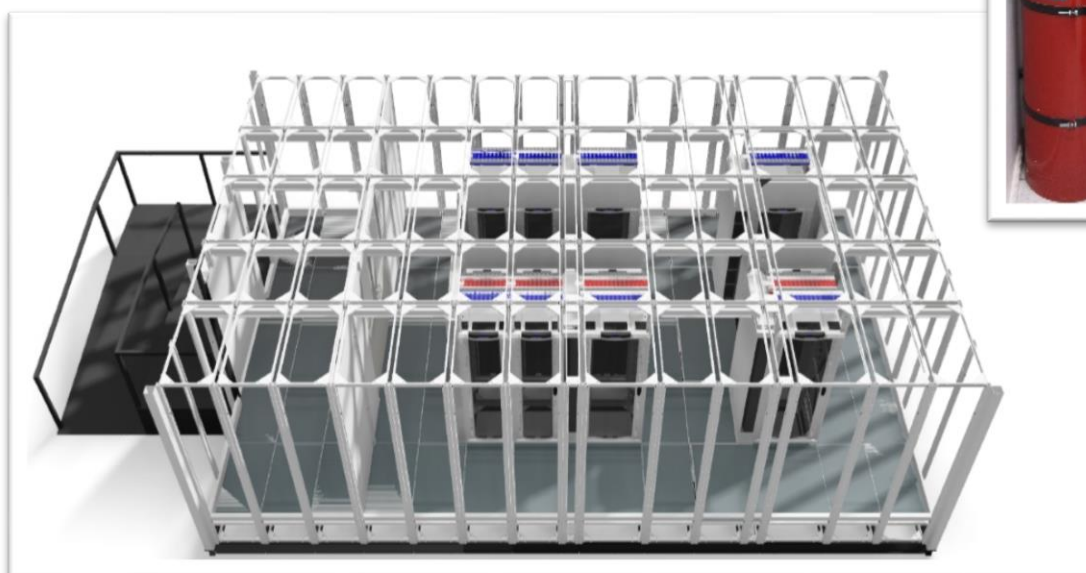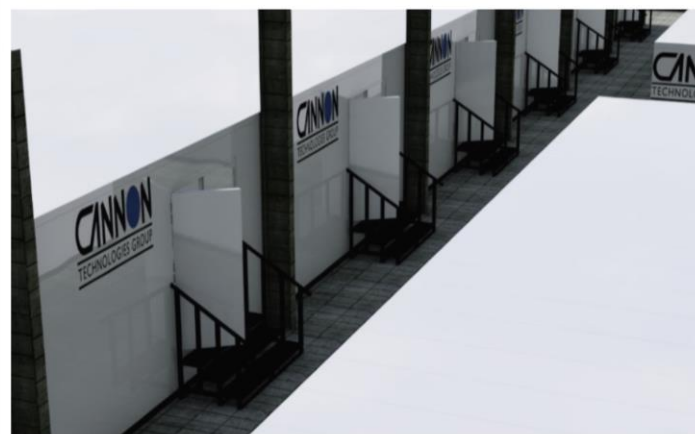
Any size or shape:

Typically a thirty to fifty Rack hall is popular but uniquely Cannons MDC solution may encompass thousands of cabinets if desired.

The Cannon MDC halls can also be expanded in any direction on day 2 / 3.

Flexible geometry:

The halls can even be built around existing beams and structures including column supports, pipework, risers, lift shafts and services.

Building columns may be hidden within the MDC with suitable fire rating protection incorporated.

Diverse Equipment: May be configured to suit any size rack cabinets – including 3rd party cabinets and equipment, (Tape Stores, SAN, Large Switches, Server systems etc).

CANNON T4 MDC RANGE
MODULAR DATA HALLS

Power systems:

Power systems can be incorporated into the white space or deployed into separate rooms and spaces with controlled access.

Diverse Power A and B provision:-

200kva Modular UPS and Battery cabinets combined with 250kva switchboards fitted at the end of each row of rack cabinets. Whips are then run from the switchboard cabinet to IEC sockets under the floor. By using A and B circuit's dual power is provided to the racks to meet TIA 942 rating 3.

Bypass and maintenance:

The UPS bypass and isolation switchgear may be within the switchboard cabinet. Power metering for both three phase and single phase circuits may be incorporated in the switchgear as well as 'finger safe' isolation of circuits to make them safe for live working.

Cabinet / Rack Power Distribution:

Two 32A Single phase PDU strips are generally fitted in every rack space, 20 x C13 and C19 off two 16a branch circuits being most common. Two PDU's one fed off the RED A UPS and one fed off the BLUE B Ups provides diverse power to the rackspace.
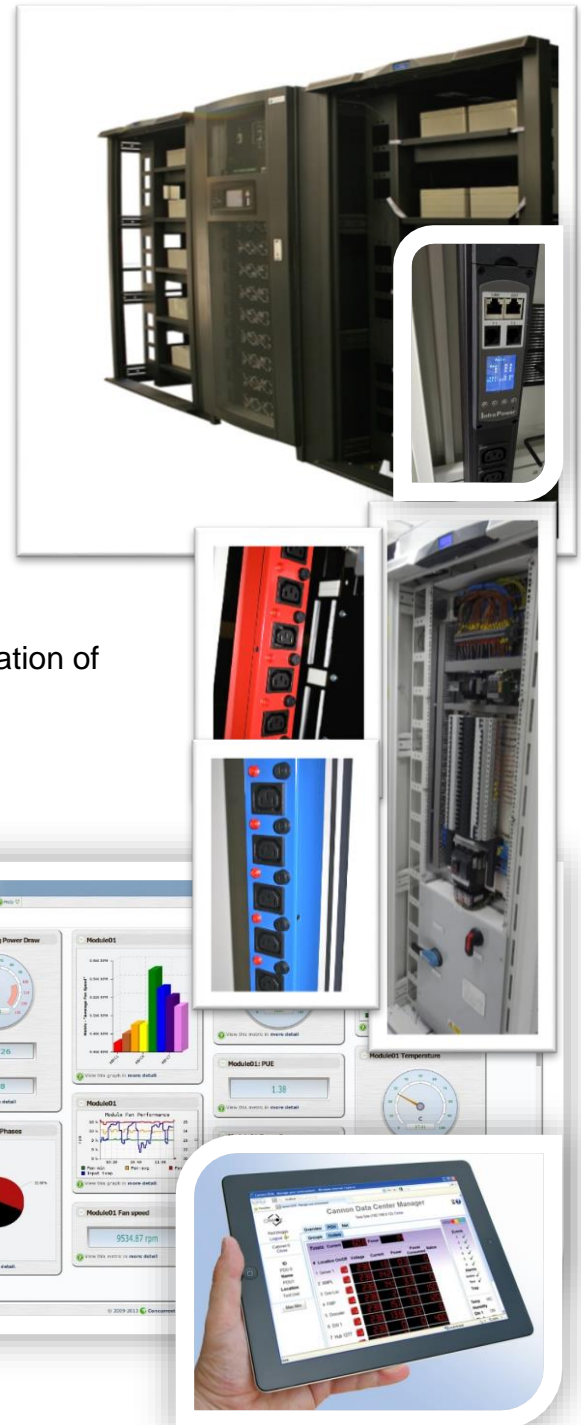
DCiM: Cannon Data Centre

Manager monitors and reports on the critical systems and efficiency of the system 24/7. Reporting that meets the requirements of Ashrae, Green Grid and the EU Data centre code of conduct may be implemented.

The data collected can be ported to 3rd party monitoring services if required.

Lighting:

LED Lighting with optional occupancy sensors provides efficient overall lighting of the space to TIA guidelines.

Emergency lighting luminaries are also provided over the entry and exits.

Cooling systems:

Cannon's industry leading, ultra-compact and highly efficient Within Row Cooling solution complements the MDC Hall system perfectly.

Easily scaled to suit the cooling required both on day one and suitable for quick future expansion.

Automatic speed control varies the amount of cold air the units expel as they deal with the hot air on the rear of the units while keeping the cold aisle stable.

With 30kw of cooling in only 200mm of width they deliver up to 3000 cfm of close coupled cooling air.

Quiet, High Volume:

Six large, hot swappable radial blowers are quiet and efficient, only consuming 600w at 100% and <100w at 25% load. 30kw max provides 25kw of sensible cooling when used with chilled water at 12°C.
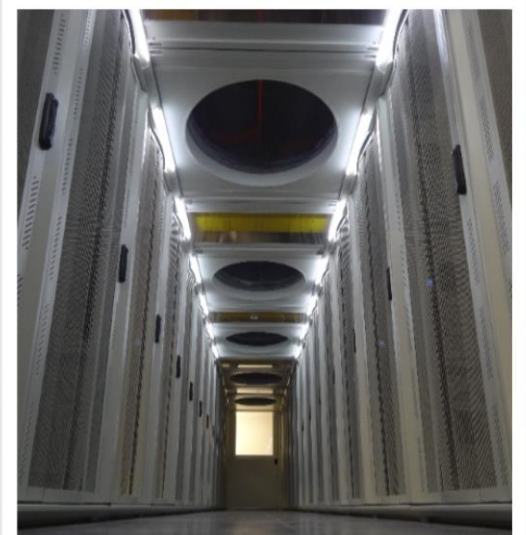
Efficient – Water based Free cooling mode:

Coupled with modern, high efficiency Chilled water plant, compatible ambient conditions and free cooling coils a cooling PUE of under 1.06 is possible. *(#1)*

DX: If a Direct Exchange 'DX Gas' system is desired rather than water then multiple 25kw units can provide 18kw of sensible cooling coupled to suitable external heat exchangers *(#2)* (No Free Cooling).

Air Side Economisers / Flood cooling / Fresh air:

Optionally the Cannon MDC hall may be built to encompass large scale air handling systems with diverse free cooling. Air may be delivered both under and over floor into the cold aisles. The hot exhaust air being removed by overhead ductwork , chimneys and low energy fans. These systems can deliver outstanding efficiencies at large sizes.

(#1) 8 x WIRC units @ 500w = 4kw, 3kw of water pumps and 5kw of free cooler fan energy = 212kw total for 200kw of sensible cooling – (free cooling metric based on Southampton UK Winter period).

(#2) External DX heat exchanger must be within 70m of the WIRC DX air handler and <15M above or below.

Incremental Fit out:

The Cannon MDC halls system is easily built in stages as your IT requirement grows.

The halls can even be part built without the cabinet internal infrastructure, power and cooling systems. When the business demand increases the required capacity, Power and cooling modules are quickly installed, cabinets fitted out and the white space bought on line in just a short time.

Shared occupancy friendly:

Adjoining halls are assembled without impeding the use of other occupied halls. By using suitable incremental sizes of power and cooling modules the total Capex may be evenly spread over many years.
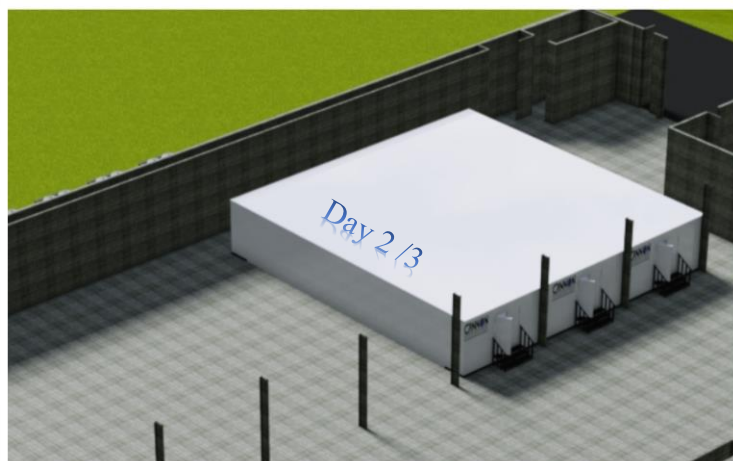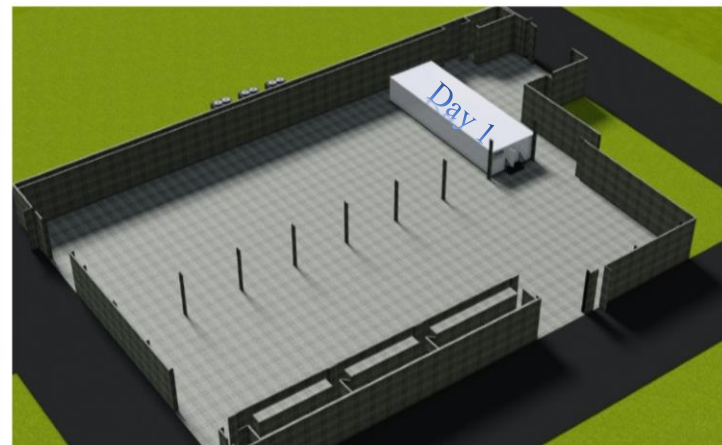
High Density Options:

If extreme power density within the building envelope is required the Cannon MDC system can be built on multiple floors using a suitable mezzanine floor system. The halls can also be assembled on suitable load bearing floors of traditional buildings if required.

Rooms and spaces:

As well as the Data Hall white space the system can provide special purpose rooms for Power, Cooling, Fire, Network Control Centres, Secure entry vestibules and People traps, Offices, Cloakrooms etc.

Disassembly: Returning a rented building to its original status is easy, quick and inexpensive as the Cannon MDC is quickly disassembled when necessary. Redeployed the system may be reused in a new format if desired, and if not it is nearly 100% recyclable.

Hybrid Layout:

Where a combination of a shell building, MDC, Container and other format buildings are required to best utilise a site the solutions may be easily mixed and matched as required.

Front of shop portals may be built with modular buildings behind.

A hallway built using interconnecting corridors of MDC modules provides a seamless interior space.
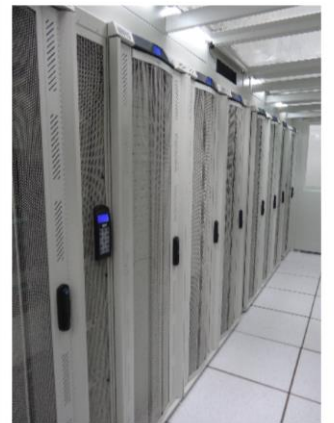
Infrastructure:

The operational infrastructure within the MDC is state of the art, and is identical to the systems underpinning some of the world's most advanced data centre operations.

Features and Options:

All the features of a traditional data centre can be incorporated into an MDC Halls solution from Cannon:-

Large switch and SAN racks. 3rd Party cabinets and 'freeform' space. Within row, over floor or underfloor cooling. UPS and Integrated switchgear. Separate power, Cooling, M&E plant rooms. Fire protection using gas (FM / Novec) or water based systems. Secure mantraps. Diverse cabling with Multi level & colour cable & fibre raceways. Wide aisles both Hot and Cold. Space saving sliding doors. Environmental and power monitoring. DCiM, Dashboards. Remote monitoring. CCTV. Access control. Security. Free cooling water chillers.

Standby and Prime generators. Rotary UPS.

Rating to resilience levels 1,2,3 or 4 (TIA 942-A).

CANNON T4 DATA CENTRE SOLUTIONS

CANNON T4 MDC RANGE
MODULAR DATA HALLS

The Cannon T4 Modular Data Centre is the result of almost forty years of continuous experience. The solution has steadily evolved and developed, keeping abreast of emerging technologies to arrive today at the pinnacle of the Data Centre world.

This solution, available from Cannon and our worldwide partner network, enables clients to avoid high up front expenditure by pacing their investment in line with the occupied space being used within their Data Centres.

This removes the over investment caused by the underutilised and expensively equipped traditional Data Centre space.

As every Data Centre requirement is different, The Cannon T4 Data Centre Solutions team would be pleased to offer any assistance in specifying, designing and quoting a solution tailored to your needs, from a single cabinet to a multi megawatt DC our team of Engineers, Support staff and local integration partners are available to aid customers worldwide. See cannontech.co.uk for contact details of a partner close to you.

A selection of Cannon Technologies Multi-International Awards