

# Team approach gets results at Wellington District Court



An energy efficiency drive at the Wellington District Court building has delivered an energy saving of 27% per unit of floor area between 2001 and 2003. ▶

THE GRAPHS TELL THE SAVINGS STORY ... FROM LEFT, **JOHN GALLAGHER**, CONSULTANT, **ANAX**; **PETER APPLEBY**, ACCOUNT MANAGER, **ADVANCED BUILDING SERVICES**; **WELLINGTON AREA COURTS MANAGER PETER BATCHELOR** (STANDING); BUILDING MANAGER **WAYNE HUNN**.

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The team working on Wellington District Court's energy efficiency programme shows no sign of winding down, despite already achieving results that rank the building among the country's most energy efficient air conditioned premises.

At the 13-year-old Wellington District Court building, a programme of small, incremental enhancements funded through existing maintenance budgets has been delivering outstanding results.

Total usage for the 2003 calendar year was just 162.5 kWh per square metre of floor area – a 27% saving on 2001 and down 17% on 2002.

That ranks it among the most energy efficient air conditioned buildings in the country, though EECA Emprove account manager Dan Coffey points out that the building's open spaces make it easier to get rid of unwanted heat.

The air conditioning doesn't have to contend with as much computer heat as typical high-intensity offices.

Coffey says the District Court effort is part of a drive throughout the Government sector in Wellington, which is abuzz with new construction and refurbishments, to seriously address energy efficiency issues.

He says the public sector appears to be on track to meet the EnergyWise Government's 2000 target of a 15% sector-wide drop in energy use by 2005.

The Courts building in Ballance Street sits on the

fringe of Wellington's government precinct. Its eight above-ground floors and two underground parking levels amount to 9050m<sup>2</sup> of net lettable area. It has 11 courtrooms, eight hearing rooms, 20 judges' chambers and 22 cells. Administration functions are spread throughout three floors. The building also houses the Collections Unit, Special Jurisdictions, Environment Court, Community Probation and the Courts' Wellington regional office. Around 120 people work in the building and at peak times, like Monday mornings, it also houses up to 150 "extras" including jurors, lawyers, police and defendants.

Wellington area Courts manager Peter Batchelor says the building was "not in a healthy state of repair" when he arrived in early 2001 from the Courts national office. "We seemed to have a plumber in here every second day, and staff were always complaining about it being too hot or too cold.

"It was clear that we needed to do a thorough upgrade of things like plumbing, electrical services and the lifts," says Batchelor. "And we needed to be more proactive about those things."

## Crack team

Wayne Hunn, formerly building custodian with Wellington City Council, was hired in December 2001 and asked to get the building into shape. Improvements in energy efficiency and building users' comfort levels were part of his brief.

Batchelor says he left the details to Hunn, working in collaboration with Anax consultant John Gallagher and account manager Peter Appleby of

**1 ENERGY MONITORING EQUIPMENT SITS ALONGSIDE CLOSED CIRCUIT TV SECURITY DISPLAYS IN THE COURT BUILDING'S CONTROL ROOM.**

**2 ENABLING THE TWO ROOFTOP CHILLERS TO OPERATE INDEPENDENTLY PRODUCED IMMEDIATE SAVINGS, SAYS BUILDING MANAGER WAYNE HUNN (PICTURED).**

Advanced Building Services (Wellington) Ltd (ABS), which took over the building maintenance contract in mid-2002.

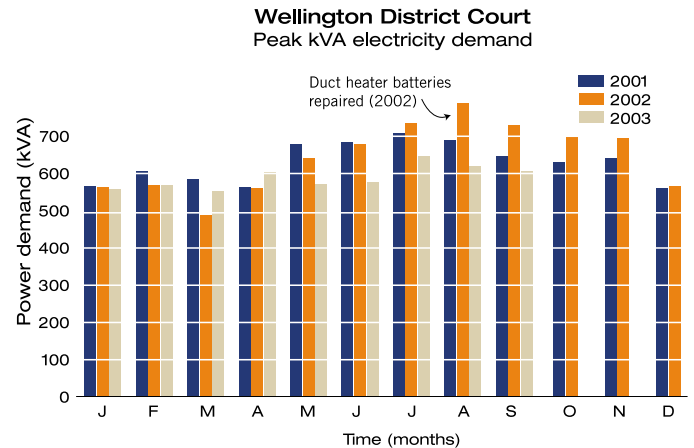
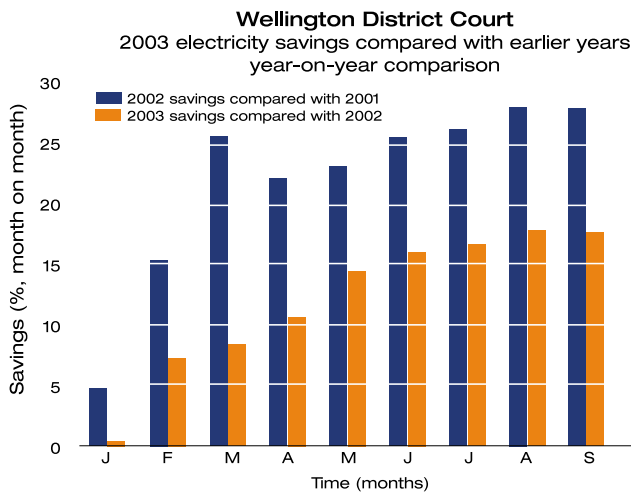
"My expertise is running the court's business, not running a Courts building, so I needed advice and expertise in that area," says Batchelor.

Gallagher and Appleby say that while Batchelor's enthusiasm for the energy efficiency programme was invaluable, Hunn quickly showed his willingness to drive it. "He's the one who has made the project successful, and he hasn't let go at any stage," says Gallagher.

## Pool of expertise

Hunn says the programme has evolved through regular brainstorming meetings. Much cross-pollination of ideas has come from Gallagher's and Appleby's involvement with energy efficiency programmes in other large Wellington buildings. With ABS taking care of 70 buildings in central Wellington, including Te Papa, the Reserve Bank and Treasury, Appleby can call on a vast range of experience.

Gallagher says he was initially asked, in early 2002, to prepare a "quick analysis" of the electricity accounts. But with the availability of highly



experienced ABS as a newly appointed contractor and Hunn's ability to drive an ongoing project, Gallagher recommended bypassing the usual energy audit approach. "I felt the audit was going to be done in a rather restrictive way so I proposed using Wayne [Hunn] and ABS as a conduit for items requiring investigation," says Gallagher. "The idea was to let Wayne get on with it, with the expertise of ABS as a knowledgeable contactor and myself."

He says committing to the programme involved something of a "leap of faith" by Courts management. "We had to say that we didn't know at that stage just what we would do. There was no easy checklist to show them; it wasn't like an audit exercise where you come up with a list and provide some guidance, then walk away and leave them to it.

"We identified at an early stage the things where we could make good savings, and identified who would do what. The way the ideas developed was very successful. We asked each other questions, and identified the opportunities."

An early item on the agenda was the building's two rooftop chillers, which had been designed to run in tandem. A simple modification by ABS means they are now operated separately, allowing much better control of energy use.

Hunn, meanwhile, started going through the building with a fine-tooth comb. Removing every second fluorescent tube in over-lit corridor areas produces savings of about \$15 a year for every one removed and halves the tube replacement costs.

A gradual tube replacement programme, introducing

## Maintenance upgrades have virtually stopped complaints from staff about being too hot or too cold.

"virtual daylight", means only two new-style white light tubes are needed in areas previously lit by three old yellow light tubes. The result is savings of one-third in electricity consumption and a greatly enhanced environment for users.

Regular cleaning of diffusers and reflectors throughout the building also improves the effectiveness of lighting, he says.

Batchelor says the outstanding energy savings have been achieved at a time when computer use in the building has increased by three or four times with the introduction of electronic processing for all court cases.

Usage also increased as an unexpected side-effect of the comprehensive maintenance upgrade begun by ABS. "Lots of electric duct heater batteries were not operational and as ABS repaired these and they came back into service, we found we were using more energy," says Gallagher.

**3 THE PURPOSE-BUILT DISTRICT COURT BUILDING IN WELLINGTON'S CBD IS 13 YEARS OLD. IT HAS EIGHT FLOORS ABOVE GROUND AND TWO UNDERGROUND LEVELS FOR PARKING.**

"But overall, by doing better quality maintenance we were able to identify the things that needed fine-tuning. We've been able to bring peak loads down over time, and they are staying down."

### More comfortable

Importantly, says Batchelor, the comfort levels of the building's users have improved significantly. "It has virtually stopped the complaints by staff about it being too hot or too cold. It means a lot in terms of staff morale."

Hunn adds that while Gallagher's graphs showing evidence of energy savings have provided important motivation for continuing the programme, concerns about the needs of the building's users and compliance with Occupational Safety and Health requirements have always been to the forefront of the team's thinking.





**4** **BIG SAVINGS** ARE EXPECTED FROM INSTALLING **SEPARATE AIR CONDITIONING CONTROLS** FOR THE BUILDING'S 11 COURTROOMS SO **ONLY THOSE IN USE** ARE HEATED OR COOLED.



**5** THE EARLY-1990S BUILDING HAS A HIGH PROPORTION OF **OPEN SPACES**, WHICH MAKES IT **EASIER TO COOL** THAN A **TYPICAL OFFICE BUILDING PACKED WITH COMPUTERS**.

▶ “Not everything we do is towards saving dollars or saving energy,” says Hunn. “It’s about making it comfortable for the people in the building. With some of the things, we may or may not make savings, but there are many small things we are doing to make it more comfortable.”

Batchelor says the Wellington project has the support of the Ministry of Justice, under whose umbrella the Courts sits. National property manager Allen Bell takes a keen interest, but area managers are left to decide for themselves how best to address energy management issues, he says.

## Stand-alone

In contrast to the Wellington “in house” approach, Auckland Courts have an energy performance contract with Honeywell Ltd that carries significant financial incentives for savings achieved by the multinational.

The results were recognised in 2001 when the Department for Courts was named public sector winner in the EnergyWise Awards.

Batchelor says there has been no conscious effort to compete with other Ministry of Justice-owned buildings for energy savings, and projects are not seen as being in competition with each other. “We’re more than happy with what has been happening here, and we see scope for ongoing work with further opportunities to increase savings.”

## Continual process

The project has no completion date, says Hunn, and for every item that gets ticked off and dropped from the “to-do” list, another one seems to take its place. At their most recent meeting, Hunn, Gallagher and Appleby agreed it was time to set up separate air conditioning controls for each of the building’s 11 courtrooms.

Says Hunn: “There are times when only one or two courtrooms are in use, so there are real savings to be had by shutting down heating or cooling in those that are not being used and ensuring they can quickly be brought to the right temperature when needed.”

“We’ll be carefully watching the graphs for the results, but the best test will be the response from staff. If we don’t get any complaints, we’ll know it’s working.”

## Watching the numbers

Web-based load reporting by NGC, metering agent for Wellington District Court electricity supplier Genesis, has proved a useful tool in the implementation of the energy efficiency project. Internally, a computerised Honeywell Building Management System installed as part of a building upgrade in the late 1990s provides a good standard of service, says John Gallagher.

## A tough call

There seems little doubt that New Zealand faces further “dry years” and seasonal energy shortages. So what would happen if, in a repeat of its response to the 2001 electricity crisis, the Government demanded another round of 15% energy cuts in the public sector?

The Wellington District Court team agrees it would be hard to deliver savings of that magnitude on top of the big, permanent cuts they have already achieved.

Wayne Hunn says, though, that so long as any such drive had the buy-in of building users, temporary drops in comfort levels could be tolerated. For instance, lighting could be reduced slightly and the thermostats turned down a couple of degrees. “But it would be hard to make that work over the longer term,” he says.

Gallagher believes that the results achieved by departments such as Courts mean directives for sector-side savings in future may be inappropriate. “The Government should probably consider targeting any future requirements,” he says. ■

## CREDITS

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