

# Retro-Commissioning (RCx) – Fact Sheet



Shek Kip Mei Sports Centre

FaS\_004



## Shek Kip Mei Sports Centre

**Address:** 290 Nam Cheong Street, Sham Shui Po

**User:** Leisure and Cultural Services Department

**O&M Team:** EMSD/MunSD

**>5%**  
Building  
Electricity  
Saving

## Background

Year of Completion: 2017

Normal Operating Hours: 07:00 - 23:00

**Building Description:** A 3-storey building with a fitness room, activity rooms, and a children playroom. Amenities include an outdoor artificial climbing wall, tennis courts, children's playground, fountain, artificial waterfall, amphitheater, mini-soccer pitch with a color-coated hard surface, two color-coated basketball courts, jogging track with fitness stations and a rest garden.

**Air Cooled Chiller Capacity:** 3 x 838kW ACC + 1 x 152kW ACC

**Transformer Capacity:** 1 x 1500 kVA

## Energy Saving Opportunities in RCx

- (1) **Adjustment of air handling unit (AHU)/ primary air unit (PAU) operation schedule** Before RCx, the operation of AHUs/PAUs occasionally exceeded the operating hours of the facility. It is recommended to adjust the AHUs / PAUs operation schedule to align the operating hours.
- (2) **Tuning of return air temperature (RAT) setpoint** Before RCx, the RAT setpoint at air handling unit (AHU) was fixed. It is recommended to adjust the RAT setpoint to achieve energy saving.
- (3) **Installing variable speed device (VSD) for AHU to adjust the fan speed** Before RCx, the AHU fan operated at constant speed. It is recommended to install the VSD for AHU to adjust the fan operating at lower fan speed to align with loading demand.

## Energy Saving Opportunities in RCx (Cont'd)

- (4) **Application of cleansing mode** Before RCx, there was no separate operation mode for cleansing period. The facility has scheduled a cleansing period every 2<sup>nd</sup> and 4<sup>th</sup> Tuesdays of each month from 09:00 to 15:00. It is recommended to reduce the lighting during the cleansing period.
- (5) **Tuning of chiller staging** Before RCx, all existing chillers were equipped with VSDs and the staging logic was based on the chilled water retrain temperature (CHWRT) of main header. It is recommended to adjust the equipment

staging based on the cooling demand during summer and winter period. By applying the appropriate chiller staging control logic, the chillers will operate at better efficiency performance.

- (6) **Installing VSD on chilled water pump (CHWP)** Before RCx, the CHWPs were equipped with constant speed drive (CSD) and run at full speed all over the operational period. It is recommended to install the VSD for CHWPs and manually reset the VSD speed periodically.

## Energy Saving Opportunities (ESO) Summary

### Energy Saving Opportunities (ESOs)

Adjustment of AHU/PAU operation schedule

### Action

Adjust the AHU/PAU operation schedule based on operating hours of the facility

Tuning of RAT setpoint

Manually increase the RAT setpoint

Installing VSD for AHU to adjust the fan speed

Reset fan speed periodically after installation of VSD

Application of cleansing mode

Reduce lighting in operation during cleansing period

Tuning of chiller staging

Implement appropriate chiller staging control logic according to the cooling demand

Installing VSD on chilled water pump

Reset pump speed periodically after installation of VSD