



Green HVAC NABERS + JV3

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Edefice



NABERS

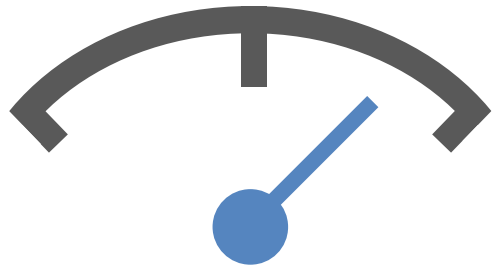


Video courtesy NABERS

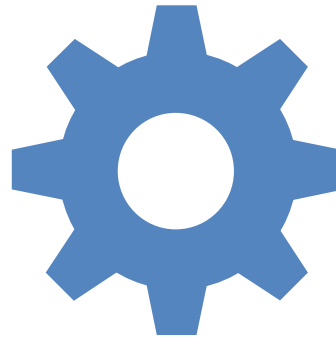




NABERS



Based on
metered
performance



Technology
neutral



Fair
comparison



1 STAR
POOR

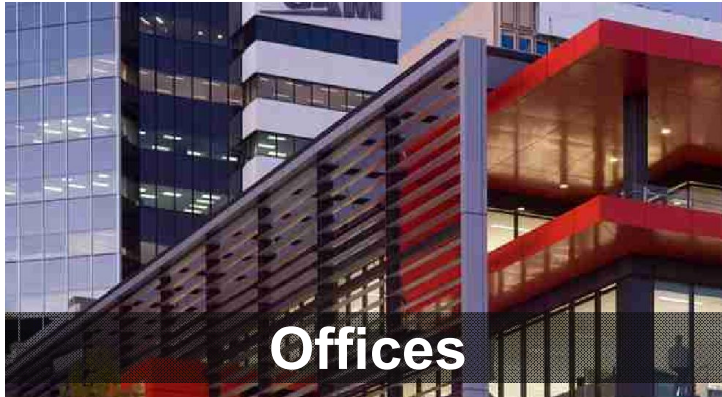
2 STARS
BELOW
AVERAGE

3 STARS
AVERAGE

4 STARS
GOOD

5 STARS
EXCELLENT

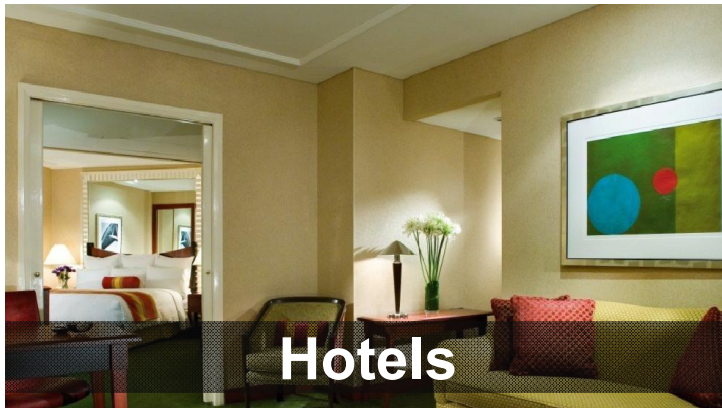
6 STARS
MARKET
LEADING



Offices



Shopping centres



Hotels



Data centres





NABERS + HVAC

Energy

- Energy consumption of HVAC system
- Co/tri-generation

Water

- Cooling towers
- Evaporative cooling
- Fire systems

IEQ

- Thermal comfort: temperature, humidity + air speed
- Ventilation
- Pollutants
- Acoustics
- Maintenance and cleaning of air systems



Who owns what (HVAC)

Base building

- Main HVAC system
- Central plant (chillers, boilers, cooling towers, pumps, AHUs etc)
- Supplementary chilled or condenser water circuit (pumps, cooling tower etc)
- Measured IEQ parameters (T°C, %RH, air m/s, pollutants ppm, sound dB etc)

Tenant

- Supplementary HVAC e.g. comms rooms, meeting rooms, individual offices. Based on *specific tenant requirement*.
- Occupant satisfaction survey for IEQ (tell me, how do you *feel*)



Commitment Agreements

- Allows owner to market NABERS performance prior to formal rating
- Requires energy modelling in accordance with strict protocols
- Independent design review
- “What if” scenarios



Designing for NABERS

- Fit for purpose
- Size for purpose
- Simplicity
- Controls
- Metering
- Commissioning
- Designing for *people* comes first



NCC Section J

Mandatory compliance

Deemed-to-Satisfy (DTS) provisions for:

- J1 – Insulation
- J2 – Glazing
- J3 – Sealing
- J5 – HVAC
- J6 – Lighting
- J8 – Monitoring and Maintenance



JV3

- “Alternative solution” used instead of Deemed-to-Satisfy (DTS) e.g:
 - Too much glazing
 - Insufficient space for economy cycle in retrofit
- Looks at building as a whole
- Compares energy consumption of proposed building to one which complies with DTS



Modelling for JV3





JV3 modelling method

- Reference building complies with DTS requirements
- Protocol specifies loads and profiles
- Reference and proposed building must be identical w.r.t. façade, layout and HVAC system
- Specific parameters change based on DTS provisions (e.g. R Value, U Value/SHGC, O/A rates, pump and fan powers, lighting energy)