

Beginner's Guide to Heating, Ventilation and Air Conditioning (HVAC)

Around 40 per cent of total building and 70 per cent of base building (i.e. landlord) electricity consumption can be attributed to heating, ventilation and air conditioning (HVAC).

Ensure that your tenancy is not working against the building's HVAC systems by minimising unnecessary heat gain, e.g. from office equipment and considering elements such as air-flow when implementing office fit-outs. Avoiding unnecessarily energy loads will help to make the whole building more energy efficient, unlocking further savings for both your business and others in your building.

Adjusting indoor temperature settings by 1 degree can result in a 5-10% energy saving for the base building. Flexibility in temperature setpoints can offer big savings without compromising occupant comfort.

Achieving good indoor environment air quality influences how people perceive their workplace and can have a significant effect on worker productivity.

Quick Guide

For tenants to improve Heating, Ventilation and Air Conditioning (HVAC):

- Choose to tenant a high performing building with a good NABERS rating (4 stars or higher)
- Make energy savings throughout the tenancy that reduce heat load on the HVAC systems
- Work with facilities management to optimise the base building's heating and cooling efficiency, including the temperature settings.
- Consider the impact on base building heating and cooling systems when doing fit-outs or refurbishments (including positioning of vents)
- Undertake a NABERS indoor environment quality (IEQ) rating

Select a Green Tenancy

In Australia, all sellers or lessors of office spaces of 1000 square metres or greater must obtain and disclose a current Building Energy Efficiency Certificate (BEEC), which includes an energy star rating and lighting assessment. The more tenants there are demanding green office spaces, the more of a priority it is for facilities managers to provide high performing base building services.

Visit the CitySwitch website for detail around [Best Practise Leasing](#).

HVAC Efficiency

- Reduce heat loads from lighting and equipment; this will reduce the need for HVAC
- Develop a relationship with the facilities manager; tenants can be more active in helping to optimise their heating and cooling effectiveness
- Make staff aware of how to operate advanced features of the HVAC and lighting system
- Ensure that staff are not operating personal heaters and other appliances that could affect the operation of base building HVAC systems

Beginner's Guide to Heating, Ventilation and Air Conditioning (HVAC)



- Where possible, encourage staff working after-hours and on weekends to use areas that are served by supplementary HVAC systems so that the entire HVAC system need not be in operation
- Ensure windows and doors are kept closed when the building is unoccupied during temperature-controlled seasons; report any gaps in window sealing to the facilities manager
- During summer, close window shading devices to reduce air conditioning loads. During winter, open window shading devices to allow natural heating from sunlight
- Ensure that HVAC systems are switched off after-hours and that cleaning staff understand expectations of how and when to operate air-conditioning
- Encourage staff to dress for the season to accommodate small increases in internal temperature range
- Understand and discuss HVAC temperature set-points with the facilities manager
- Set-point temperatures should be set to 20-22°C in winter and 24-26°C in summer
- If you have control over the Building Management System (BMS), ensure that the set temperatures and performance are reviewed regularly
- Set Building Management System (BMS) to allow for a 3°C “drift”; this can result in up to 20% savings in air conditioning costs

Resources

- [Office of Environment and Heritage HVAC Business Guide](#)
- [COZero Set points - Deadbands and Proportional Bands HVAC Guide](#)

Case studies

[Tandem Energy HVAC and BMS case study](#)

Incentives

City of Adelaide Sustainability Incentives Scheme:

Energy Monitoring Systems

City of Adelaide offers rebates for Installation of an energy monitoring system for 50% of the installed cost up to a maximum of \$1000. [Details and eligibility](#).

NABERS Energy tenancy rating

City of Adelaide offers rebates of 50% up to a maximum of \$2,500 to office tenants participating in the CitySwitch Green Office program who undertake an accredited NABERS Energy tenancy rating. [Details and eligibility](#).

Beginner's Guide to Heating, Ventilation and Air Conditioning (HVAC)

Updated July 2018, CitySwitch Adelaide
www.cityofadelaide.com.au/cityswitch

