

## **Part 5—Environment and heritage**



## **Part 5—Environment and heritage**

### **Introduction**

364 DPS places a high priority on its responsibilities for management of the environmental and heritage aspects of Parliament House.

365 In 2007-08, for the first time, all environmental and heritage performance reporting information has been consolidated in this new part of the annual report. It includes information previously reported in:

- (a) DPS Annual Report—Report on performance;
- (b) DPS Annual Report—Management and accountability; and
- (c) the annual Parliament House Environmental Performance Report<sup>29</sup>.

366 Environmental reporting information in this part is structured using the core Global Reporting Initiative (GRI) environment performance indicators ([www.globalreporting.org](http://www.globalreporting.org)).

367 DPS manages and reports on the environmental and heritage aspects for the whole of Parliament House. In some cases this includes information from the Department of the Senate and the Department of the House of Representatives.

### **Overview**

368 DPS recognises our responsibility to properly manage Parliament House, its resources and facilities in a way that supports sustainable development objectives and promotes the public interest.

369 Parliament House was designed to last 200 years, is a major national and international tourist attraction, and is an eminent work of architecture. It embodies significant heritage values, both socially—as a national icon reflecting the Australian people’s faith in the future of democracy—and physically, as a functional work place and the home of the Australian Parliament.

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<sup>29</sup> Also known as the *DPS Sustainability Report*. Previous reports are available at [http://www.aph.gov.au/dps/building/EMS/EM\\_Performance.htm](http://www.aph.gov.au/dps/building/EMS/EM_Performance.htm)

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370 Parliament House provides a home for the Australian Parliament and is also a place of major visitation and education. These functions mean that it is a large operation which consumes resources and produces waste. DPS aims to ensure the vital functions of Parliament House are maintained, while also minimising resource consumption, minimising waste production and maintaining the heritage value of the building.

### **Strategic plan**

371 In November 2007, the DPS Water Strategic Plan 2007-2010 and DPS Energy Strategic Plan 2007-2010 were endorsed. These strategies identify priorities for energy and water consumption, taking into account stakeholder expectations, which include:

- (a) achieving water and energy savings consistent with government and community expectations and the efficient operation of Parliament House;
- (b) ensuring that services are not interrupted by failure of ageing energy plant and equipment;
- (c) creating a landscape that is drought tolerant and uses less water;
- (d) reducing the use of treated mains water for non-drinking purposes; and
- (e) providing meaningful reports on water and energy use and savings.

372 We expect to finish the DPS Waste Strategic Plan in 2008-09.

373 We also expect to finish the Heritage Strategy in 2008-09. The strategy is intended to meet requirements under the *Environment Protection and Biodiversity Conservation Act 1999* (the **EPBC Act**) and will provide specific strategic direction in meeting the requirements of the Act and related heritage regulations.

### **Sustainable purchasing practices**

374 The DPS Chief Executive's Procedures require procurement decisions to take into account the total resources required to develop, acquire, own, operate and dispose of the equipment.

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### **Heritage considerations**

375 The aesthetic values of the building—such as building materials, equipment, furniture items, light fittings—are given careful consideration to ensure both quality and alignment to the original design intent in all asset replacement projects. DPS Heritage Management staff use the *Central Reference Document* as a guide in understanding the significant values of the various aspects of the building.

### **Environmental considerations**

376 All DPS purchases require consideration of the Department of Environment, Water, Heritage and the Arts (**DEWHA**) guidelines on purchasing.

377 The DPS Energy Strategic Plan 2007-2010 and DPS Water Strategic Plan 2007-2010 require all tender documents to seek innovative energy and water saving solutions. They also require us to select products that have the highest energy and water efficiency ratings, while ensuring value for money principles are met.

378 Examples of contracts in 2007-08 where environmental considerations have been incorporated are:

- (a) procurement of printers and desktop computers;
- (b) standing offer for supply of carpet; and
- (c) catering contracts.

## **Communication and promotion**

### **Heritage**

379 DPS Heritage Management staff undertake a range of activities to promote the significance of the architectural and heritage values of Parliament House, including:

- (a) briefings to contractors engaged to undertake capital works projects in the building, who are made aware of potential heritage impacts, constraints and legislative requirements; and
- (b) participation in the 20<sup>th</sup> anniversary of Parliament House; and
- (c) presentations to special interest groups and at formal functions.

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380 The paper *Parliamentary Architecture and Political Culture*, reviewing the success of the building in housing the Parliament, was presented by Clement Macintyre during the 20<sup>th</sup> anniversary celebrations.

### **Environment**

381 The environmental information located on the Parliament House website, <http://www.aph.gov.au>, is updated quarterly to provide information on progress against water, energy, emissions and waste targets.

382 Advice on environmental management is regularly provided in information circulars to building occupants. Recycling brochures and promotional material were also distributed with the introduction of the co-mingled recycling scheme. A promotional stand and banner were maintained at the entrance to the staff dining room for two weeks with the return of the 42<sup>nd</sup> Parliament in February 2008.

383 Regular newsletter articles on topical environmental issues are published in the DPS Dispatch, our staff fortnightly newsletter. These articles are also available through the Parliament House web site<sup>30</sup>.

384 Site tours and environmental training sessions are other ways DPS communicates with diverse audiences about environmental management practices.

### **Legal requirements**

#### **Heritage**

385 DPS is required to meet heritage obligations under two acts.

- (a) Section 195AT (2A) of the *Copyright Amendment (Moral Rights) Act 2000* requires DPS to:
  - (i) provide the 'author' with a written notice stating the intention to carry out a change to the building; and
  - (ii) provide access to the 'author', if requested, to make a record of the building in its present state and/or to consult in good faith with DPS about the changes to the building.

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<sup>30</sup> [http://www.aph.gov.au/dps/building/EMS/EM\\_Performance.htm](http://www.aph.gov.au/dps/building/EMS/EM_Performance.htm)

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These notifications are issued by DPS Building and Security Projects section, in consultation with Heritage Management staff.

- (b) The *Environment Protection and Biodiversity Conservation Act 1999* (the **EPBC Act**) requires DPS to prepare a Heritage Strategy and a register of the heritage values of Parliament House. The aim of the strategy is to achieve the conservation of Parliament House and maintain its cultural heritage significance consistent with its ongoing operation as the home of the Parliament and as a key component of the parliamentary zone.

**Environment**

386 DPS must report on elements of environmental performance in its Annual Report to meet requirements in the EPBC Act. DPS also provides EPBC Act reporting for the Department of the Senate and the Department of the House of Representatives.

387 As well as the EPBC Act, DPS also reports under:

- (a) Energy Efficiency in Government Operations (**EEGO**) policy;
- (b) National Environmental Protection Measures (**NEPM**) Act;
- (c) National Pollution Inventory (**NPI**); and
- (d) National Packaging Covenant (**NPC**).

*Ecologically sustainable development*

388 Paragraph 516A(6)(a) of the EPBC Act requires DPS to report on how the activities of the parliamentary departments, including their administration of legislation, accorded with the principles of ecologically sustainable development (**ESD**). The goal of ESD is defined as:

... development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends<sup>31</sup>.

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31 The National Strategy for Ecologically Sustainable Development (<http://www.ea.gov.au/esd/national/nsesd/index.html>), endorsed by all Australian jurisdictions in 1992

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389 The parliamentary departments do not manage, coordinate or administer legislation that impacts directly on ESD. However, the Senate and the House of Representatives carry out law-making and policy review roles at Parliament House, which may have the potential to support ESD principles.

390 To support Senators, Members and their staff in their parliamentary duties, DPS provides information and research services. One area of expertise is the Science, Technology, Environment and Resources Section of the Research Branch in the Parliamentary Library. The Parliamentary Library's collections provide comprehensive environmental resources. Together, these services and resource can assist Senators and Members to assess how their decisions support ESD.

### *Contributions of outcomes*

391 Paragraph 516A(6)(b) of the EPBC Act requires DPS to report on how the outcomes specified in an Appropriations Act for the reporting period contribute to ESD.

392 The 2007-08 outcomes of the parliamentary departments, specified in the Appropriations (Parliamentary Departments) Acts do not directly contribute to ESD. However, Output 3.1 in the DPS Portfolio Budget Statement 2007-2008 sets energy and water consumption, greenhouse gas emissions and recycling targets. These outcomes require DPS to manage the potential impact of parliamentary operations on the environment.

### *Identification, management and monitoring of environmental impacts*

393 Paragraphs 516A(6)(c-e) of the EPBC Act require reporting on the effects of the parliamentary departments' activities on the environment, the measures in place to manage environmental impacts and how DPS ensures these measures are reviewed and improved.

394 Activities and operations at Parliament House, particularly maintenance, engineering, landscape, computing and catering services have the potential to affect the environment, as do office-based activities. These result in:

- (a) consumption of electricity, natural gas, diesel fuel, water, paper and other resources;
- (b) greenhouse gas emissions;
- (c) generation of waste; and

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- (d) the risk of hazardous substance spills.

## Heritage Performance

395 DPS created the position of Heritage Management Officer in June 2007 to assist in reporting required under the EPBC Act. In June 2008 we engaged a Building Fabric Officer to assist with heritage and building compliance matters at Parliament House.

### Design Integrity Index 2007-08

396 The Design Integrity Index (**DII**) is the mechanism used to measure, review and report on DPS's performance with regard to design integrity and heritage matters.

397 Parliament House is divided into eight zones, as shown in Figure 40—Design Integrity Index score by area, for the purpose of measuring the DII.

Figure 40—Design Integrity Index score by area

Area	Score (%) 2006-07	Score (%) 2007-08
Public and Ceremonial areas	92.3	93.4
House of Representatives Wing	93.1	93.2
Senate Wing	93.9	94.5
Ministerial Wing	89.8	90.1
Committee Rooms and Library	96.3	92.4
Facilities Areas and Tenancies	80.5	82.8
Circulation and Basement Areas	84.1	85.6
Exterior: Landscape and Roadways	92.9	91.8
<b>Total Score</b>	<b>90.6</b>	<b>90.5</b>

398 In each zone, the components of language, symbolism, design order, change and overall impression are examined and given a score from one to five. The outcomes for each component are added together to obtain a zone score, and the zone scores are added to obtain a building score. This score is then expressed as a percentage of the total possible score.

399 The DII for 2007-08 is assessed at 90.5%, slightly lower than the previous year's 90.6%, but still above the target of 90%.

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400 The calculation of the DII has been made using the same simplified data-gathering process used since 2004. Every five years a full building assessment is conducted. In other years assessments are only undertaken on areas that have had work done to them. The next full assessment of all eight DII zones is due to take place in the 2008-09 year.

401 The 2007-08 DII assessment provided a good cross-section of Parliament House, with at least one project in each of the eight zones. Noting that areas of a lower profile tend to be subjected to greater change and generally score lower in DII assessments, this wide cross-section enables a balanced review of the changes across the building.

402 The assessment demonstrates some improvements with well-integrated changes such as the upgrading of disabled access and OHS compliance in the Main Committee Room Gallery, as well as the excellent outcome of works performed in the Ministerial Wing with the access opportunities presented by the change of government.

403 The 2008-09 DII results will reflect the full building review and will provide a more detailed insight into the success of DPS efforts to maintain Parliament House's design integrity and heritage values. The 2008-09 review will also provide an overview into how successfully integrated the Childcare Centre and the staff dining room refurbishment have incorporated these values.

## **Environmental performance**

### **Water**

404 Water use is a significant environmental aspect of Parliament House operations, particularly because of our commitment to comply with ACT Government water restrictions. Water conservation has had a wide-reaching impact on the aesthetics of the parliamentary precincts, and how we carry out cleaning and maintenance activities.

405 Improving water management is challenging because efficiency was not a particular focus of the original design and fit-out of Parliament House. The DPS Water Strategic Plan 2007-2010 has formalised our priorities in this area.

406 Reduction in reliance on potable water, through the use of re-cycled water or stored stormwater, is generating considerable interest nationally. While committed to investigating both

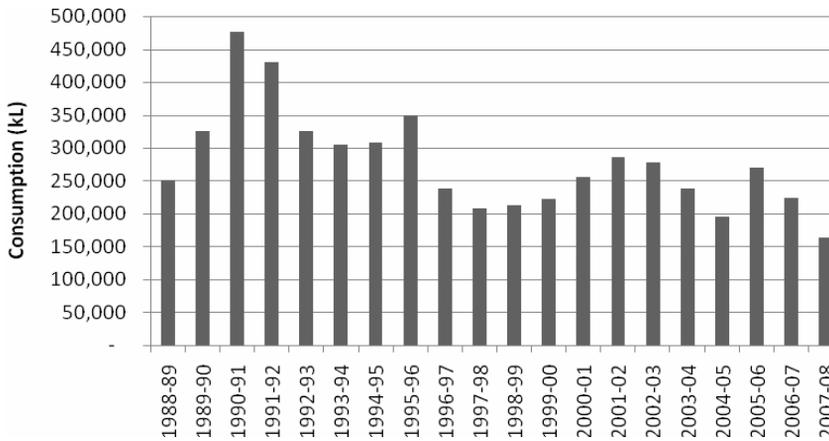
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possibilities, DPS concentrated on reducing overall consumption in the 2007-08 period.

**Water consumption**

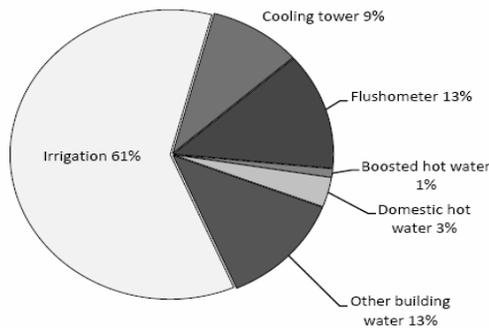
407 Water consumption for 2007-08 was 163,481 kL. This was a 27% decrease in water consumption compared to 224,006 kL in the previous year, and 32% decrease compared to the portfolio budget statement target of 240,000 kL. Water saving initiatives—related to ACT stage 3 water restrictions—resulted in this year’s consumption being the lowest on record, as seen in Figure 41.

Figure 41—Annual water consumption



408 Figure 42 shows a breakdown of water use during 2007-08. “Other building water” includes the cold water used in bathrooms, kitchens and the swimming pool. The “flushometer” consumption is the water used for flushing toilets and urinals.

Figure 42—Breakdown of water use during 2007-08

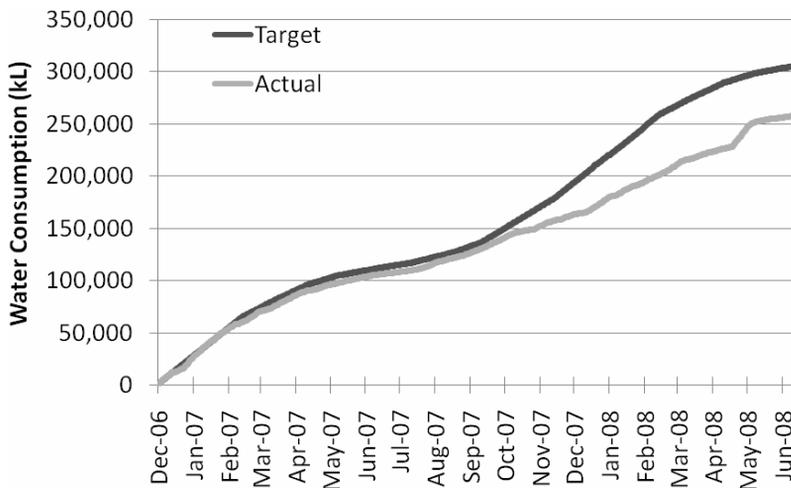


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### Water restrictions

409 ACT stage 3 water restrictions were in place for the full year and required a reduction in water use of 35% over the equivalent season in 2005–06. For DPS, this meant a target of 186,650 kL per annum. Figure 43 shows progress in meeting this target since the introduction of restrictions on 16 December 2006. A burst water pipe contributed to increased consumption in May 2008.

Figure 43—Actual water use compared to Stage 3 restrictions target



### Water saving initiatives

#### Raising the cooling set point

410 The airconditioning system is a large consumer of water because of the evaporative cooling function of the cooling tower.

411 In May 2007 DPS raised the cooling set point from 22 to 24 degrees Celsius (°C) in many areas of the building. This measure contributed to water savings, notwithstanding that weather and occupancy can also have a significant effect. The higher cooling set point results in less waste heat needing to be removed by the cooling tower.

412 In summer 2007-08, which recorded 27% less water consumption than summer 2006-07, the cooling tower used an

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average of 74 kL per day. It did not exceed 200 kL on any occasion compared to nine occasions during the previous summer.

*Savings in the landscape*

413 The most significant water savings have been made in the Parliament House landscape. For the second year, annual flower displays were not planted, and watering was restricted in the grounds beyond Parliament Drive.

414 Late in 2007, DPS commissioned a review of the Parliament House landscape. The primary objective of the review was to reduce irrigation requirements, particularly in grassed areas.

415 DPS received the report of the Parliament House Landscape Review in June 2008, and DPS is currently considering implementation options.

*Water features and the forecourt pond*

416 The 20 external water features in and around Parliament House remained turned off and empty during 2007-08, except for the forecourt pond.

417 In May 2008,—for the 20<sup>th</sup> anniversary of Parliament House, the forecourt pond was filled with recycled water trucked in from the Lower Molonglo Water Quality Control Centre. Using recycled water ensured that DPS did not contravene ACT stage 3 water restrictions.

418 DPS has an agreement with ActewAGL to use the recycled water free of charge, provided we commit to use it in a safe way, such as putting up the “Not safe for drinking” signs. DPS pays for the transport costs.

**Energy**

419 Parliament House is a major energy consumer. The DPS Energy Strategic Plan 2007-2010 commits us to achieving a 10% reduction in usage over the life of the plan.

420 There are many priorities for energy improvements. During a parliamentary sitting day, electricity consumption peaks at about 6 megawatts—compared with a 5 megawatt peak on a non-sitting day—and is consistently above 4 megawatts. However, during late evening and early morning, when the building is largely unoccupied, consumption is still around 2 megawatts.

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421 The challenge for DPS is to find ways to reduce that base load, as well as the peaks. An energy audit was commissioned in May 2008 and will make recommendations in this area.

**Energy consumption**

422 DPS’s energy profile consists of energy consumed at Parliament House and transport energy, including both passenger vehicles and maintenance vehicles (“other transport”). Figure 44—Energy consumed at Parliament House and by transport summarises energy use by these components in 2007–08.

Figure 44—Energy consumed at Parliament House and by transport

Category	Energy Consumption	
	2006-07 (GJ)	2007-08 (GJ)
<b>Parliament House building:</b>		
Electricity: non-renewable source	70,488	66,482
Electricity: renewable source	23,496	22,160
Natural gas	45,382	41,015
Diesel	480	393
Total	139,846	130,050
<b>West Block tenancy:</b>		
Electricity: non-renewable source	903	-
Electricity: renewable source	79	-
Total	982	not applicable <sup>32</sup>
<b>Passenger vehicles:</b>		
Automotive diesel	-	41
Automotive gasoline (petrol)	2007	1,556
E-10 (biofuel)	202	513
LPG	125	111
Total	2,334	2,221
<b>Other transport:</b>		
Automotive diesel	319	282
Automotive gasoline (petrol)	112	124
LPG	41	41
Total	472	447
<b>Total energy consumption</b>	<b>143,634</b>	<b>132,718</b>

423 Energy consumption in Parliament House in 2007-08 was the lowest recorded since the building opened in 1988.

<sup>32</sup> DPS’s tenancy at West Block ceased from 1 July 2007.

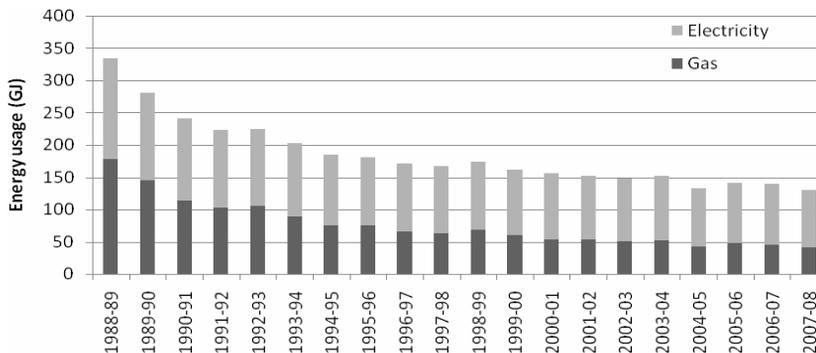
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424 Energy consumed in 2007-08 was 132,718 GJ, a decrease of 8% on the 143,636 GJ consumed the previous year. Passenger and other transport energy uses decreased by 5% from 2,336 GJ and 472 GJ respectively in 2006-07 to 2,221 GJ and 447 GJ in 2007-08.

425 Electricity and natural gas consumption at Parliament House comprised 98%—129,657 GJ—of total energy use. Gas is used for heating, domestic hot water and in kitchens. Electricity powers a variety of services including office lighting, mechanical services, lifts, chillers, computer equipment, central waste plant and boosted hot water heating. Figure 45 shows the downward trend in electricity and gas consumption since the building opened.

426 The federal election in November 2007 meant fewer sitting days in 2007-08, resulting in reduced energy consumption compared to the previous year.

Figure 45—Annual electricity and gas consumption (in 000's of GJ)

**Vehicles**

427 Parliament House's passenger vehicle fleet<sup>33</sup> consisted of 39 leased vehicles in 2007-08, including 31 SES vehicles. Six vehicles (five SES) scored higher than 10 in the Green Vehicle Guide.

**Energy saving initiatives**

428 Initiatives to conserve electricity included the continual monitoring and adjustment of the electrical load plant, implementing more energy-efficient lighting schemes, and reduced airconditioning during summer.

<sup>33</sup> This includes vehicles across the three Parliamentary Departments.

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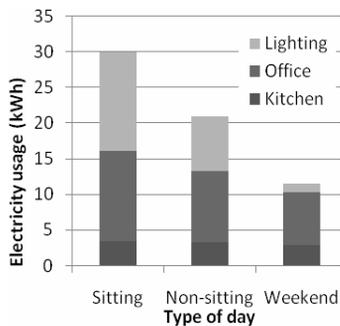
### Chilling and boiling water

429 During 2007-08, a review of drinking water supply identified several locations where kettles could provide boiling water more efficiently than instant boiling water units and where water chillers were unwarranted. Changes will be made in the 2008-09 year.

### Improved information on electricity usage

430 Energy use data is essential for identifying improvement initiatives. A metering project in September 2007 has helped us to understand that lighting represents the biggest proportion of usage in office areas, and standby power for office and kitchen equipment is also significant. An example of the metering results for a typical suite is shown in Figure 46.

Figure 46—Electricity consumption for a suite on different day types



431 Energy use data is now informing decisions on refurbishment projects and replacement of office equipment and appliances.

### Lighting

432 The phasing out of incandescent lamps is an ongoing initiative to save energy. This year compact fluorescent lights were installed in general circulation corridors and in the ground floor and first floor areas surrounding the reflection pool. Trials continued to identify alternatives to replace other incandescent lamps, including those in offices and the Parliamentary Library.

433 A project has begun to replace street and road lighting. The revised lighting scheme and lamp types will use 40% less energy than the existing scheme.

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434 During 2007-08, occupancy sensors were incorporated into locations where we believed lights were being left on unnecessarily, such as public and internal general circulation toilets.

*Earth Hour*

435 Parliament House participated in Earth Hour on 29 March 2008.

436 During Earth Hour, there was an approximate saving of 50kWh, which was a 3% reduction compared to the same hour on the previous weekend. Savings were not high because most equipment and appliances would normally be in standby mode, with energy consumption already minimised.

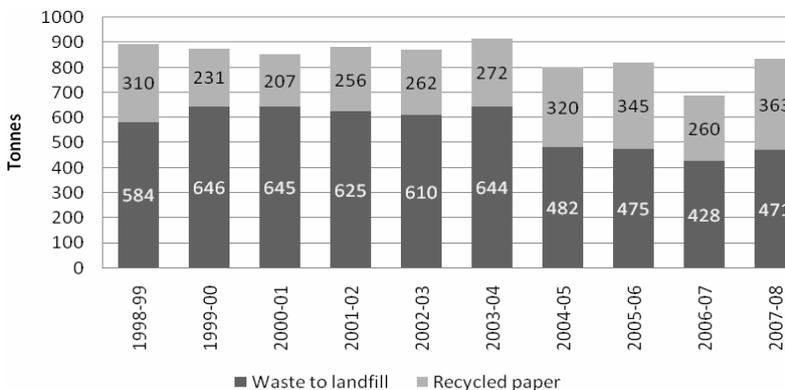
437 All external lights were switched off except for those lights required for safety and security purposes—for example, lights on the flagpole.

**Recycling and waste management**

***Waste generation and recycling***

438 The amount of general waste (excluding construction waste) sent to landfill in 2007-08 was 471 tonnes, which is 10% more than the 428 tonnes sent the previous year. The quantity of recycled paper waste increased by 40%, from 260 tonnes in 2006-07 to 363 tonnes in 2007-08. Both the increased waste to landfill and increased waste paper to recycling statistics are attributable to the change of government in November 2007. Figure 47 shows trends since 1998.

*Figure 47—Annual waste disposed to landfill and recycled*



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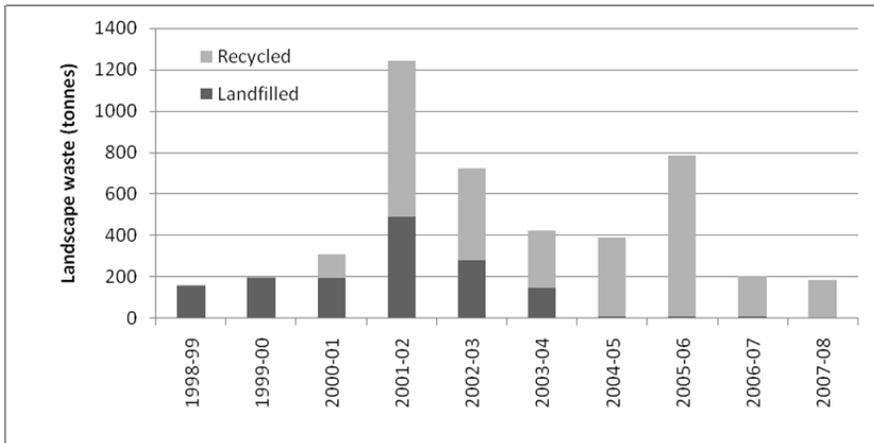
### Landscape waste

439 The preferred method for disposing of green waste at Parliament House is to chip the material on-site and re-use it in the landscape. The amount of chipped material is not recorded. When waste generated in the landscape cannot be chipped on-site—due to volume, composition or resources—then the material is taken off-site to be recycled or disposed to landfill.

440 During 2007–08, 187 tonnes of landscape waste was generated from the Parliament House landscape. 94 tonnes was used for clean fill, 93 tonnes were composted, and no landscape waste was sent to landfill during the year.

441 Figure 48 shows annual trends in landscape waste and recycling rates. The peak in landscape waste during 2005-06 was because of a turf replacement project on the roof slopes. In 2005-06 775 tonnes of landscape waste was recycled<sup>34</sup>.

Figure 48—Annual quantity of landscape waste



### Waste management initiatives

#### Recycling facilities and introduction of co-mingled recycling

442 DPS provides facilities to recycle paper, cardboard, printer cartridges, lamps, used oil, grease, batteries, landscape and metal waste. From 4 February 2008, DPS expanded these facilities to provide building occupants the option of recycling co-mingled wastes.

<sup>34</sup> Page 100 of the 2006-07 DPS annual report incorrectly stated that 3,000 tonnes of landscape waste was recycled during 2005-06.

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Co-mingling bins were also put in communal kitchens, lunch rooms and meeting rooms.

443 At 30 June 2008, 56 tonnes<sup>35</sup> of co-mingled waste had been collected and recycled.

*2008 waste audit*

444 A waste audit was undertaken in May 2008 to help develop objectives in the DPS Waste Strategic Plan. All the rubbish generated in Parliament House kitchens, offices, dining rooms, public areas and courtyards on one parliamentary sitting day and one non-sitting day was weighed. Samples were then taken for closer analysis.

445 The total waste generated on the sitting day was three times the amount generated on the non-sitting day—3.6 tonnes compared to 1.2 tonnes. A positive finding was that there is negligible contamination in the paper recycling stream and little in the co-mingled streams—less than 3% by weight.

446 However, more than half the material in the general waste stream is recyclable, and incorrectly going to landfill. Compared to the 2005 waste audit, the contamination in the office waste stream on a non-sitting day has decreased from 69% to 57%.

447 DPS believes that the recycling rates can be improved with a strategy to increase awareness of waste management practices and a review of the bin type, placement and labelling.

*Other waste initiatives*

448 Putrescible waste—vegetable, fruit, meat, other food scraps and handtowel—from Parliament House currently goes to landfill. DPS is considering options for recovering and recycling putrescible waste in consultation with the waste contractor.

449 DPS is now procuring 100% recycled content copy paper, at a cost increase of approximately 27%. We aim to further reduce paper use to offset the additional cost.

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<sup>35</sup> The weight of co-mingled waste is based on a conversion factor of 250 kg per cubic metre collected. This factor is provided by DPS's waste management contractor and based on weighing random bin samples.

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## **Co-mingling in the House**

Recognising and responding to the growing importance of environmental issues, DPS introduced a voluntary program to increase the level of waste recycling in Parliament House.

*"Our co-mingling initiative took almost a year of planning before we started in early 2008" says Clare, an enthusiastic supporter of the idea. "The aim is to increase recycling. We started recycling paper ages ago. Now our plastics, glass and cartons are recycled and don't go straight to landfill, as they did before".*



Clare explains that this has proven immensely popular, with staff from all parliamentary departments, contractors and licensees participating and, in many cases, wanting to do more. *"I've seen lots of feedback from staff wanting more, such as bigger bins and more signage"* Clare says. *"They are seeking ways to have their recycling at work operate the same way as their recycling at home, and I think that's great".*

Adopting similar arrangements is part of a growing trend among large workplaces. A meeting with staff from the ACT Government "No-Waste" initiative confirmed that DPS is doing well, with many of the recommended strategies (including ways to recycle batteries and toner cartridges, as well as standardised labelling practices for bins) already in place.



Clare is optimistic about the future of recycling in Parliament House. A recent co-mingling display at the entrance to the staff dining room also raised awareness and support for environmental initiatives. *"A lot of people stopped to ask questions. People were amazed that their small actions at work could make such a huge difference".*

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450 Strategies for DPS to reduce its paper consumption include ensuring personal computers default to double-sided printing, only printing emails when required for a file or when otherwise necessary, printing two pages onto a page and minimising printing of multiple copies of a document where possible—for example, sharing a single copy amongst team members.

451 Paper reduction targets for each DPS branch have been set and success against the targets is reviewed quarterly.

452 Since December 2007, catering contractors provide take-away cardboard cups which can be recycled. Staff may also provide their own cup.

**Emissions and effluents****Greenhouse gas emissions**

453 During 2007–08, 22,754 tonnes of carbon dioxide equivalent<sup>36</sup> (CO<sub>2</sub>e) were generated from energy consumption at Parliament House<sup>37</sup>. Greenhouse emissions are described in Figure 49.

*Figure 49—Parliament House emissions (direct and indirect, including SES and operational vehicle fleets)*

<b>Emission category</b>	<b>Comment</b>	<b>2006-07 (tonnes CO<sub>2</sub>e)</b>	<b>2007-08 (tonnes CO<sub>2</sub>e)</b>
Scope 1	Emissions at the source of the activity (eg emitted from gas and fuels used at Parliament House and by vehicles)	2,587	2,318
Scope 2	Emissions generated elsewhere (eg by the power plants that produce the electricity used at Parliament House)	17,129	16,520

<sup>36</sup> Carbon dioxide equivalent, CO<sub>2</sub>e, is an internationally accepted measure that expresses the amount of global warming of greenhouse gases in terms of the amount of carbon dioxide (CO<sub>2</sub>) that would have the same global warming potential.

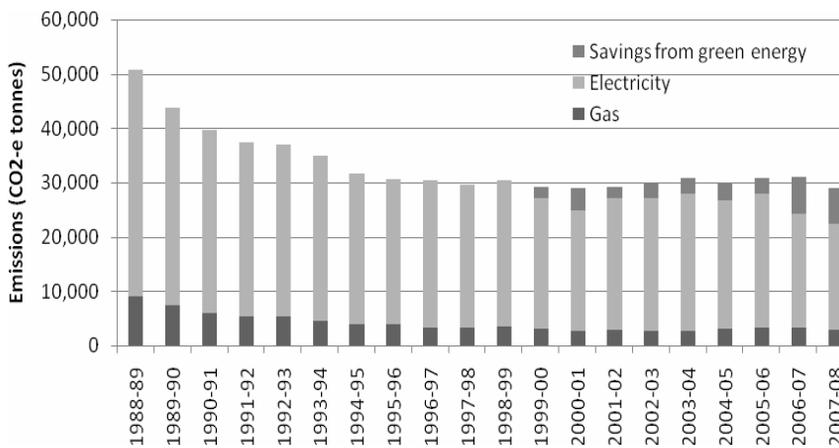
<sup>37</sup> This emissions total is calculated according to DEWHA's methodology for recording greenhouse data for Government programme reporting. The EEGO policy requires DPS to use this methodology. Emissions from electricity and gas comprise the majority of this total (22,286 tonnes CO<sub>2</sub>-e).

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Emission category	Comment	2006-07 (tonnes CO <sub>2</sub> e)	2007-08 (tonnes CO <sub>2</sub> e)
Scope 3	Indirect emissions, meaning emissions generated during the delivery of electricity, gas and fuel to Parliament House, which DPS has little control over.	4,307	3,916
Scopes 1 & 2	DPS has direct responsibility for these emissions.	19,716	18,838
Scopes 1,2 & 3	Direct and indirect emissions.	24,023 <sup>38</sup>	22,754

454 Figure 50 shows annual greenhouse gas emissions since Parliament House opened in 1988. Purchasing 25% of our electricity from renewable sources has helped to achieve record low emissions.

Figure 50—Annual greenhouse gas emissions from electricity and gas



455 DPS is a member of the Greenhouse Challenge Plus program and has reported on greenhouse gas emissions since 1997 (see [www.greenhouse.gov.au/challenge](http://www.greenhouse.gov.au/challenge)).

<sup>38</sup> The emissions reported in 2006-07 were 24,290, not 24,023 tonnes CO<sub>2</sub>e. The difference is due to a change in the emissions factor that calculates the CO<sub>2</sub>e associated with fuel consumption.

**Part 5—Environment and heritage****Ozone depleting substances**

456 Parliament House uses refrigerants that contain ozone depleting substances. These are used for:

- (a) chillers, which provide cooling for the building's airconditioning;
- (b) coolrooms;
- (c) freezers; and
- (d) refrigerators.

457 Figure 51 shows the type and "ozone depletion potential" of refrigerants purchased in 2007-08. This year, DPS did not maintain records of the quantity of refrigerants consumed. Use will be reported on for the 2008-09 financial year, with performance compared to consumption in 2006-07.

458 Refrigerants use increased in 2007-08 due to significant maintenance work on one of the five chillers providing the majority of airconditioning to Parliament House.

*Figure 51—Type of refrigerant use*

<b>Refrigerant</b>	<b>Ozone Depletion Factor</b>	<b>Global Warming Potential Factor</b>
R404A	0	3,260
R409A	0.048	1,560
SPE34E	0	1,280
R134A	0	1,300
R410A	0	2,000
R22	0.034	1,780

**Air pollutants – NO<sub>x</sub>, SO<sub>x</sub> and particulates**

459 The combustion of natural gas for heating, hot water and cooking purposes generated oxides of nitrogen (**NO<sub>x</sub>**), oxides of sulfur (**SO<sub>x</sub>**) and other air pollutants. Each year, DPS reports on these emissions to the National Pollution Inventory ([www.npi.gov.au](http://www.npi.gov.au)). Figure 52—Emissions of air pollutants from natural gas consumption lists these emissions for 2007-08. Because the amount of gas combusted was less than in 2006-07, emissions of air pollutants were also less.

**Part 5—Environment and heritage**

Figure 52—Emissions of air pollutants from natural gas consumption

<b>Air pollutants</b>	<b>2006-07 (kg)</b>	<b>2007-08 (kg)</b>
Carbon monoxide	1,800	1,680
Oxides of nitrogen	2,100	1,993
Particulate matter (PM10)	160	148
Particulate matter (PM2.5)	(not measured)	148
Total Volatile organic compounds	110	110
Sulfur dioxide	11	32
Polycyclic aromatic hydrocarbons	<1 (0.014)	<1 (0.013)

**Discharges to water**

460 DPS does not monitor discharges into the sewage system. However, we estimate that 65 ML was discharged into the sewage system in 2007-08—assuming most non-irrigation water is discharged into the sewage system. This is a decrease of 15 ML compared to the 2006-07 figure of 80 ML. Estimates are based on water consumed for non-irrigation purposes.

461 Sewage from Parliament House is required under a trade waste agreement to be equivalent to domestic strength. To ensure these requirements are met, there is a:

- (a) grease trap on each kitchen drain;
- (b) coalescing plate filter on the vehicle washdown bay (to prevent oil from entering the sewer); and
- (c) system to remove paint solids from paint brush washing facilities before they enter the sewer.

**Significant spills of chemicals, oils, and fuels**

462 In 2007–08 there were no significant spills of chemicals, oils or fuels from Parliament House.