

Case Study Arup Brisbane

Technological innovation at a landmark fit-out



Arup is the creative force at the heart of many of the world's most prominent projects in the built environment. From 92 offices in 37 countries, the firm's 10,000 planners, designers, engineers and consultants deliver innovative projects across the world with creativity and passion.

The fit-out journey begins

A commitment to sustainability combined with a preference for a highly interactive team-based work environment inspired Arup's Brisbane office fit-out in 2009.

The resulting open plan layout has created a light-filled and contemporary space and the fit-out incorporates a range of sustainable features in its design and choice of furniture and fittings. The space is very interactive, with a staircase connecting all floors, features a number of breakout spaces, plants and visible greenery, user controlled blinds on all facades and good natural light.

As part of this fit-out, Arup rolled out plant and equipment upgrades, commenced a lighting retrofit, embodied energy efficiency into policy and implemented a number of innovative staff engagement programs.

Lighting retro-fit: first steps

First steps of the lighting retrofit included an Energy Audit to identify practical measures to improve energy efficiency.

Based on the outcomes of the audit, a trial was undertaken to test various lighting technologies within the working office to determine what systems would be most suitable for use in the future.

Key actions as a result of the lighting trial so far include:

- Correction of daylight balancing issues of perimeter lights

- Adjustment of movement sensors
- Estimation of costs, savings and payback periods
- Identification of opportunities to further educate staff of existing demand-based lighting controls, so for example air conditioning is operated in meeting rooms on a needs-basis only.

Arup's lighting solutions testing continues but for the short-term it's clear that putting the effort into monitoring and looking how staff interact with and use the space is just as important as the application of technical solutions.

The role of ongoing monitoring

A Tridium system provides ongoing monitoring through Arup's lighting sub-metering system. Enabled by a NIAGARA energy management framework, the Tridium building automation system software

ARUP



Signatory status	
Date joined CitySwitch	April 2009
Tenancy size	5,600 sqm
NABERS Commitment rating	★★★★
Website	www.arup.com
Key outcomes	
NABERS Energy rating	★★★★
Key initiatives undertaken	Office fit-out, behavioural change initiatives, sub-metering, lighting retrofit, equipment upgrades, real time energy monitoring

Data visualisation: communicating energy savings

enables the integration of various automation and control systems into one interface and facilitates not only integrated monitoring, but ultimately active intelligent building control from one desktop.

Arup are currently at phase one of the data integration, having connected all power and lighting sub-meter data to the system as well as a data monitoring that reports back on which PCs are left on at night time or over the weekend.

Engaging staff with technology: real-time data visualisation

Developed internally by Arup, an Office Realtime display takes in data feeds from various sources including the Tridium system, invoice and procurement data and office equipment.

The system allows staff to directly see their energy, water, paper consumption and 'switch-off' trends plus the screen displays public transport and pool-car usage information.

The system ensures:

- a correlation between individual actions and overall outcomes
- that ongoing progress is tracked and compared over time and across interstate offices
- that this progress is analysed each month to identify what measures can be undertaken to ensure increased energy and water efficiency.

CitySwitch Green Office is a national program working in partnership with Australia's leading commercial office tenants to improve their energy efficiency, thereby reducing the CO₂ emissions that contribute to climate change.

CitySwitch Green Office partners



Bringing staff along the journey

The impact of various projects was significantly increased by combining technical solutions with successful staff engagement.

Complimentary to the Realtime data visualisation system, one of Arup's innovative education programs was the "Biggest Energy Loser" competition where office floors competed with each other to reduce energy consumption.

An active environmental volunteer team also coordinates various initiatives within the office such as the 'Be an energy hero' poster campaign.

Arup leads in innovative approach to energy efficiency

The energy efficiency journey continues however in the meantime their efforts were recognised in December 2011 when the Brisbane tenancy was awarded the 'CitySwitch National Signatory of the Year'.

"In addition to walking the talk, Arup has really stood out his year for market innovation. Leveraging existing technology to generate real time data is no easy task. We commend them for looking into the future and creating practical solutions for making the invisible visible."
CitySwitch National Award judges

"To be the first Brisbane Signatory to have won the national title is an achievement we are exceptionally proud of. This outcome is a reflection of all our staff and their commitment to understanding and reducing their day-to-day energy consumption in the office. It is also a testament to our sustainability and buildings specialists who made a significant contribution towards achieving our NABERS Energy tenancy rating."

Martin England
Acting Brisbane Office Leader
Arup

Get involved

Arup is part of a national network of businesses that, through CitySwitch, are playing an important part in reducing the carbon emissions of our cities and demonstrating a high level of environmental leadership and action.

Join CitySwitch and get support and recognition to drive your business efficiency through sustainability: visit www.cityswitch.net.au