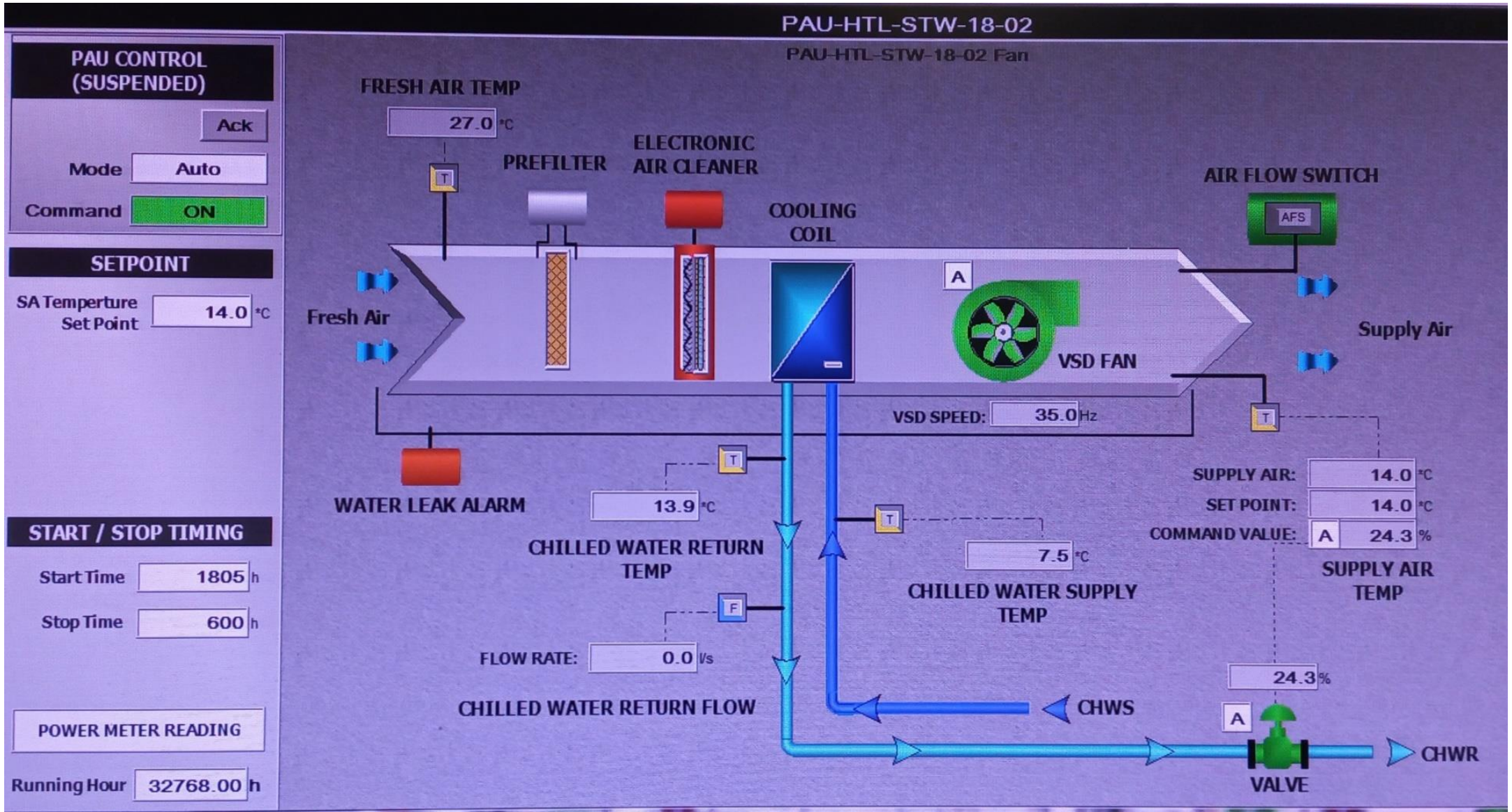
PAN PACIFIC

JW MARRIOTT

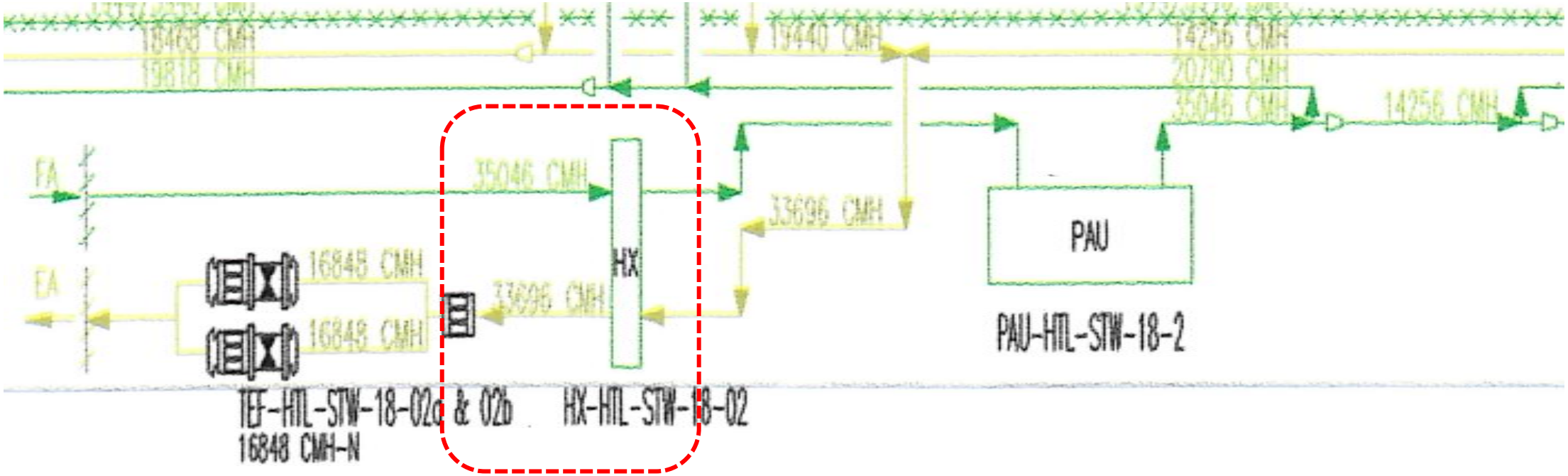
JW Marriott

- 634 rooms
- 9 Restaurants & Bars
- 1,771 square metres of events & meeting space
- 2 sky gardens
- 2 outdoor pools (Level 6 & Level 18)
- GFA = 47,935 square metres
- Luxury collection of the Marriott brand.

Primary Air Handling Unit



Schematics


19440 CMH
14256 CMH
20790 CMH
35046 CMH
14256 CMH
FA
35046 CMH
33696 CMH
HX
PAU
EA
16848 CMH
33696 CMH
16848 CMH
PAU-HTL-STW-18-2
TEF-HTL-STW-18-02a & 02b
16848 CMH-N
HX-HTL-STW-18-02

Alternatives

- Are there alternative technologies to reduce the %RH of fresh air to under 60% using lesser / minimal energy in the current climate here at Singapore?

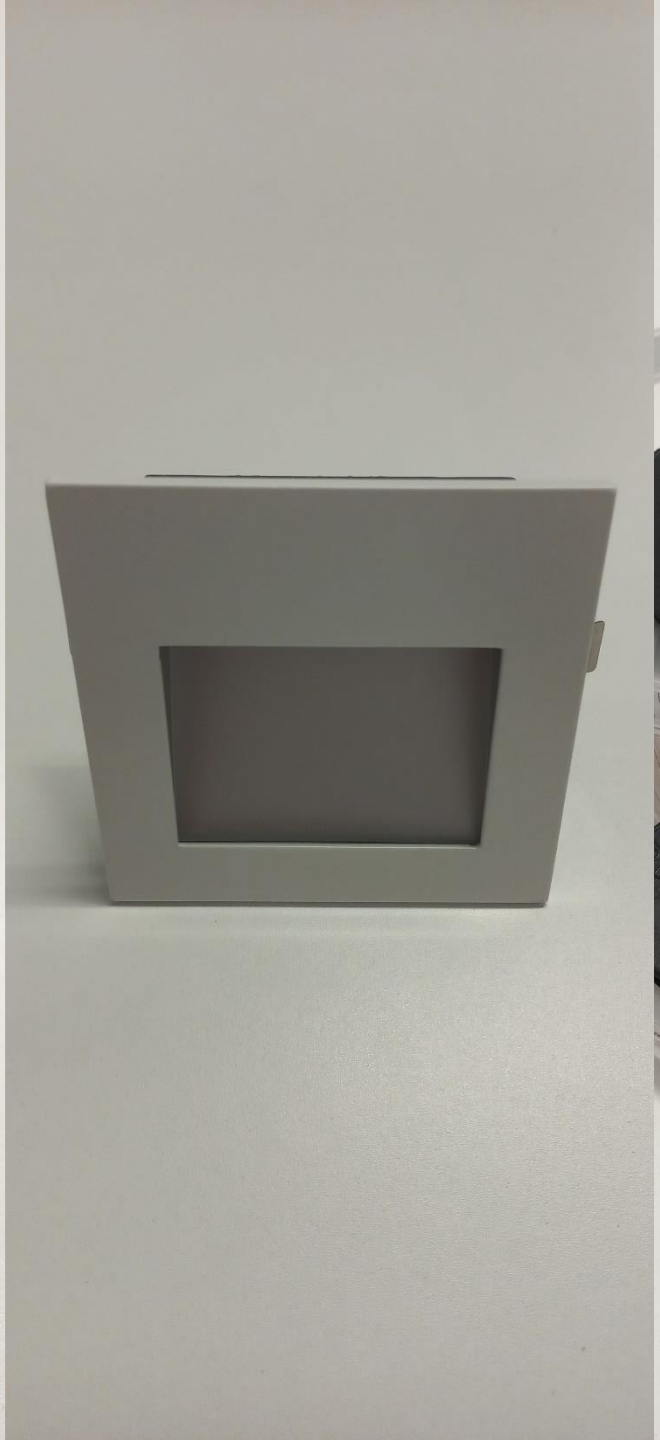
- If the current technology is still used, a huge amount of chilled condensate water is produced. Can the potential energy in the chilled condensate water be used as a renewable source?

Light Emitting Diodes

How low can we go?

PHILIPS

Dimmable
6.5W 24D 2700K 500lm 650mA
12V AC electronic 2800cd
Made in China 9290030719



LRS-50-12
MEAN WELL ENTERPRISES CO., LTD.
No. 28, Wuquan 3rd Rd., Wugu Dist., New Taipei City 24891, Taiwan
Manual:www.meanwell.com/manual.html
INPUT :100-240V~ 1.0A
ta:50℃ cos φ:0.45 50/60Hz
OUTPUT : 12V 4.2A
MW01 (中国制造)
MADE IN CHINA
L
N
-V
+V
+V ADJ

PHILIPS
Electronic Transformer
电子变压器
ET- E 60 220-240V
9137 100 311
电源电压 Uin: 220-240V~
电源频率 fn: 50/60 Hz
输出功率 PL: 20-50 W
ta: -20...50 °C
tc: 65 °C
输出电压 Vout: 11.3 V~
安全标准 Safety: IEC 61347-2-2
SELV
Transformer
电子变压器
INPUT
输入 220-240V~ 50/60 Hz
白色 White
黑色 Black
蓝色 Blue
红色 Red
OUTPUT
输出 11.3V~ max. 1.5m

PRI
BL N
BN L
SH-3-350 IP65 SB 3W
EAGLERISE LED POWER SUPPLY
Prated:3.5 W max. GMA-510649
λ=0.5-0.7 ta:50°C tc:75°C
PRI:100-240 V~ 50/60 Hz 0.1 A max.
SEC:DC 350 mA(C.C.) 2.5-10 Vdc
max.18 V
IP65 only for driver body
RD +
BK −
SEC

A typical room has:

Type	units	Watt	Total (Watt)
MR 16 (12 V) – Dim	11	6.5W	71.5
Wall LED (12 V)	2	1.2W	2.4
E27 LED	4	4.3W	17.2
Strip Light LED	9m	15W / m	135
		total	226.1W

Per room / year	Per hotel / year	% from total	
(Assuming continuous use of 24 hours)	X 634 rooms		
1,981 KWh	1,255,954 KWh	Approximately 11%	Can we reduce this by 60% ?

What about the effects of harmonics?

- *“With a system of LED lights in place, harmonic distortion can occur due to the load. Harmonics can cause stress on equipment and the electrical distribution network, causing increased maintenance costs and downtime. In some cases, harmonics stress may go unnoticed until there is a complete equipment failure” – Schneider Electric*

- There are more and more studies conducted on the negative effects of harmonic distortion from the use of widespread LED’s.
- What can we do about it?
- How do we measure it?

THANK YOU!