

CASE STUDY

ColdLogik™



ARM Holdings HQ, Cambridge
New build high density data centre
2012

The client

The world's leading semiconductor intellectual property (IP) supplier ARM is at the heart of the world's most advanced digital products. Their technology enables the creation of new markets and transformation of industries and society.

They design scalable, energy efficient-processors and related technologies to deliver the intelligence in applications ranging from sensors to servers, including smart phones, tablets, enterprise infrastructure and the Internet of Things.

Their innovative technology is licensed by ARM Partners who have shipped more than 50 billion Systems on Chip (SoCs) containing their intellectual property since the company began in 1990. In 2012 ARM chips were used in over 85% of all smart phones produced in the world.

The brief

In 2010 ARM required a new build high density data centre at their head quarters to increase capacity, energy savings and cooling.

Parameters

They required the lowest PUE efficient cooling within a small data centre footprint of 12m x 4m. They also required the project to be turned around within a few weeks for a 960kW duty data centre with a Tier 3 rating.

Solution

USystems installed 60 ColdLogik compliant USpace cabinets with CL20 C8 rear coolers , a Leak Prevention System and 3 x 500kW cooling towers.



The data centre 'white space' featuring USpace cabinets and ColdLogik rear coolers at ARM Cambridge.

Kilowatt duty

The total for this 60 cabinet new build data centre is 1MW. The room density average is 16kW per rack with the capacity for any/all racks to go up to 23kW if required.

Energy savings

The ColdLogik solution has demonstrated a PUE of 1.045 on full load - 68% current load PUE of 1.08-1.16

Restrictions

The location of the data centre with its restrictive footprint was built and commissioned from the ground up in less than 12 weeks and ahead of schedule.

External plant

3 x 500kW cooling towers in a 12m x 4m footprint.

Leak Prevention System

Because the client required the pipe work to run through their data centre, they opted for the additional security and peace of mind that the patented Leak Prevention System which complements the ColdLogik rear cooler solution in many scenarios.

Client's comments

Due to the uncompromising success of the Cambridge HQ new build data centre, ARM commissioned a further two more 1MW data centre new builds at their Austin, Texas Offices in 2013 based on the original ColdLogik Cambridge project design, as this was the only solution which could offer both efficient cooling within such a small footprint.



Cooling towers at ARM Cambridge



A fan!

ColdLogik™