

Solar cooling installation UWC & Desert Mountain Highschool, AZ

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9/29/2014

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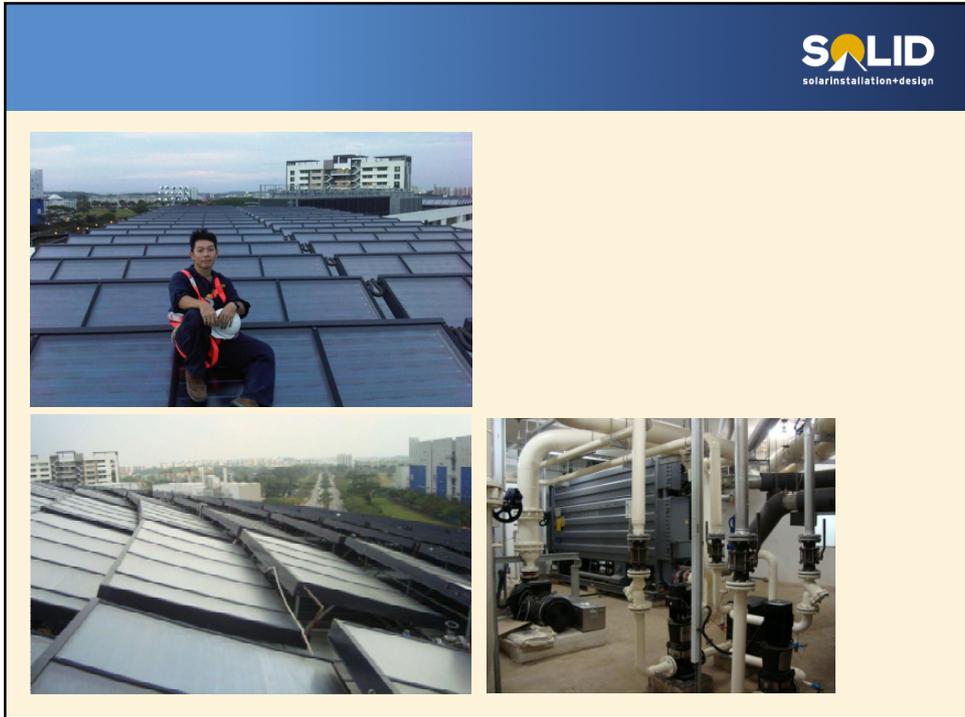
Solar Cooling & Hot Water
for School Campus

Solar Panels:
3900 m² / 2.73 MW

LiBr absorption chiller:
1470 kW

Operation started: 2011

ESCo- System



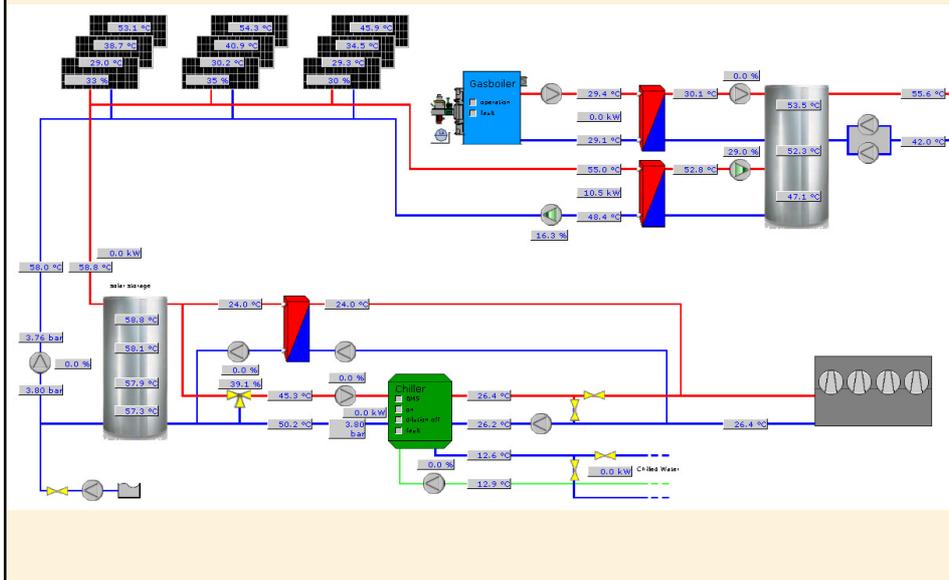
Contents

- Performance of the solar cooling plant in 2013
- Singapore weather 2013
- TRNSYS simulation vs. reality in 2013
- System improvements based on simulation
 - Variable speed drives cooling water circuit
 - Additional collector area – various orientations

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UWC Tampines, Singapore

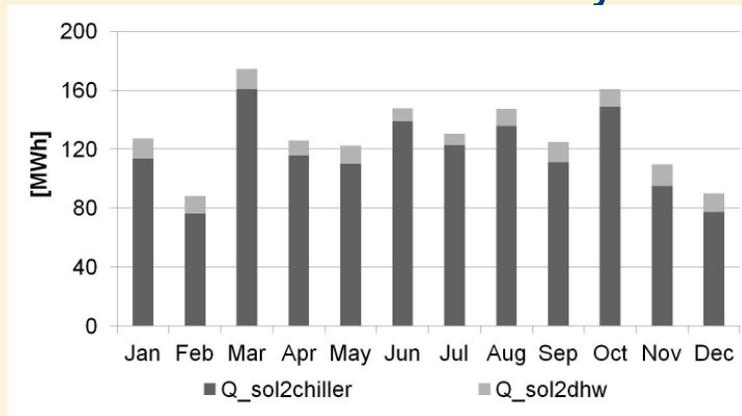


PERFORMANCE OF THE SOLAR COOLING PLANT IN 2013

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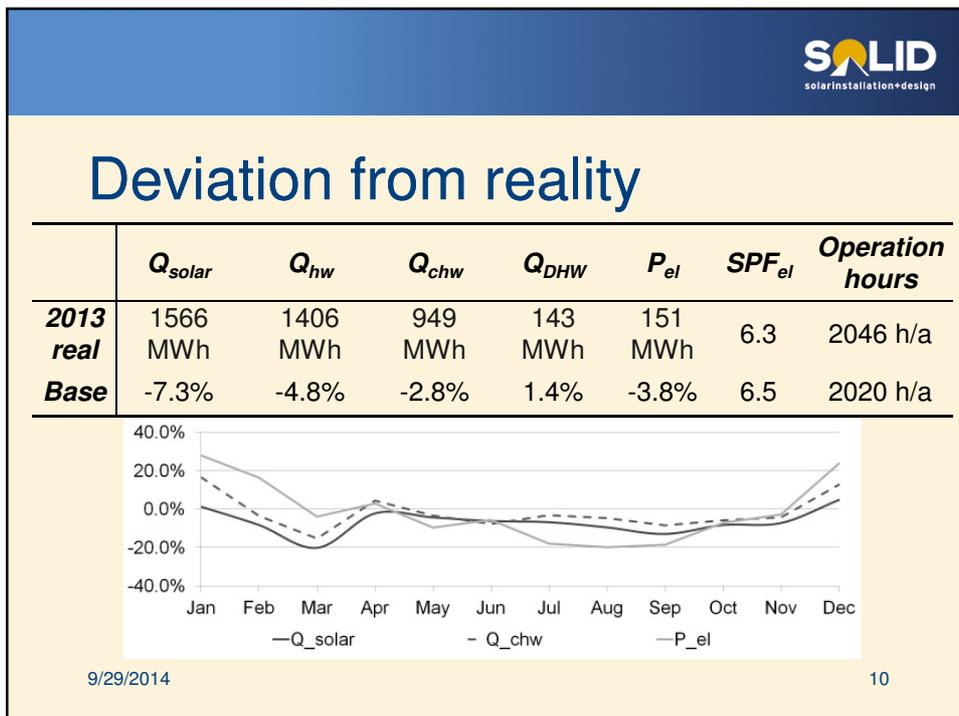
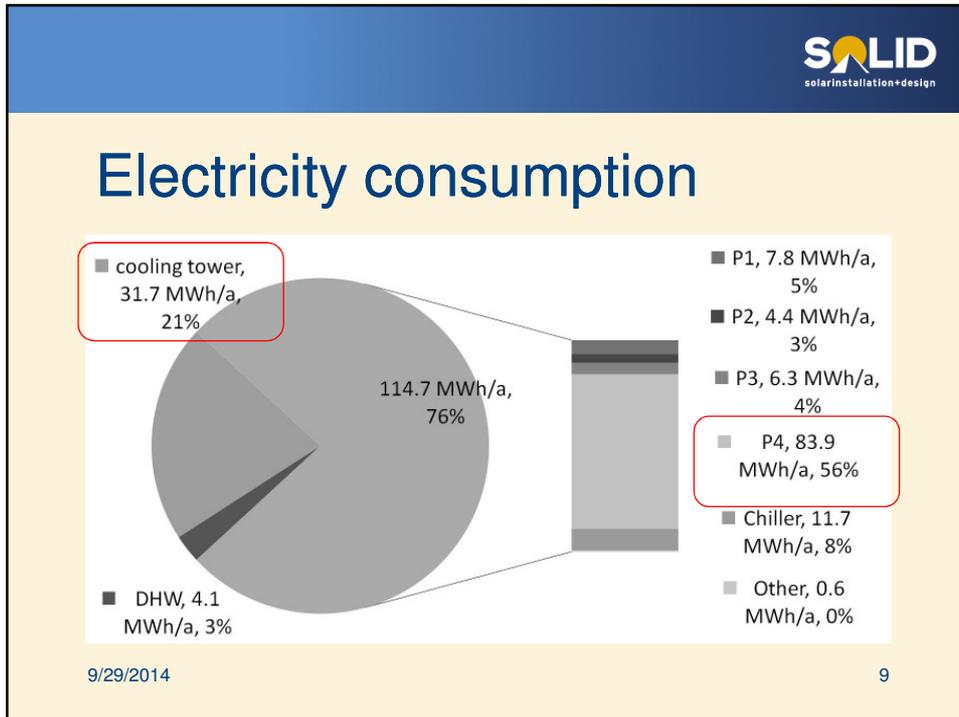
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Solar heat input to the cooling and domestic hot water system



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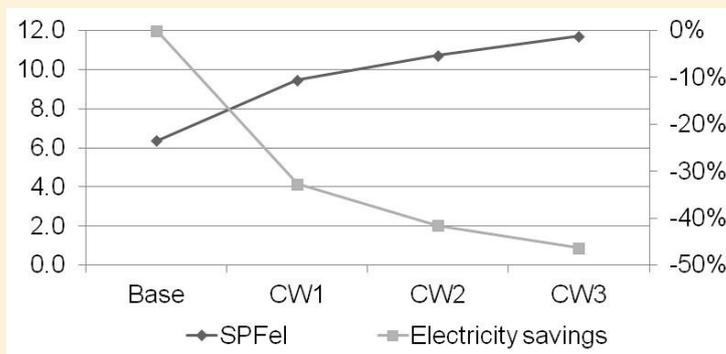


SYSTEM IMPROVEMENTS BASED ON SIMULATION

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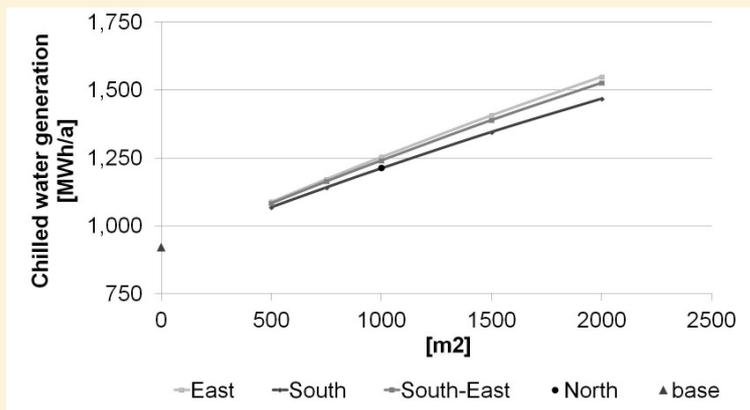
Electricity savings due to cooling water circuit improvements



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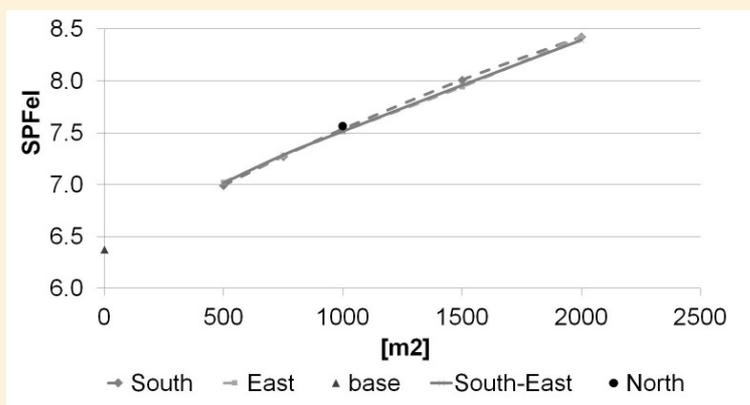
Increase of cooling generation due to additional collector area



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Change of the SPF due to additional collector area



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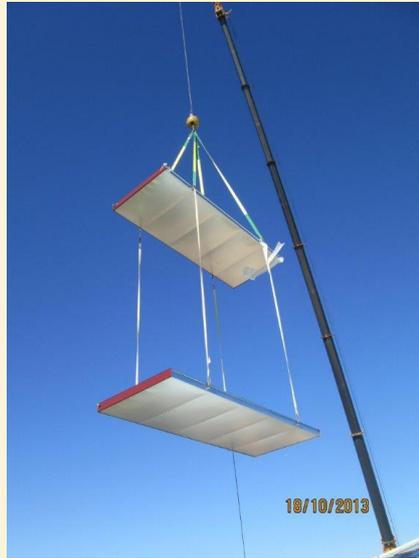
Solar Panels: 5,000 m² → 3.5 MW

Cooling load: 500 tons /1750 kW

In operation since 2014



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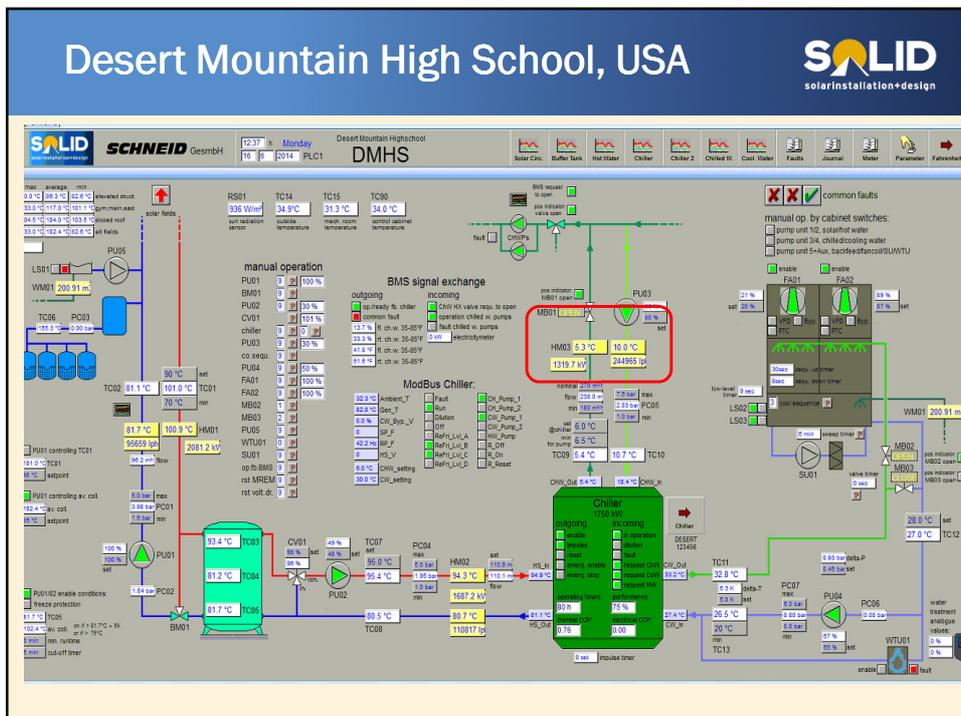
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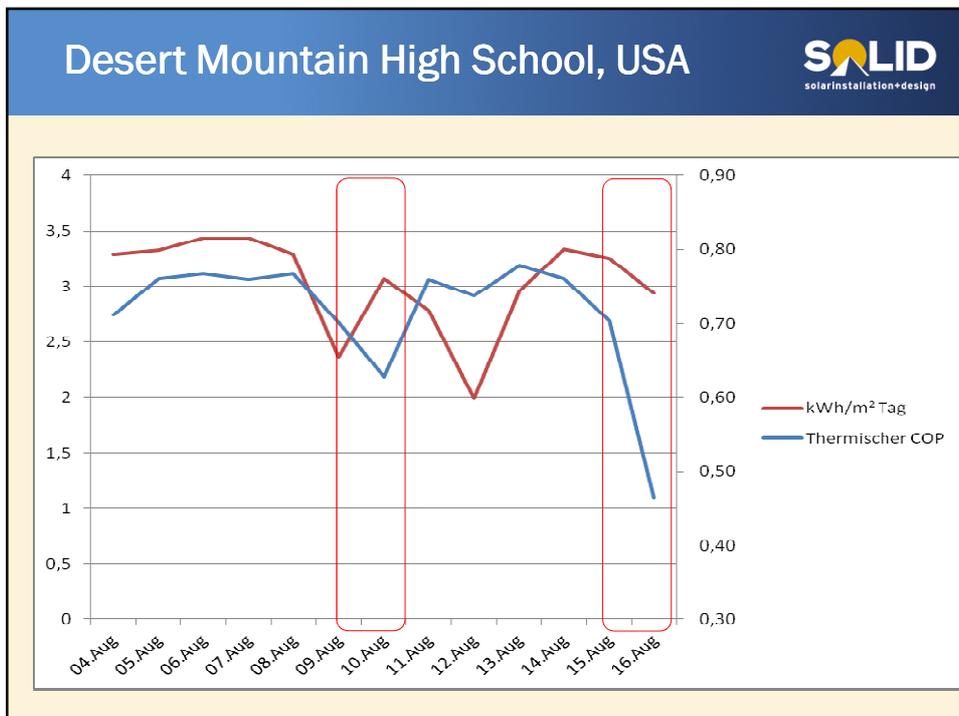
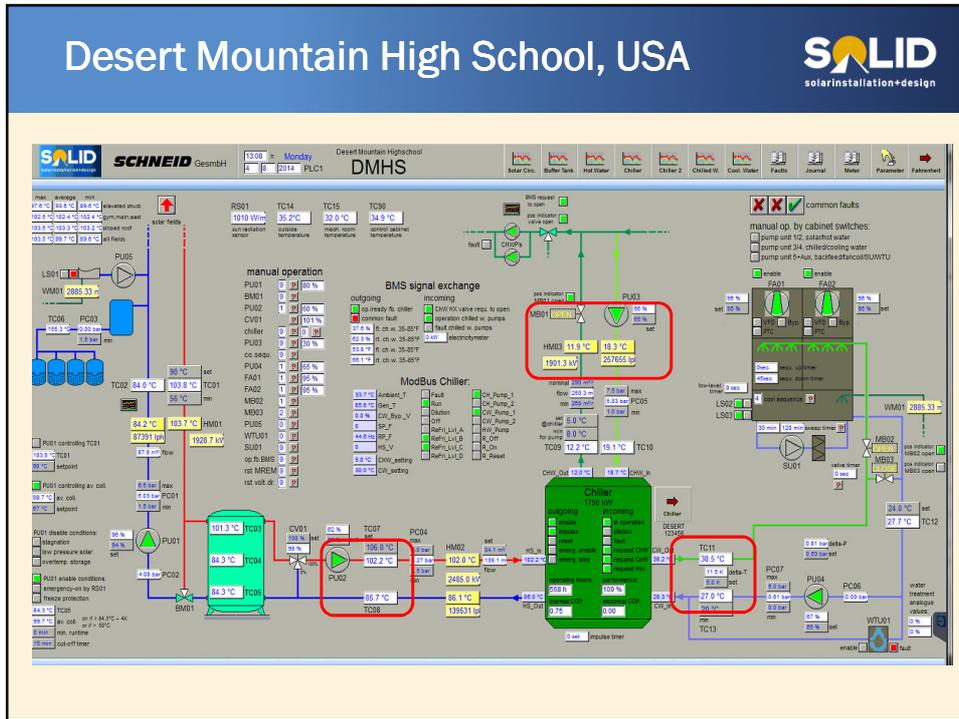


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