

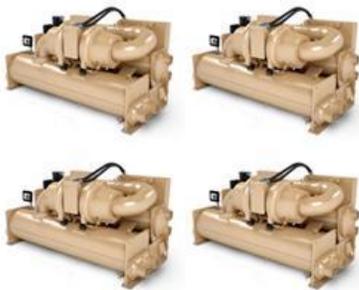
## **CASE STUDY: CAPEX SAVINGS FROM CLEVER VALUE ENGINEERING OF CHILLER PLANT WITH SMARTD CHILLERS**

With this paper we would like to outline the possible savings if SMARTD’s chiller are fully understood and the chiller plant designed accommodated to their characteristics. This new development project in Jakarta, a seven star hotel, was originally designed with 4 x 500TR chillers.

Due to the premium for higher efficiency of FCUs and chiller, as well as the integration of a dedicated chiller plant optimizing system, the cost was raised within the cooling/air conditioning by IDR 7,218,988,540, while the system efficiency was raised by over 30%, resulting in an operational electricity saving of IDR 2.1bn per year.

Importantly, the chiller plant now features more compressors, namely 6 oil-free low maintenance Turbococors on the SMARTD chillers, on a smaller footprint.

### **Conventional type:**



**SMARTD 1,000TR  
with 3  
compressors  
  
= 6 total vs 4 for  
conventional**

Further savings were achieved through the reduction of number of Pumps (2 CHW and 2 CDW pumps deleted), electrical panels, piping accessories and installation cost.

In addition by utilizing heat pumps in lieu of electrical hotwater heaters and boilers the floor space savings was over 500m<sup>2</sup> and saving of IDR 1,500,000,000

### **2) Savings on electrical infrastructure due to reduction of electrical capacity requirement:**

The gensets were halved from 6x 1500KV to 3x 1500KV with a saving in floor space 250m<sup>2</sup> and cost reduction of IDR 7,925,257,100.

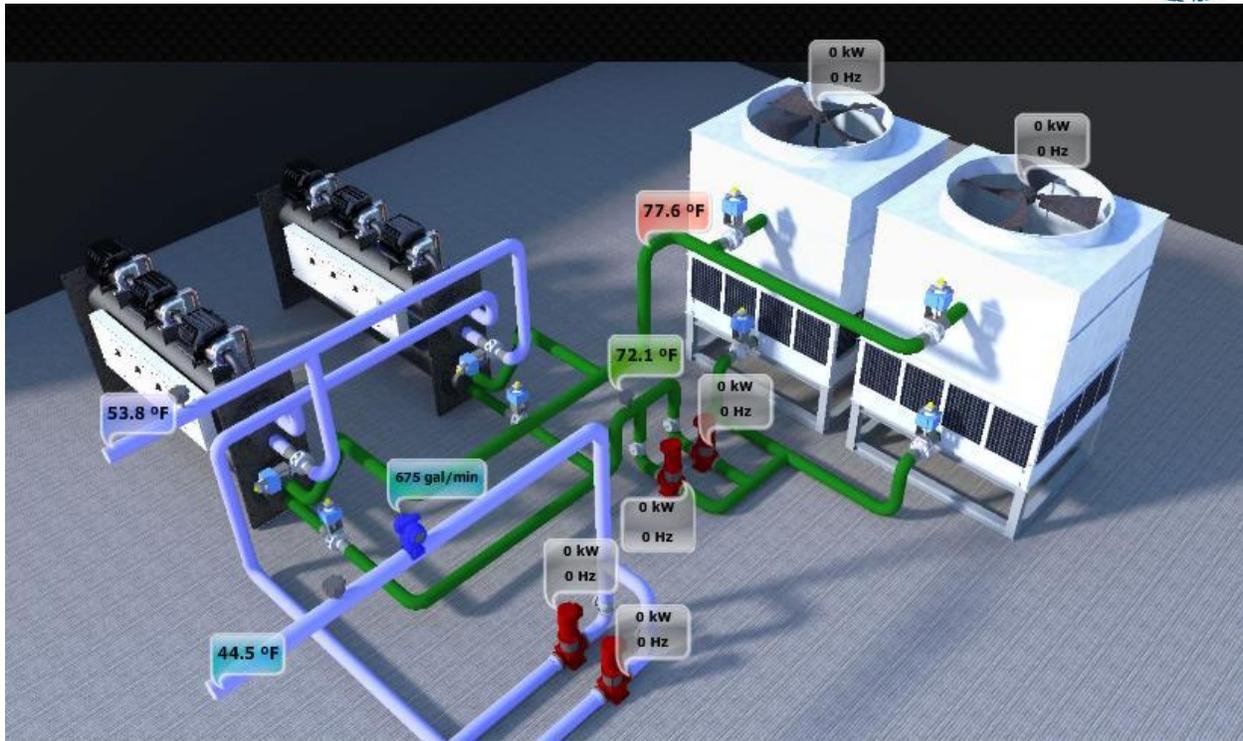
The electrical saving including switching gear/ ECB and cabling is a saving of IDR 2,400,000,000

**Total CapEx Saving achieved: IDR 4,6bn (approx. USD 380,000)**

**Total Space saving: 750m<sup>2</sup>**

**Lifetime operational saving: IDR 42bn (approx.. USD 3.6m)**

**SMARTD chiller plants– do more with less. Contact us today**



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CLIMATE CONTROL 2013  
Standalone Chillers Award



GREEN MIND 2014  
2nd For Green Industries Award



CANADA  
Energy Award



ASRAE AHR 2003  
Innovation Award For Energy



ENVIRONMENT PROTECTION AWARD  
2004 Climate Protection Award



NATURAL RESOURCES Canada  
2005 Energy Innovation Award



MIDDLE EAST  
Green Technologies Award



AIRAH  
Refrigeration Award



ASHRAE AHR EXPO  
Energy Innovation Award



AIRAH Australia  
2009 James Harrison Award



INSTITUTE OF REFRIGERATION (London)  
2007 J & E Hall Gold Medal



FROST & SULLIVAN AWARD  
2006 Technology Leadership Award