WT Sustainability  
No Compromises for a 6 Star Tenancy

**Walking the talk**
WT Sustainability (WTS) are specialist sustainability consultants for the built environment. WTS took the opportunity, when fitting out their new office in North Sydney, to use in-house expertise and knowledge in integrating sustainable design and construction practice and initiatives.

**Starting with measurement**
NABERS and Green Star tools were used to control and monitor WTS’s sustainable design and construction targets. With energy efficiency core to WTS’s business, the organisation set a goal of achieving a 6 Star NABERS Energy rating. They also targeted a 5 Star Green Star tenancy rating. Putting this target into perspective, they were the first CitySwitch Signatory to commit to and achieve a 6 Star NABERS Energy rating, which translated to using 78 per cent less energy than an average office tenancy.

To achieve their ambitious targets, WTS focused on the high-energy consumers of the tenancy, including supplementary air conditioning, lighting and office equipment. With planning and constant monitoring and review, WTS demonstrated that tenants can easily achieve a top performing workspace with minimal inconvenience and budget.

**GOALS**
- Achieve a 6 Star NABERS Energy rating
- Create a sustainable workplace without loss of amenity or inconvenience to occupants
- Demonstrate that superior energy efficiency targets are within reach of all tenants

**Signatory status**
- Date joined CitySwitch: March 2012
- Tenancy size: 204 sqm
- NABERS commitment rating: ★★★★★
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- Website: www.wtsustainability.com.au

**Key outcomes**
- Annual financial saving: $6,600 (compared to an ‘average’ office)
- Annual energy saving: 23,800 kWh
- Annual CO₂ saving: 25 Tonnes of CO₂e
- Technology: E1 lighting, occupation sensors, timed power circuits, energy meters, laptops, LED LCDs and high efficiency printer/copier
- Awards: CitySwitch Signatory of the Year (under 2000 sqm) 2013, CitySwitch Partnership of the Year 2013 (in partnership with RICS, J Goddard & Co and UXED)
Avoiding supplementary air conditioning
Supplementary air conditioning is normally installed to address cooling in computer rooms and high-occupancy meeting rooms. WTS avoided the use of a supplementary air conditioning system for meeting areas by integrating these into the open-plan office and balancing the base building air conditioning to suit the tenancy layout. The use of a supplementary air conditioning system for their computer room was avoided by simply not having one. The communications equipment is located in a special rack within the open office space, and it was chosen to be low-power and temperature tolerant.

Optimising lighting controls
The building owners replaced the existing tenancy lighting with E1 fittings which resulted in a baseline illumination power density (IPD) of 5.85W/sqm. A high level of lighting control was negotiated with the light fitting suppliers Envirolight, and allowed occupancy sensors to control lighting in zones of 30 sqm or less. Other features include the dimming of lights to 50 per cent if no occupancy is sensed after five minutes. After a further five minutes, if no occupancy is sensed, the lights turn off. The sensing times are quicker for areas which are infrequently occupied, such as the tea area and photocopier area. A ‘kill switch’ to turn off all lighting systems and their controls at the mains was installed next to the front door. A policy of ‘last one out turns off the lighting’ was introduced so the occupancy sensors weren’t operating and drawing power throughout the night when no one was in the office. All lighting, not just those along the perimeter, is controlled by photoelectric cells, ensuring they turn off when there is adequate daylight. The office layout itself was also designed so that low-height and glazed office partitions allow for as much natural daylight access as possible - 86 per cent of work settings based on Green Star calculations.

Selecting appropriate office equipment
A key aspect of any tenancy fitout, and one that plays an important role in delivering energy efficiency, is controlling ‘small power’ loads. Timed power circuits were installed to all work stations at WTS’s tenancy allowing for power to most outlets to be cut ‘out of hours’ and therefore eliminating standby loads. The second circuit, which is a 24-hour circuit, was included to allow workstations to be switched over and used after hours. Staff are encouraged to avoid leaving anything plugged into the 24-hour circuit when they leave for the day.

WT Sustainability is recognised as a leader in delivering energy efficient outcomes for clients, so obviously we need to ensure our own house is in order. We applied the same principles that we would seek to do with external clients. Whilst the process was not without difficulty, the results speak for themselves. When problems were encountered it reinforced something I have long known - never underestimate the need for an energy champion.

Steve Hennessy, Director
WT Sustainability
Appropriate equipment selection has also played a large role in energy efficiency. All WTS computers are laptops with large LED screens that make it easy to review documents side-by-side to save on printing costs. These screens use half the power of comparable LCD screens.

WTS’s colour printer is an LED multifunction device that costs no more than comparable 32 page per minute machines, yet it uses up to 75 per cent less energy. This device is connected to the timed power circuit, and goes into standby mode after just 60 seconds.

The office server is located offsite, though there is a small rack of communications equipment, including a VOIP telecommunications hub and a 30mbs data link.

All office whitegoods, such as fridges and microwaves, are highly energy efficient. The existing instantaneous hot water unit has been disconnected, with staff opting instead for a kettle and filling and heating only the quantity of water required.

Install effective monitoring

Following the old management adage that “you can’t manage what you don’t measure”, WTS installed sub-meters, accessed via a web interface, to monitor energy efficiency performance. Both lighting and power are separately metered, providing assurance that energy use is on track to deliver a target 6 Star rating, and has helped identify even greater savings.

Result: looks are deceiving

If you were to walk into the WT Sustainability office, you might be surprised. Yes, lights would be off in areas that were not being occupied, but other than that everything looks ‘normal’. The lights are bright (when needed), the IT equipment all works as it should, no one’s working environment is compromised in any way. In short, WTS goes about their daily business without any loss of amenity, yet this tenancy uses 78 per cent less energy than a typical office.

Esther Bailey, National Program Manager
CitySwitch Green Office