



Porsche Centre Sungai Besi Kuala Lumpur (Malaysia)



The Porsche Centre

Located in the city center of Kuala Lumpur, Porsche Centre Sungai Besi is constructed on a 1.25 acre plot of land, with a built-up area of approximately 3,324 square meters. The 3s Porsche Centre Sg Besi is equipped with state-of-the-art sales gallery, parts and after sales service. The sales gallery has a capacity of displaying up to 18 cars, showcasing the latest Porsche models and a wide selection of pre-owned vehicles while the workshop houses 9 service work bays.

As an effort to improve the thermal comfort in the workshop, an independent environmental study was commissioned by Sime Darby Auto Performance. The study revealed that the daytime temperature in occupied areas of the workshop routinely exceeds 32°C, and the 650 square meters' workshop in the Porsche Centre Sg Besi is under-ventilated. High radiant temperature of the workshop's surroundings (roads, roofs and dark cladding of the building) ruled out the use of a mechanical ventilation to maintain a reasonable working condition. The study recommended to adopt measures to improve the thermal comfort, which included increasing the air velocity with big ceiling fans, installation of additional louvers, and also air conditioning the workshop.

The option of Air Conditioning was excluded due to the high initial investment and high running costs. Workshop doors would have to be replaced

with expensive high speed roller shutters to retain the cool air inside. In addition the high energy consumption resulting in high running cost combined with the environmental unfriendly aspect is also why air conditioning was not an option.

The installation

Although an indirect evaporative cooling system of this type had never been installed in Malaysia, the

Management of SDAP decided to install this innovative cooling concept. IETCO Sdn Bhd, a product specialist company focusing on energy saving solutions, and official distributors of Seeley International products in Malaysia, evaluated a possible installation, with the cooperation of Mauro Ercoli, Seeley International Sales Manager responsible for the area. After a few surveys, the experts calculated that an Indirect Evaporative Cooling System based on a counterflow heat exchanger (like Climate Wizard) would grant an estimated supply air temperature of 25-26°C into the workshop. They evaluated the need of 5 Climate Wizard H15S (Supercool Series), in order to obtain this result.

Convinced of the efficiency of the system, the Management commissioned the project to IETCO Sdn Bhd, provided that the system would have result

in an ambient temperature in the workshop of $28 \pm 1^\circ\text{C}$. IETCO Sdn Bhd worked on integrating the ductwork for the new cooling system into customized workstations of the workshop. The target was to keep the changes to minimum and integrate the system as



System installed:
Indirect Evaporative Cooling System

Committee:
Sime Darby Auto Performance

Designer Engineer:
- IETCO Sdn Bhd / Seeley International

Supplier:
IETCO Sdn Bhd

Installed products:
5 x CW H15S

Application system:
Stand alone / Spot Cooling

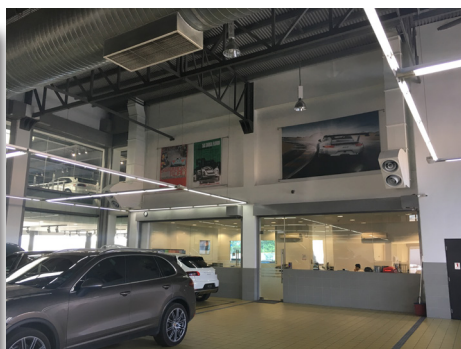
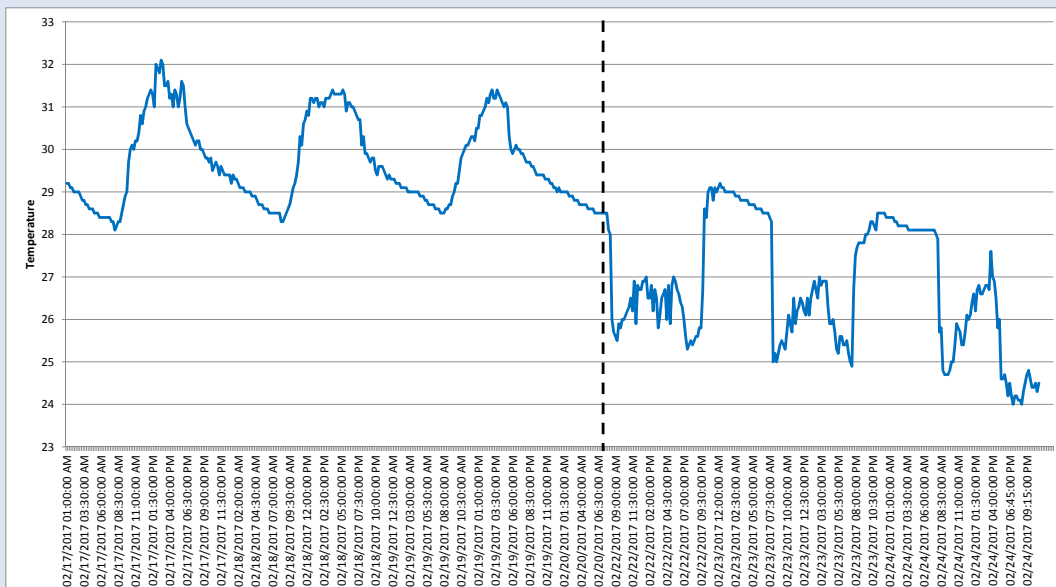
much as possible.

During the first trial after the installation, starting from an outside temperature of 35°C and 49% RH, the five Climate Wizard installed provided a supply air temperature of 23.5°C, which is well below the temperature targeted by the client. Commissioning was made on 20th February 2017 together with Seeley International Engineer, Johan Vellemann.



The Data Logger

Since the Committee wanted to make sure about the temperature provided, a data logger has been installed next to the grills of one of the coolers. It registers the supply air temperature every 15 minutes and the data are available online. We can see in the graph the temperature drop from the 20th February (Commissioning day), compared to the temperature inside the workshop before Climate Wizards were turned on.



Benefits and advantages
Climate Wizard indirect evaporative air conditioner uses a hyper-efficient counter-flow heat exchanger to cool the air. Not adding moisture to the air, it is particularly suitable

for humid climates (like Malaysia for example), where humidity can be an issue. Climate Wizard's cooling performance can rival that of refrigerated systems, using up to 80% less energy. That is not only great for

reducing power bills, it is also great for the environment, especially because the system does not use chemical refrigerants to cool the air. Taking 100% fresh air from outside, Climate Wizard's performances and cost-saving

capabilities actually increase, when the heat is at its highest, in complete contrast with refrigerated systems, which rely on recirculating the air inside the building.

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