

# Garigal Strata Offices, Belrose, Sydney

By Michael Mobbs, 1 March 2007

**The story of how David Hawes learnt to count when he got to strata office building number three.**

1. Ten years ago the Sydney developer, David Hawes, and agent, Andrew Callaghan, identified a new market for Sydney's northern suburbs - the home office away from the home; strata offices with a difference.
2. David's first two strata office buildings at the Belrose Business Park were built in the 90s and sold well. Buyers have almost doubled the price of their strata units in six years.
3. Sales remain strong in the two existing buildings: please refer to sales graph, below.
4. In 2006 Hawes built a third new building in the same business park for this market, called Garigal. Garigal's 83 units are now selling. Garigal adds another first for Sydney's general strata offices market; real sustainability. "In a way, I think it took me 'til this third building to learn to count all the things that matter", says Hawes.

## **5. Why did Hawes make the third strata building sustainable?**

"About four years ago I decided to change the way I did business. I chose to put the environment into my projects. I could see that my buildings had an impact beyond the site. The way they were designed to use energy and water could have a positive or a negative impact on natural resources. And I could see the price of energy and water going up as we run out of these essential resources. We had completed our initial plans and decided to change them because they took no account of the environment. I decided to reexamine the whole financial premise of the building to focus on making Gargle sustainable, to conserving energy and water. I wanted Garigal to use the least amount of water and energy.

So I asked my project team to review all their work and make the project sustainable, to redesign with the goal of being disconnected from Sydney Water and remove the need for an electricity substation. The target was to make the energy and water systems as sustainable as we could. We had already bought the site and it was pretty degraded, just a big bare treeless space at the bottom of the business park being used as a storm water detention basin for the existing buildings. It was long and skinny and faced west, the worst possible aspect. So it was a tough task. I retained Michael Mobs to coach the project team and with his advice we worked as hard as we could on the 80% of things we could do and we didn't beat ourselves up about the 20% of things we could not do – such as fix the existing layout of the block. We have overcome the western sun using blinds, achieved excellent natural ventilation, recycled sewer and caught rainwater for irrigation and toilet flushing, implemented a range of other features to drive down running costs, and installed overhanging balconies that are huge compared to the rest of the industry and maximised occupant enjoyment of the unique working environment.

As it turns out, the project and market is ideal for the changed strategy. Strata office owners regard their offices in much the same way as they do their home, and they take real pride in them. It makes sense for Garigal owners to use the least amount of energy and water, and to have real control over their cost of doing business. That's as important to many people as the purchase price."

6. Of the two types of offices, the most difficult to make sustainable small strata offices. The other type, the single owner, single tenant office is the easiest because there is no need to consider how to sell or lease it to meet the desires of the market place. For example, many buyers and tenants see air conditioning as essential yet it's the single most damaging thing an office does to the environment. How to design and sell a building for up to 83 different owners and which offers air con but does not need it? That was the most difficult design task faced. Until now, the result has been that, with some notable exceptions, such as the 60 L building in Melbourne, the single owner, single user offices have dominated the sustainable office market eg Lend Lease's 30 The Bond in Sydney. Those buildings have a 'one size fits all' solution for all features, including air con, lighting, ventilation, etc simply because they do not have to be sold or leased.
7. Strata offices are the most difficult to make sustainable because the owner or developer has limited power over the part of the building for which the design and usage decisions remain within the control of the tenant or strata owner. Those parts – partitions, openings, colours – are chosen by the tenants or buyers. But Hawes has designed the base building at Garigal to be the easiest space for strata owners to go sustainable if they choose. Sustainability Coach Michael Mobbs who worked with Hawes and his team through the project says, "I'm impressed with the way David has insisted throughout the project that this new building will overcome some tough design and operating problems".
8. **Garigal to pay buyers to go green.** In what may be the first of its kind in Australia, Hawes is offering buyers a \$1,000 rebate on the purchase price if they choose to install nominated energy efficient appliances, tapware, etc Garigal will reimburse buyers up to \$1000 against any purchase or installation. For example, if a buyer buys a 4 star fridge for \$2,000 Garigal will pay them \$1,000. If they install 1 motion detector (to reduce electricity use for artificial lighting) for \$500, Garigal will reimburse \$500. If they install 3 detectors for \$1,500 we will reimburse \$1000. This clause is in all contracts for sale.
9. There is also an 'Owners Guide' to give buyers advice about how to use the offices to use the least amount of energy and water.  
  
Garigal's free Owner's Guide gives tips for keeping their office air fresh and clean, using the least amounts of energy and water, and buying energy and water efficient appliances. There are also tips on how to travel and cut climate change, how to buy 'green' cars, how to travel 'green', how to reuse office equipment and waste from the office.
10. The results? On average, each year an average strata owner in Garigal is expected to halve their energy use and cut their water and energy bills by \$1,175 compared to the other two buildings. That's a saving of about \$20m2 for a 65m2 strata unit. Each average sized 65m2 unit with about 2 workers is expected to:
  - a. Save over 15,349 litres of water compared to a business as usual, or over 1,274,000 litres for the whole building
  - b. Save over 15,000 litres sewage polluting the Ocean - the whole building prevents 1,274,000 litres of sewage polluting the Pacific Ocean (these figures assume that most of the water used in the typical office leaves as sewage)
  - c. Cut climate change pollution by over 5 tonnes a unit per annum and the whole building will cut climate change pollution by over 415 tonnes a year (see Note 1, below)
11. A key achievement of the project is the low cost to the developer of the green ideas which cost an additional **8%** of the total building cost of **\$12.5m; the green initiatives cost \$1m.**

12. Garigal’s total investment in going sustainable has cost Hawes \$1 million out of a total construction cost of \$12.5 and the annual saving is projected at \$97,519 giving a theoretical payback of approx 10 years. As Hawes will sell the units, however, he will not receive any financial payback from the \$1m additional investment he has made in the building; those operational savings will be enjoyed by the buyers of the building’s units.

# Facts

## Sales



Source CBRE Northern Beaches

## Cost to **operator of saving water and energy**

The table below compares the capital costs for Garigal’s environmental initiatives. It compares costs against the total savings (for whole building) to arrive at a payback period. It shows the various costs of the total ESD costs, and at the end of the table the % of ESD costs to total construction cost.

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Most of the initiatives have an excellent pay back period with the exception of the natural ventilation. This is distorted to some extent by the cost of the external blinds - but these are essential if occupants are to turn off their aircon and open windows (to cut running costs, and to get healthy fresh air). The real benefit therefore in the natural ventilation is in occupant comfort rather than purely economic or green house benefits.

The water saving payback is also distorted due to the rates saving for a strata building. If this were a single owner / tenanted building there would be no cost saving or payback, but rather an extra cost for running and maintenance over the water usage and rates saving. This result reflects the poor (almost irrelevantly low) pricing of water.

GARIGAL- 23 NARABANG WAY BELROSE

ESD INVESTEMENT ANALYSIS

ADDITIONAL CAPITAL INVESTEMENT			RUNNING COSTS PA		
ITEM	\$ COST	%OF ESD COSTS	ITEM	\$ COST	PAYBACK YEARS
<b>WATER</b>					
Recycle Sewer System			Rates reduction	-31,872	
Rainwater Tanks			Water saving	-1,500	
Equipment structure			Trade waste fees	500	
			Power costs	1,660	
			Maintenance costs	6,000	
<b>TOTAL</b>	<b>120,045</b>	<b>11.9%</b>	<b>TOTAL</b>	<b>-25,212</b>	<b>4.8 years</b>
<b>AIR-Mechanical</b>					
Inverter AC Units			Reduced power cost	-27,971	
Individual Unit Outside air					
<b>TOTAL</b>	<b>85,010</b>	<b>8.5%</b>	<b>TOTAL</b>	<b>-27,971</b>	<b>3 years</b>
<b>AIR-Natural</b>					
Louvre Windows			reduced power-units	-9,379	
Heat Chimneys			reduced power-lobby	-3,543	
Automated External Blinds					
Delete lobby Air Conditioning					
Auto clerestory windows					
<b>TOTAL</b>	<b>698,192</b>	<b>69.5%</b>	<b>TOTAL</b>	<b>-12,922</b>	<b>53.4 years</b>
<b>POWER</b>					
Efficient Corridor lighting			(Reduce power-House	-22,800	2 years
Efficient Car Park lighting			(		
Mono space lift vs hydraulic			reduced power lifts	-1,639	21 years
EfficientOffice lighting			Reduced power-units	-6,640	1.8 years
Solar Hot water			reduce power Hot W	-335	33.7years
<b>TOTAL</b>	<b>101,394</b>	<b>10.1%</b>	<b>TOTAL</b>	<b>-31,414</b>	<b>3.2 years</b>
<b>TOTAL CAPITAL COST OF ESD INITIATIVES</b>	<b>1,004,641</b>	<b>100.0%</b>	<b>TOTAL RUNNING COST SAVINGS</b>	<b>-97,519</b>	<b>10.3years</b>
<b>ORIGINAL BUILDING BUDGET</b>	<b>12,500,000</b>				
<b>ADDITIONAL ESD COSTS AS A PERCENTAGE OF CONSTRUCTION COST-</b>				<b>8.00%</b>	

## Some calculations

When the building is fully tenanted, we estimate Garigal will be treating 4,900 litres per day x 5 days x 52 = 1,274,000 litres pa; that's the amount of sewage Garigal will not be sending in Sydney Water's sewerage system to pollute the Pacific Ocean.

The excess treated water from the sewage treatment system is to be used for drip irrigation is estimated at 1900/day x 5 x 52 = 494,000 litres pa. This is about our irrigation demand, so this is the amount of potable water Garigal will be saving. When that amount is divided by the number of units (83), the average unit will save about 5,951 litres of dam water a year.

These figures are all based on a fully occupied building. In the interim, until the building is fully sold and occupied, the volume of excess treated sewer will be less, so Garigal will need to supplement its irrigation with the stormwater tanks installed with a 40,000 litre capacity. In theory Garigal could collect up to 1 million litres of water pa off the roof, based on the average annual rainfall for Belrose, however in reality, during heavy rains, the tanks will fill in a couple of hours and the excess will go to the bush, so Garigal's total collection will be a lot less. Nonetheless, Garigal should never need to use potable water from the mains once the building occupancy is established. The bush will receive a little more 'wasted' rain water from Garigal than it would have received in its natural undeveloped state.

1. NOTE: In NSW, 1 kilowatt hour (kWh) of electricity produces 1.08 kilograms of greenhouse gas whereas the same amount of energy from natural gas produces only 0.0594 kilograms of greenhouse gas. Therefore, energy from coal (electricity) is more "greenhouse gas intensive" than natural gas. The 60 Watt light bulb from above, which runs all year and uses 526 kilowatt hours of electricity, generates 568 kilograms of greenhouse gas. 1000 kilowatt hours = 1 Megawatt hour = 1.08 tonnes carbon dioxide per year.: DEUS:  
<http://www.energysmart.com.au/sedatoolbox/esm1.asp> Viewed 1 March 2007

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