

DRY COOLER

ADIABATIC AIR INLET COOLING

CONCEPT:



EcoMESH concept is based on intermittently and efficiently evaporating water on a large mesh area in front of the heat rejection surface of **Mini-Split, Rooftop, Air Cooled Chillers, Condensers and Dry Coolers...**

Adiabatic cooling affect is provided via intermittent water spray over a wired mesh surface. Water spray provides an adiabatic cooling of 15 ~ 25 C for the incoming air stream. It can be either initiated via an ambient sensor or alternatively by external control override.



EcoMESH ECONOMICS

Energy Efficiency Improvement (%)			
Application	Ambient		
	Low	Medium	High
Mini-Split	15	25	40
Rooftop	15	25	40
A/C Chillers	15	25	35
A/C Condensers	20	30	45
Dry Coolers	18	27	48

Water Consumption Reduction (%)			
Application	Ambient		
	Low	Medium	High
Mini-Split	-	-	-
Rooftop	-	-	-
A/C Chillers	25	35	50
A/C Condensers	25	35	50
Dry Coolers	25	35	50

Cooling Towers (l/h per kW THR)	1.25	1.58	2
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BENEFITS:

*** REDUCED RUNNING COST**

*** ELIMINATES HEALTH RISKS**

*** FLEXIBLE SYSTEM**

*** QUICK RESPONSE**

*** LOWER MAINTENANCE**

*** REDUCED WATER CONSUMPTION**



TECHNICAL SUPPORT:

EPS offers full site as well as design back up to assist in proper selection, installation, maintenance and integration of any new or existing systems as part of our customer commitment.

Please consult our technical sales team at sales@epsLtd.co.uk for your specific application or visit our web site www.epsLtd.co.uk.



Unit 32, Mere View Industrial Estate,
Yaxley, Cambridgeshire, PE7 3HS, U.K.

Tel.:+44-(0)1733-244224

Fax.:+44-(0)1733-243344



Case Study; DRY COOLER APPLICATION

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CASE STUDY;

Maruti-Suzuki manufacturing plant in New Delhi, India was having problems with their cooling towers and they replaced it with 2 No, Dry coolers with 915 kW heat rejection capacity each (Total 1,830 kW). These replacement dry coolers were supplied and installed by Coil Co., India on 25th January 2003 and following a whole year's operation it is confirmed that the overall annual water consumption was 8% of the previous year's cooling tower water consumption which was recorded by a dedicated water meter.



Figure 1 illustrates the water inlet and outlet temperatures against various number of nozzles operation and Figure 2 indicates the water consumption under the same operational conditions.

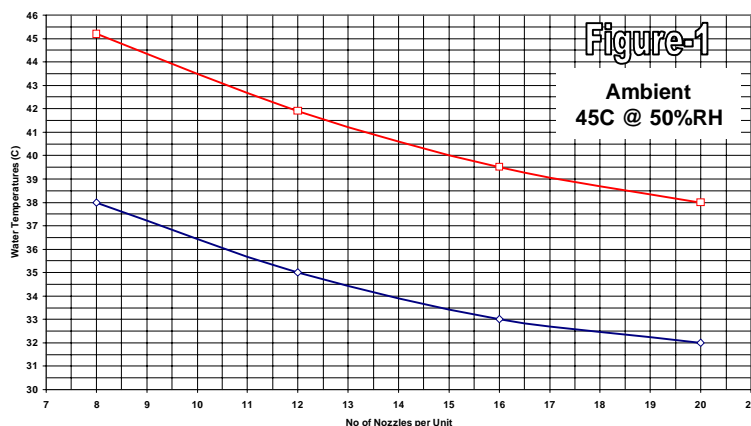
Based on the client's logged data the replacement dry coolers provided as low as 32C water outlet while the ambient remained at 45C @ 50%RH.

A number of EcoMESH dry cooler nozzles were blocked to see the impact on flow rates and water consumption. As anticipated, less nozzles resulted in lower performance but lower water consumption.

No of Nozzle variations on Water Consumption Rate



No of Nozzle variations on Performance @ 45C / 50%RH Conisition



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- * **LOWER MAINTENANCE**



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Case Study; DATA CENTRE DRY COOLER APPLICATION

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**T Mobile
Data centre,
Slough, UK**

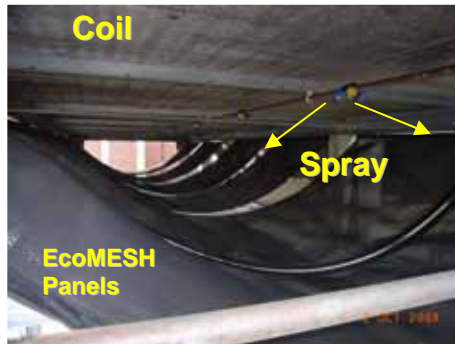
CASE STUDY;

T-Mobile data centre near Slough, UK has three large data centre building with internal water cooled Uniflair close controlled units. Large number of units placed on the perimeter of each room to remove the heat generated by the data processing machinery.

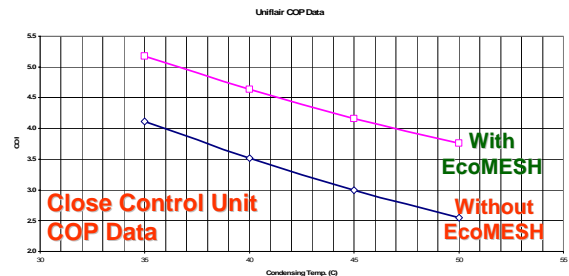
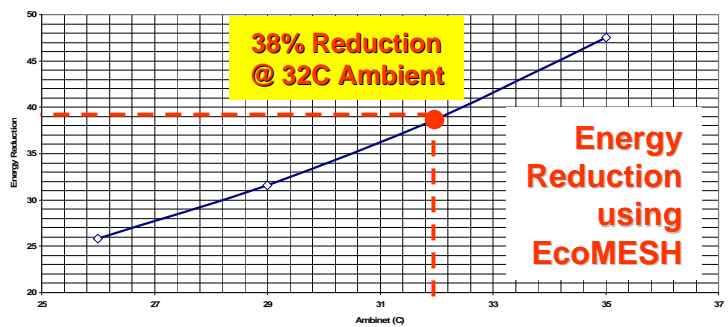
As the external dry coolers installed within a confined space the short circuiting of the discharge air from these unit caused considerable operational issues. Moreover, in order to maintain the reliability the client used to clean the dry cooler coils on a monthly basis. Since the installation of EcoMESH dated 2006 the client has not experienced any hot discharge air close circuiting issue and the most importantly the ,monthly coil cleaning is completely eliminated due to self-cleaning filter capability of the EcoMESH system



**Total 10 No's
Dry Coolers**



ENERGY REDUCTION USING EcoMESH ADIABATIC SYSTEM



BENEFITS;

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Case Study; OFFICE AIR CONDITIONING APPLICATION

CONCEPT;

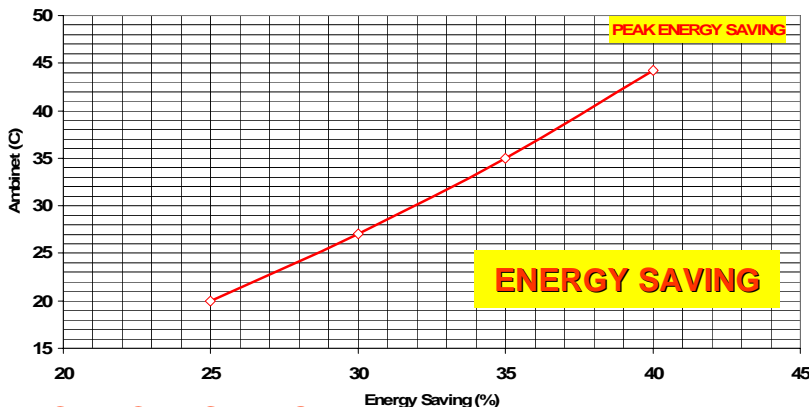
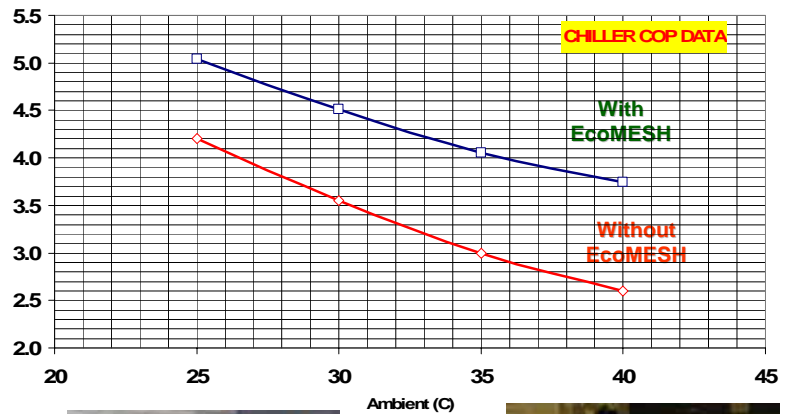
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CASE STUDY;

One Curzon Street, Central London, UK air conditioning system is based on using water cooled chiller in the basement with dry cooler on the roof space. Partly due to limited heat rejection space, partly due to too many units operating closer to each other resulted in short circuiting of the discharge air from these units and this has caused considerable operational issues namely high pressure shut-down for the chiller during hot summer days.

Since the installation of EcoMESH dated 2006 the client has not experienced any hot discharge short circuiting issue. It is also confirmed that they can get 6~9 °C cooler water return from the dry coolers using EcoMESH and this colder condensing water results in significant energy savings which resulted in recovering the original EcoMESH installation pay back in the region of one cooling season.



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