

TELSTRA CORPORATION LTD v HORNSBY SHIRE COUNCIL  
[2006] NSWLEC 133

Land and Environment Court: Preston CJ

6, 7, 24 March 2006

*Environment Law — Development applications — Relevant considerations — Public interest — Ecologically sustainable development — Precautionary principle — Threshold test for application of precautionary principle — Development application for installation of telecommunications base station — Emission of radiofrequency electromagnetic energy — Compliance with relevant Australian safety standards — Threat of serious or irreversible environmental damage — Protection of the Environment Administration Act 1991, s 6(2)(a) — Environmental Planning and Assessment Act 1979, s 4(1), s 79C(1)(e).*

The *Protection of the Environment Administration Act 1991*, s 6(2)(a) (adopted by the *Environmental Planning and Assessment Act 1979*, s 4(1)), provided:

**“6 Objectives of the Authority**

...

(2)(a) ... if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

- (i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and
- (ii) an assessment of the risk-weighted consequences of various options,”

*Held:* (1) *The Environmental Planning and Assessment Act 1979*, s 79C(1)(e), by requiring a consent authority to have regard to the “public interest” obliges the consent authority to have regard to the principles of ecologically sustainable development in cases where issues relevant to those principles arise. A particular principle of ecologically sustainable development is the precautionary principle in the *Protection of the Environment Administration Act 1991*, s 6(2), which is adopted by the *Environmental Planning and Assessment Act 1979*, s 4(1). (268 [121]-[124])

(2) The application of the precautionary principle and the concomitant need to take precautionary measures is triggered by the satisfaction of two conditions precedent or thresholds which are cumulative: a threat of serious or irreversible environmental damage and scientific uncertainty as to the environmental damage. (269 [128])

(3) There was no basis on which the precautionary principle could be applied to a development application for consent to the installation of telecommunications equipment and a base station where the radiofrequency and electromagnetic energy emitted from the proposed base station easily complied with the Australian Standard RPS3. This was because the precautionary approach had already been adopted in the standard setting process to prevent any threat of serious or

irreversible environmental damage. Accordingly, there was no basis to invoke the precautionary principle so as to take further measures to prevent environmental degradation. (280 [184]-[186])

*Consideration and discussion* of the precautionary principle as formulated in the *Protection of the Environment Administrative Act 1991*, s 6(2), adopted by s 4(1) of the *Environment Planning and Assessment Act 1979* together with discussion of the procedure for its application.

#### CASES CITED

The following cases are cited in the reported judgment:

- A P Pollution Control Board v Bayadu* AIR 1999 SC 812  
*Alumino (Aust) Pty Ltd v Minister Administering the Environmental Planning and Assessment Act 1979* [1996] NSWLEC 102  
*B T Goldsmith Planning Services Pty Ltd v Blacktown City Council* [2005] NSWLEC 210  
*Bentley v BGP Properties Pty Ltd* (2006) 145 LGERA 234  
*BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237  
*Blake Dawson Waldron on behalf of Telstra Corporation v West Tamar Council* [2004] TASRMPAT 201  
*BP Australia Ltd v Campbelltown City Council* (1994) 83 LGERA 274  
*Broad v Brisbane City Council* (1986) 59 LGRA 296  
*Bruce v Cole* (1998) 45 NSWLR 163  
*Carstens v Pittwater Council* (1999) 111 LGERA 1  
*Cecec (No 8) Pty Ltd v Mosman Municipal Council* (1960) 5 LGRA 251  
*Connell Wagner Pty Ltd v City of Port Phillip* [1998] VCAT 606  
*Conservation Council of South Australia v Development Assessment Committee and Tuna Boat Owners Association (No 2)* [1999] SAERDC 86  
*Daubert v Merrell Dow Pharmaceuticals Inc* 509 US 579 (1993)  
*Dixon v Burwood Council* (2002) 123 LGERA 253  
*EFTA Surveillance Authority v Norway* (European Free Trade Association (EFTA) Court, Case E-3/00, 5 April 2001, unreported)  
*Fabcot Pty Ltd v Hawkesbury City Council* (1997) 93 LGERA 373  
*Foreman v Sutherland Shire Council* (1964) 10 LGRA 261  
*Gales Holdings Pty Ltd v Tweed Shire Council* [2006] NSWLEC 85  
*Greenpeace Australia Ltd v Redbank Power Co Pty Ltd* (1994) 86 LGERA 143  
*Hill v Green* (1999) 48 NSWLR 161  
*Hungary v Slovakia, Re Gabčíkovo-Nagymaros Project (Danube Dam Case)* [1997] ICJ Rep 7  
*Hutchison 3G Australia Pty Ltd v Hobsons Bay City Council* [2005] VCAT 1470  
*Hutchison Telecommunication (Australia) Ltd v Ku-ring-gai Municipal Council* [2004] NSWLEC 665  
*Hutchison Telecommunications (Australia) Pty Ltd v Baulkham Hills Shire Council* [2004] NSWLEC 104  
*Hyett R v Corangamite Shire Council* [1999] VCAT 794  
*Industrial Union Department AFL-CIO v American Petroleum Institute* 448 US 607 (1980)  
*Jarasius v Forestry Commission of New South Wales* (1988) 71 LGRA 79  
*Kindimindi Investments Pty Ltd v Lane Cove Council* (2006) 143 LGERA 277  
*Kulin Holdings Pty Ltd v Penrith City Council* (1999) 103 LGERA 402  
*Leach v National Parks and Wildlife Services* (1993) 81 LGERA 270  
*Lucent Technologies v Maribyrnong City Council* [2001] VCAT 1955  
*Mahon v Air New Zealand Ltd* [1984] 1 AC 808

*McIntyre v Christchurch City Council* [1996] NZRMA 289  
*Monsanto Agricoltura Italia v Presidenza del Consiglio dei Ministri* (European Court of Justice, Case C-236/01, 13 March 2003, unreported)  
*Murrumbidgee Ground-Water Preservation Association v Minister for Natural Resources* [2004] NSWLEC 122  
*Narmada Bachoa Andolan v Union of India* AIR 2000 SC 3751  
*National Farmers' Union v Secretary Central of the French Government* (European Court of Justice, Case C-241/01, 2 July 2002, unreported)  
*New Century Developments Pty Ltd v Baulkham Hills Shire Council* (2003) 127 LGERA 303  
*Newton v Wyong Shire Council* (McClelland J, 6 September 1983, unreported)  
*Nicholls v Director-General of National Parks and Wildlife* (1994) 84 LGERA 397  
*Northcompass Inc v Hornsby Shire Council* (1996) 130 LGERA 248  
*Novak v Woodville City Corporation* (1990) 70 LGRA 233  
*NTL Australia Ltd v Willoughby Council* [2000] NSWLEC 244  
*Optus Communications Pty Ltd v Corporation of the City of Kensington and Norwood* [1998] SAERDC 480  
*Optus Mobile Ltd v Cardinia Shire Council* [2004] VCAT 581  
*Optus Mobile Ltd v Whittlesea City Council* [2003] VCAT 968  
*Peasley v Frankston City Council* [2002] VCAT 642  
*Perry Properties Pty Ltd v Ashfield Council (No 2)* (2001) 113 LGERA 301  
*Pfizer Animal Health SA v Council of the European Union* [2002] ECR 11-3305  
*Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning* [2005] NSWLEC 426  
*Providence Projects Pty Ltd v Gosford City Council* (2006) 147 LGERA 274  
*Providence Projects Pty Ltd v Gosford City Council* [2006] NSWLEC 52  
*R v Deputy Industrial Injuries Commissioner; Ex parte Moore* [1965] 1 QB 456  
*R v Secretary of State for Trade and Industry; Ex parte Duddridge* [1995] Env LR 151  
*Randall Pty Ltd v Willoughby City Council* (2005) 144 LGERA 119  
*Shirley Primary School v Telecom Mobile Communications Ltd* [1999] NZRMA 66  
*Sinclair v Loddon Shire Council* [1997] VCAT 241  
*Telstra Corporation Ltd v Moreland City Council* [2002] VCAT 1294  
*Telstra Corporation Ltd v Pine Rivers Shire Council* [2001] QPELR 350  
*Telstra Ltd v Mornington Peninsula Shire Council* [2005] VCAT 863  
*Tuna Boat Owners Association of SA Inc v Development Assessment Commission* (2000) 77 SASR 369  
*Vellore Citizens Welfare Forum v Union of India* AIR 1996 SC 2715  
*Venus Enterprises Pty Ltd v Parramatta City Council* (1981) 43 LGRA 67  
*Vertical Telecoms Pty Ltd v Hornsby Shire Council* [2000] NSWLEC 172  
*Weal v Bathurst City Council* (2000) 111 LGERA 181  
*Wyman v Kingston City Council* (Victorian Civil and Administrative Tribunal, 8 March 2005, unreported)  
*Zhang v Canterbury City Council* (2001) 51 NSWLR 589  
*Zia v WAPDA* (1994) PLD SC 693

## APPEAL

This was an appeal pursuant to the *Environmental Planning and Assessment Act* 1979, s 97(1), against the refusal of the relevant local council to consent to a development application to construct a mobile telephone base station to an existing building.

*M S Henry*, for the applicant.

*A E Galasso*, for the respondent.

*Cur adv vult*

24 March 2006

- 1       **PRESTON CJ.** To the northwest of Sydney lies the suburb of Cheltenham. It is a suburb with heritage charm, with a number of late 19th and early 20th century homes and gardens. Remarkably for these days, the suburb is solely residential, with no commercial or retail activities within the boundaries of the suburb.
- 2       At the heart of the suburb is the Cheltenham Recreation Club (the Club). The Club's site is large, about 1.7ha, and contains recreational and sporting facilities including bowling greens, croquet courts and tennis courts. The park-like grounds are of local heritage significance. The Club has been and still is a meeting point for members of the community of Cheltenham.
- 3       However, the suburb of Cheltenham is not isolated from the modern world. Residents of, visitors to and travellers through the suburb wish to engage with each other and others outside the suburb through the marvel of modern telecommunications. Here the problem arises. Cheltenham suffers from inadequate mobile telephone coverage. There are holes in the extent of the coverage or areas where the coverage is of inferior quality. The inadequacies are particularly experienced along the railway line, affecting commuters.
- 4       The largest of the telecommunications carriers in Australia, Telstra, wishes to address the inadequate mobile telephone coverage. It identified the Club site as a suitable location for a mobile telephone base station which could provide mobile telephone coverage in the suburb of Cheltenham and particularly along the railway line.
- 5       Telstra and the Club reached agreement whereby Telstra could, after obtaining necessary approvals, erect on the roof of the clubhouse two panel antennas surrounded by a glass plastic shroud (simulating the appearance of chimneys) and an equipment cabin to the rear of the clubhouse. Telstra would also construct a small pergola for the benefit and use of the Club at the rear of the clubhouse and pay the Club an annual lease rental.
- 6       This proposal, however, has caused a section of the community of Cheltenham and Hornsby Shire Council (the Council) much concern. Perhaps their greatest concern is the fear that the proposed facility will emit electromagnetic energy that will harm the health and safety of the residents of Cheltenham.
- 7       This fear has fuelled opposition to the proposal, both in a section of the community and by the elected councillors of the Council. The Council refused the development application for the proposal.
- 8       Telstra has appealed to this Court seeking consent for the proposal. The Club supports Telstra's application. The Council and certain residents contest the appeal, still maintaining their opposition.
- 9       The case raises questions about fear, rationality and the law. How should a responsible decision-maker respond to public fear? Responsiveness to public fear entails a commitment to rational deliberation, in the form of reflection and reason-giving. An approach with some currency at the moment is the precautionary principle. What is the precautionary principle and how is it to be

applied when thinking about public health and safety and the environment?  
How can it be invoked to respond to public fear?

10 The case provides some guidance in relation to these questions.

11 In the hearing and determination of the appeal I have been assisted by  
Commissioner Brown.

### **Nature of the appeal**

12 The appeal is against the refusal of the Council of the applicant's  
development application No 1514/04 for the installation of telecommunications  
equipment and alterations and additions to an existing building at 60–74 The  
Crescent, Cheltenham (the site).

13 The appeal is brought pursuant to s 97(1) of the *Environmental Planning and  
Assessment Act* 1979. The appeal is within Class 1 of the Land and  
Environment Court's jurisdiction: s 17 of the *Land and Environment Court Act*  
1979. The Court has all of the functions and discretions which the Council, as  
the consent authority under the *Environmental Planning and Assessment Act*,  
had in respect of the development application the subject of the appeal: s 39(2)  
of the *Land and Environment Court Act*.

14 The appeal is by way of rehearing and fresh evidence or evidence in addition  
to, or in substitution for, the evidence given on the making of the decision by  
the Council, may be given on the appeal: s 39(3) of the *Land and Environment  
Court Act*. The Court is to have regard to the *Environmental Planning and  
Assessment Act* and any other relevant Act, any instrument made under any  
such Act, the circumstances of the case and the public interest: s 39(4) of the  
*Land and Environment Court Act*.

### **The site**

15 The site consists of Lots 1, 2, 3, 4 and 5 in DP 5440, Lot C in DP 306966,  
Lot C in DP 328704, Lot 1 in DP 335423, Lot G in DP360935, Lot J in DP  
374758 and Lot A in DP 303812. It has a total area of 1.7 hectares with  
frontages to The Crescent, The Boulevard and Lyne Road, Cheltenham.

16 The site accommodates the Cheltenham Recreational Club. The facilities  
located on the site include a clubhouse, tennis courts, croquet lawns, bowling  
greens and car parking.

17 The surrounding development is predominantly residential with the Chelt-  
enham railway station located approximately 200 metres to the north. The  
railway line linking Strathfield and Hornsby is located on the opposite side of  
The Crescent.

### **The proposed development**

18 The proposal seeks development consent to construct a mobile telephone  
base station as a rooftop facility on the existing clubhouse. The proposal also  
seeks to construct a pergola off the rear of the existing clubhouse although this  
is not associated with the telecommunications base station.

19 The base station equipment comprises:

- 2 tri-band panel antennas located at either end of the clubhouse,
- an equipment cabin located at the rear of a clubhouse, and
- a 450 mm wide cable tray, located between the equipment cabin and  
the to a communications pole.

20 The antennas would be enclosed in a shrouding which is moulded and  
painted to represent brickwork chimneys of the clubhouse.

### The history of the development application

21 The application was lodged with the Council on 23 August 2004. It was considered by the Council at its meeting on 17 November 2004 and was recommended for approval by council officers. The report of the council officers indicated that 26 submissions were received when the application was advertised, 23 opposing the application and 3 submissions in support. The Council refused the application on 17 November 2004.

22 A review of the Council's determination of 17 November 2004, pursuant to s 82A of the *Environmental Planning and Assessment Act*, was considered by the Council on 17 August 2005. The review proposed no changes to the application previously considered by the Council and was again recommended for approval by council officers. The report of the council officers indicated that 76 submissions were received when the application was advertised. The submissions consisted of 60 submissions (including 52 proforma letters) in support of the proposal and 16 submissions objecting to the proposal. The submissions in support of the proposal included a petition with 61 signatories. The Council refused the application on 17 August 2005.

### Relevant planning controls

23 The *Telecommunications Act* 1997 (Cth) exempts carriers from the requirements of State environmental planning legislation in certain circumstances, including where a proposed facility is defined as a low impact facility (Sch 3, Pt 1, Div 3, cl 6(1)(b)). The Minister, pursuant to Sch 3, Pt 1, Div 3, cl 6(3) may determine what is a low impact facility. The Minister's determination is contained in the *Telecommunications (Low-impact Facilities) Determination* 1997 (Cth). It relevantly states:

#### "Part 2 Areas

...

#### 2.5 Area of environmental significance

...

(7) An area is an area of environmental significance if, under a law of the Commonwealth, a State or a Territory, it consists of a place, building or thing that is entered in a register relating to heritage conservation.

...

#### Part 3 Low-impact facilities

#### 3.1 Facilities

...

(2) However, the facility is not a low-impact facility if the area is also an area of environmental significance."

24 In this case, the telecommunications facility is not defined as a low impact facility, as it is located within a heritage conservation area and is thus an area of environmental significance. The proposal is therefore subject to the provisions of the *Environmental Planning and Assessment Act* and local planning controls.

25 Under *Hornsby Shire Local Environmental Plan* 1994 (the LEP), the site is zoned Open Space C (Private Recreation). The proposed use is permissible with consent within this zone. The grounds of the Club are listed as a heritage item of local significance under Sch D (Heritage Items) of the LEP. A number

of dwellings near the site are identified as items of local significance under Sch D. The site is also located within the Beecroft/Cheltenham Heritage Conservation Area under Sch E (Heritage Conservation Areas) of the LEP. Clause 18 provides requirements for development in conservation areas and in the vicinity of heritage items.

### **The issues**

The Council filed a statement of issues containing the following issues:

- “1. Whether approval should be granted as inadequate assessment has been made of alternate sites in the vicinity and the potential for co-location on existing structures.
2. Whether approval should be granted as inadequate information has been provided in terms of the existing network in the locality and the need for an additional facility.
3. Whether approval should be granted as the Applicant has not adequately demonstrated that the development will not cause a level of electromagnetic radiation that will impact on the health of persons in the locality.
4. Public Interest:
  - a) Whether consent should be granted in the public interest;
  - b) Issues raised by objectors, which include:
    - Public health impacts;
    - Visual impacts;
    - Heritage impacts; and
    - Co-location.”

26 The Council clarified that the aspects of the public interest in issue 4(a)  
relied upon are the matters raised in the other issues 1 to 3 and 4(b).

27 It is logical to address these issues in the following order: the effect of  
radiofrequency electromagnetic energy including on public health and safety,  
the need for the development, alternative sites for the development and the  
matters raised by objectors of visual impacts, heritage impacts and co-location.

### **The evidence**

#### *Expert evidence*

[His Honour then set out material relating to the evidence presented in these proceedings in a manner not calling for report and continued:]

90 I accept the evidence of Dr Black and Mr Bangay and find that  
radiofrequency electromagnetic energy emitted from the proposed base station  
will not cause any adverse biological or health effect to the general public.

#### **Appropriateness of the Australian Standard RPS3**

91 The Australian Radiation Protection Standard “Maximum Exposure Levels  
to Radiofrequency Fields 3kHz to 300GHz: Radiation Protection Series No 3”  
(Australian Standard RPS3) is an authoritative and scientifically credible  
standard to protect the health and safety of people and the environment from  
the harmful effects of radiofrequency fields in the frequency range of 3kHz to  
300 GHz. The Standard is based on the 1998 International Commission on  
Non-Ionising Radiation Protection Guidelines of the International Commission  
on Non-Ionising Radiation Protection.

92 The Australian Standard RPS3 notes that the International Commission on  
Non-Ionising Radiation Protection is an international scientific body with

affiliations to various international standards bodies and organisations. The International Commission on Non-Ionising Radiation Protection rules establish scientific integrity and require all committee members to be independent experts who are not members of commercial or industrial organisations. All International Commission on Non-Ionising Radiation Protection publications appear in the peer reviewed scientific journal *Health Physics*: at page 34 of the Australian Standard RPS3.

93 The Australian Standard RPS3 has reworked the International Commission on Non-Ionising Radiation Protection specifications to improve technical specifications or complete specifications where incomplete in the International Commission on Non-Ionising Radiation Protection Guidelines. The result is a sturdy and unambiguous technical framework: at 33–34 of Australian Standard RPS3.

94 The Australian Standard RPS3, at 35, notes that in the process of settling the Standard extensive, further research was also carried out:

“In establishing this Standard, the origins and evolution of relevant recommendations and publications of the International Commission on Non-Ionising Radiation Protection and the American National Standards Institute (ANSI) were carefully reviewed. Additionally, the rationale for further development of these documents was examined and consideration given to whether any published evidence challenges the integrity of the approaches taken by the current International Commission on Non-Ionising Radiation Protection (International Commission on Non-Ionising Radiation Protection 1998) (formerly IRPA/INIRC) approach and the current ANSI/IEEE (IEEE 1999) approach. In addition to reviews conducted by expert groups or panels, there is a large body of literature published in peer reviewed journals which has been relied on. Recent epidemiological studies and laboratory research reports have been carefully examined for evidence that would establish a need to modify the basic restrictions or the associated reference levels. Moreover, relevant spatial and temporal measurement averaging parameters have been reviewed and where necessary revised, so as to provide an adequate and unambiguous specification of the limits.”

95 The purpose of the Australian Standard RPS3 is stated, at 42, to be “to specify limits of exposure to electromagnetic fields within radiofrequency range from 3kHz to 300 GHz such that any persons exposed below the limits will be fully protected against all established adverse health effects”.

96 The Australian Standard RPS3 concludes, at 42:

“The current scientific evidence clearly indicates that there are radiofrequency exposure thresholds for the adverse health effects of heating, electro-stimulation and auditory response. The basic restrictions of this Standard are derived from these thresholds and include safety margins.

There is some debate as to whether radiofrequency causes any effects below the threshold of exposure capable of causing heating and electro-stimulation, and in particular whether any effects occur at or below the exposure levels of the limits. If any low-level radiofrequency effects occur, they are unable to be reliably detected by modern scientific methods, but a degree of uncertainty remains. The data of long term exposure is limited. It was considered that the evidence for possible low-level effects is so weak and inconsistent, that it does not provide a reason to alter the level of the limits. The limits specific in this Standard are designed to protect against known health effects and may not prevent possible or unknown low-level effects, although the safety margin within the limit may provide some protection against such low-level effects.

Furthermore, the reference levels given in this Standard are based on specific ‘worst case’ assumptions regarding particular exposure conditions that will lead to



exposure at the level of the basic restrictions. In the majority of exposure situations, such ‘worst case’ exposure conditions do not apply, and thus the application of the reference levels will provide additional safety margins.”

97 The Standard envisages and sets basic restrictions to take account of different groups within the general public, including children. The basic restrictions in the Standard account for different sizes and tissue properties of all individuals, including children: at 42–43 of Australian Standard RPS3.

### Application of the Australian Standard RPS3

98 It is not appropriate for a court to set aside or disregard such an authoritative and scientifically credible standard as the Australian Standard RPS3: *Connell Wagner Pty Ltd v City of Port Phillip* [1998] VCAT 606 and *Wyman v Kingston City Council* (Victorian Civil and Administrative Tribunal, 8 March 2005, unreported) at [7].

99 Nor is it appropriate for a court to pioneer standards of its own. The creation of new standards is the responsibility of other authorities with special expertise, such as the Australian Radiation Protection and Nuclear Safety Authority: *Hyett R v Corangamite Shire Council* [1999] VCAT 794; *Telstra Corporation Ltd v Pine Rivers Shire Council* [2001] QPELR 350 at 364 [61], 379 [117]; *Lucent Technologies v Maribyrnong City Council* [2001] VCAT 1955 at [52], [57]; *Peasley v Frankston City Council* [2002] VCAT 642; *Telstra Corporation Ltd v Moreland City Council* [2002] VCAT 1294 at [32]; *Optus Mobile Ltd v Whittlesea City Council* [2003] VCAT 968 at [24]; *Optus Mobile Ltd v Cardinia Shire Council* [2004] VCAT 581 at [17], [19]; *Telstra Ltd v Mornington Peninsula Shire Council* [2005] VCAT 863 at [20]; *Hutchison 3G Australia Pty Ltd v Hobsons Bay City Council* [2005] VCAT 1470 at [28]–[29].

100 The Court should accept and apply the Australian Standard RPS3: *Sinclair v Loddon Shire Council* [1997] VCAT 241; *Telstra Corporation Ltd v Pine Rivers Shire Council* (at 364 [61]); *Optus Mobile Ltd v Whittlesea City Council* [2003] VCAT 968 at [26]; *Blake Dawson Waldron on behalf of Telstra Corporation v West Tamar Council* [2004] TASRMPAT 201 at [43]; *Hutchison Telecommunication (Australia) Ltd v Ku-ring-gai Municipal Council* [2004] NSWLEC 665 at [15]; see also *McIntyre v Christchurch City Council* [1996] NZRMA 289 at 295.

101 The Australian Standard RPS3 embraces a precautionary approach. The exposure limits set are conservative relative to the scientific evidence on biological effects of exposure to radiofrequency fields. There are margins for safety in the basic restrictions and associated reference levels. The reference levels are based on worst case assumptions: *Optus Communications Pty Ltd v Corporation of the City of Kensington and Norwood* [1998] SAERDC 480 at [6]; *Shirley Primary School v Telecom Mobile Communications Ltd* [1999] NZRMA 66 at 143 [250]; *Lucent Technologies v Maribyrnong City Council* (at [26]); *Optus Mobile Ltd v Whittlesea City Council* (at [25]).

102 Another precautionary approach advocated by the Australian Standard RPS3 (at 29) is, in relation to the general public, to adopt the principle of:

“Minimising, as appropriate, radiofrequency exposure which is unnecessary or incidental to achievement of service objectives or process requirements, provided this can be readily achieved at reasonable expense. Any such precautionary measures should follow good engineering practice and relevant codes of practice.

The incorporation of arbitrary additional safety factors beyond the exposure limits of this Standard is not supported” (s 5.7(e)).

103 This precautionary approach has been adopted by Telstra in its proposal. The nature and design of the antennas, their tilt and pan, the nature and quality of the radio equipment comprising the proposed base station and the efficient use of the equipment including the use of adaptive power control, all operate to minimise radiofrequency electromagnetic energy exposure: see also *Connell Wagner Pty Ltd v City of Port Phillip* [1998] VCAT 606 and *Vertical Telecoms Pty Ltd v Hornsby Shire Council* [2000] NSWLEC 172 at [7].

104 No evidence was put forward to suggest that any radiofrequency electromagnetic energy exposure from the proposed base station was unnecessary or incidental to the achievement of service objectives or process requirements for the proposed base station. Dr Black stated there were no other precautionary measures that could be taken to further minimise radiofrequency electromagnetic energy exposure from the proposed base station and certainly none that could be readily achieved at reasonable expense.

105 Accordingly, the proposed base station meets the precautionary approach recommended by the Australian Standard RPS3.

106 Indeed, as was concluded in *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [70]), “the safeguards generally adopted, and applied to this proposal, are for more stringent than any research has shown to be necessary”.

#### **Ecologically sustainable development**

107 The issue of the effect of radiofrequency electromagnetic energy emitted from the proposed base station raises the question of the ecological sustainability of the development, and in particular the applicability of the precautionary principle to the development. I will first outline the basic concept of ecologically sustainable development and then its applicability to the determination of development applications under the *Environmental Planning and Assessment Act*. I will next focus on the precautionary principle and its applicability to the proposed development in this case.

108 Ecologically sustainable development, in its most basic formulation, is “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”: World Commission on Environment and Development, *Our Common Future* (Oxford, Oxford University Press 1987) at 44 (also known as the *Brundtland Report* after the Chairperson of the Commission, Gro Harlem Brundtland). More particularly, ecologically sustainable development involves a cluster of elements or principles. Six are worth highlighting.

109 First, from the very name itself comes the principle of sustainable use — the aim of exploiting natural resources in a manner which is “sustainable” or “prudent” or “rational” or “wise” or “appropriate”: P Sands, *Principles of International Environmental Law*, 2nd ed (2003) Cambridge, Cambridge University Press, at 253. The concept of sustainability applies not merely to development but to the environment. The Australian *National Strategy for Ecologically Sustainable Development* makes this explicit in defining ecologically sustainable development as “[d]evelopment 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”: Department of the Environment and Water Resources, *Ecologically Sustainable Development Steering Committee*,

*National Strategy for Ecologically Sustainable Development* (Canberra, AGPS 1992) at 8.

110 Secondly, ecologically sustainable development requires the effective integration of economic and environmental considerations in the decision-making process: see the chapeau to the definition of ecologically sustainable development in s 6(2) of the *Protection of the Environment Administration Act* 1991 adopted by s 4(1) of the *Environmental Planning and Assessment Act* and Principle 4 of the Rio Declaration on Environment and Development. This is the principle of integration it was the philosophical underpinning of the report *Our Common Future*. That report recognised that the ecologically harmful cycle caused by economic development without regard to and at the cost of the environment could only be broken by integrating environmental concerns with economic goals.

111 The principle of integration ensures mutual respect and reciprocity between economic and environmental considerations. The principle recognises the need to ensure not only that environmental considerations are integrated into economic and other development plans, programmes and projects but also that development needs are taken into account in applying environmental objectives: see *Principles of International Environmental Law*, at 253.

112 The principle has been refined in recent times to add social development to economic development and environmental protection. The Plan of Implementation of the World Summit on Sustainable Development held in Johannesburg, 2002, notes (at [2]) that efforts need to be taken to:

“promote the integration of the three components of sustainable development — economic development, social development and environmental protection — as interdependent and mutually reinforcing pillars. Poverty eradication, changing unsustainable patterns of production and consumption and protecting and managing the natural resource base of economic and social development are overarching objectives of, and essential requirements for, sustainable development.”

113 Thirdly, there is the precautionary principle. There are numerous formulations of the precautionary principle but the most widely employed formulation adopted in Australia is that stated in s 6(2)(a) of the *Protection of the Environment Administration Act*. This provides:

**“6 Objectives of the Authority**

...

(2)(a)

... if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.

In the application of the precautionary principle, public and private decisions should be guided by:

(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and

(ii) an assessment of the risk-weighted consequences of various options,”

See also s 3.5.1 of the *Intergovernmental Agreement on the Environment*, 1992 (available at <<http://www.deh.gov.au>>).

114 Principle 15 of the Rio Declaration on Environment and Development is expressed in similar terms.

115 This is the particular principle of ecologically sustainable development invoked by the Council and the residents in this case in aid of their opposition to the proposed base station. I will return to it shortly.

116 Fourthly, there are principles of equity. There is a need for inter-generational equity — the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations: see s 6(2)(b) of the *Protection of the Environment Administration Act*; s 3.5.2 of the *Intergovernmental Agreement on the Environment*; and Principle 3 of the Rio Declaration on Environment and Development.

117 There is also a need for intra-generational equity. This involves considerations of equity within the present generation, such as use of natural resources by one nation-state (or sector or class within a nation-state) needing to take account of the needs of other nation-states (or sectors or classes within a nation-state): *Principles of International Environmental Law*, at 253, and E Brown Weiss, “Intergenerational Equity: a legal framework for global environmental change” in E Brown Weiss (ed), *Environmental Change and International Law: New Challenges and Dimensions* (1992) Tokyo, UN University Press, at 397–398. It involves people within the present generation having equal rights to benefit from the exploitation of resources and from the enjoyment of a clean and healthy environment: B Boer, “Institutionalising Ecologically Sustainable Development: The Role of National, State and Local Governments in Translating Grand Strategy into Action” (1995) 31 *Willamette Law Review* 307 at 320.

118 Fifthly, there is the principle that conservation of biological diversity and ecologically integrity should be a fundamental consideration: s 6(2)(c) of the *Protection of the Environment Administration Act*; s 3.5.3 of the *Intergovernmental Agreement on the Environment* and *Bentley v BGP Properties Pty Ltd* (2006) 145 LGERA 234 at 243 [58]–[63].

119 Sixthly, ecologically sustainable development involves the internalisation of environmental costs into decision-making for economic and other development plans, programmes and projects likely to affect the environment. This is the principle of the internalisation of environmental costs. The principle requires accounting for both the short-term and the long-term external environmental costs. This can be undertaken in a number of ways including:

- (a) environmental factors being included in the valuation of assets and services;
- (b) adopting the polluter pays (or user pays) principle, that is to say, those who generate pollution and waste should bear the costs of containment, avoidance or abatement;
- (c) the users of goods and services paying prices based on the full life cycle of the costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste; and
- (d) environmental goals, having been established, being pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems: see s 6(2)(d) of the *Protection of the Environment Administration Act* and s 3.5.4 of the *Intergovernmental Agreement on the Environment*.

120 These principles do not exhaustively describe the full ambit of the concept of ecologically sustainable development, but they do afford guidance in most situations. These principles, if adequately implemented, may ultimately realise a paradigm shift from a world in which the development of the environment takes place without regard to environmental consequences, to one where a culture of sustainability extends to institutions, private development interests, communities and individuals: B Boer, “The Globalisation of Environmental Law” (1995) 20 *Melbourne University Law Review* 101 at 111.

121 The principles of ecologically sustainable development are to be applied when decisions are being made under any legislative enactment or instrument which adopts the principles: *Murrumbidgee Ground-Water Preservation Association v Minister for Natural Resources* [2004] NSWLEC 122 at [178]; *Bentley v BGP Properties Pty Ltd* (at 243 [57]).

122 The *Environmental Planning and Assessment Act* is one such legislative enactment. It expressly states that one of the objects of the *Environmental Planning and Assessment Act* is to encourage ecologically sustainable development: s 5(a)(vii). The Act defines ecologically sustainable development as having the same meaning as it has in s 6(2) of the *Protection of the Environment Administration Act*.

123 Section 79C(1) of the *Environmental Planning and Assessment Act*, which sets out the relevant matters which a consent authority must take into consideration, does not expressly refer to ecologically sustainable development. Nevertheless, it does require a consent authority to take into account “the public interest” in s 79C(1)(e). The consideration of the public interest is ample enough, having regard to the subject matter, scope and purpose of the *Environmental Planning and Assessment Act*, to embrace ecologically sustainable development.

124 Accordingly, by requiring a consent authority (or on a merits review appeal the Court) to have regard to the public interest, s 79C(1)(e) of the *Environmental Planning and Assessment Act* obliges the consent authority to have regard to the principles of ecologically sustainable development in cases where issues relevant to those principles arise: *Carstens v Pittwater Council* (1999) 111 LGERA 1 at 25; *BGP Properties Pty Ltd v Lake Macquarie City Council* (2004) 138 LGERA 237 at 262 [113]; *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning* [2005] NSWLEC 426 at [54].

### **The precautionary principle**

#### *The precautionary principle explored*

125 I have set out in the preceding section on ecologically sustainable development, the formulation of the precautionary principle in s 6(2) of the *Protection of the Environment Administration Act* which is adopted by s 4(1) of the *Environmental Planning and Assessment Act*: (see at 266 [112] supra).

126 A number of decisions in this Court have established that the precautionary principle is to be considered in making determinations of development applications under the *Environmental Planning and Assessment Act*: *Carstens v Pittwater Council* (at 25); *Hutchison Telecommunications (Australia) Pty Ltd v Baulkham Hills Shire Council* [2004] NSWLEC 104 at [26]; *BGP Properties Pty Ltd v Lake Macquarie City Council* (at 262 [113]–[114]); *B T Goldsmith Planning Services Pty Ltd v Blacktown City Council* [2005] NSWLEC 210 at [73]; *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and*

*Planning* [2005] NSWLEC 426 at [54]; *Providence Projects Pty Ltd v Gosford City Council* [2006] NSWLEC 52 at [68], [76], [108]; *Gales Holdings Pty Ltd v Tweed Shire Council* [2006] NSWLEC 85 at [56]–[61].

127 However, there has not yet been, in the decisions of this Court, a detailed explanation of the precautionary principle or the procedure for application of it. Hence, it is necessary to refer to other sources of information on the precautionary principle, including judicial decisions of other jurisdictions and the academic literature on the precautionary principle. Drawing on these sources, the following guidance can be offered on the concept of the precautionary principle and its application.

*Conditions precedent or thresholds to application of the precautionary principle*

128 The application of the precautionary principle and the concomitant need to take precautionary measures is triggered by the satisfaction of two conditions precedent or thresholds: a threat of serious or irreversible environmental damage and scientific uncertainty as to the environmental damage. These conditions or thresholds are cumulative. Once both of these conditions or thresholds are satisfied, a precautionary measure may be taken to avert the anticipated threat of environmental damage, but it should be proportionate: N de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules* (2005) Oxford, Oxford University Press, at 155.

*Threat of serious or irreversible damage*

129 Two points need to be noted about the first condition precedent that there be a threat of serious or irreversible environmental damage. First, it is not necessary that serious or irreversible environmental damage has actually occurred — it is the threat of such damage that is required. Secondly, the environmental damage threatened must attain the threshold of being serious or irreversible.

130 Threats to the environment that should be addressed include direct and indirect threats, secondary and long-term threats and the incremental or cumulative impacts of multiple or repeated actions or decisions. Where threats may interact or be interrelated (for example where action against one threat may exacerbate another threat) they should not be addressed in isolation: see “Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management”, R Cooney and B Dickson (eds), *Biodiversity and the Precautionary Principle: Risk and Uncertainty in Conservation and Sustainable Use* (2005) Vancouver, Earthscan Publications at 302, Guideline 6.

131 Assessing the seriousness or irreversibility of environmental damage involves consideration of many factors: see, for example, the suggested process of analysis in A Deville and R Harding, *Applying the Precautionary Principle* (1997) Annandale, Federation Press, at 25–31 and the discussion in *Environmental Principles: From Political Slogans to Legal Rules*, at 163–165. The factors might include:

- (a) the spatial scale of the threat (for example, local, regional, statewide, national, international);
- (b) the magnitude of possible impacts, on both natural and human systems;
- (c) the perceived value of the threatened environment;

- (d) the temporal scale of possible impacts, in terms of both the timing and the longevity (or persistence) of the impacts;
- (e) the complexity and connectivity of the possible impacts;
- (f) the manageability of possible impacts, having regard to the availability of means and the acceptability of means;
- (g) the level of public concern, and the rationality of and scientific or other evidentiary basis for the public concern; and
- (h) the reversibility of the possible impacts and, if reversible, the time frame for reversing the impacts, and the difficulty and expense of reversing the impacts.

132 The assessment of whether the threats are serious or irreversible will be enhanced by broadening the range of professional expertise consulted and seeking and taking into account the views of relevant stakeholders and rightholders. The former is important because of the inter-disciplinary nature of the questions involved. The latter is important because different judgments, values and cultural perceptions of risk, threat and required action play a role in the assessment process: see Appendix A to R Cooney and B Dickson (eds), *Biodiversity and the Precautionary Principle: Risk and Uncertainty in Conservation and Sustainable Use*, at 301, Guideline 4, and *Applying the precautionary principle*, at 26.

133 The assessment involves ascertaining whether scientifically reasonable (that is, based on scientifically plausible reasoning) scenarios or models of possible harm that may result have been formulated: World Commission on the Ethics of Scientific Knowledge and Technology, *The Precautionary Principle* (Paris, UNESCO, 2005) at 31.

134 The threat of environmental damage must be adequately sustained by scientific evidence. As was held in *Monsanto Agricoltura Italia v Presidenza del Consiglio dei Ministri* (European Court of Justice, Case C-236/01, 13 March 2003, unreported) at [138]:

“... not every claim or scientifically unfounded presumption of potential risk to human health or the environment can justify the adoption of national protective measures. Rather, the risk must be adequately substantiated by scientific evidence.”

135 In *Daubert v Merrell Dow Pharmaceuticals Inc* 509 US 579 (1993) at 589–590, the United States Supreme Court held that in a case involving scientific evidence, the evidence must pertain to scientific knowledge. The adjective “scientific” implies a grounding in the methods and procedures of science and the word “knowledge” connotes more than subjective belief or unsupported speculation. The requirement that expert evidence pertain to scientific knowledge establishes a standard of evidentiary reliability.

136 In *Hungary v Slovakia, Re Gabčíkovo-Nagymaros Project (Danube Dam Case)* [1997] ICJ Rep 7, the International Court of Justice held that Hungary had not established that there existed a state of necessity justifying the suspension of its treaty obligations with the former Czechoslovakia. A state of necessity has to be occasioned by an essential interest of the State and the interest must have been threatened by a grave and imminent peril (a concept equivalent to a threat). The International Court of Justice did not accept that Hungary had established the objective existence of a grave and imminent peril

and hence a component element of a state of necessity was absent. The Court noted (at [54]):

“... The word ‘peril’ certainly evokes the idea of ‘risk’; that is precisely what distinguishes ‘peril’ from material damage. But a state of necessity could not exist without a ‘peril’ duly established at the relevant point in time; the mere apprehension of a possible ‘peril’ could not suffice in that respect.”

137 Determining the existence of a threat of serious or irreversible environmental damage does not involve, at the stage of assessing the first condition precedent, any evaluation of the scientific uncertainty of the threat. That evaluation comes in the following steps of analysis.

138 If there is not a threat of serious or irreversible environmental damage, there is no basis upon which the precautionary principle can operate. The precautionary principle does not apply, and precautionary measures cannot be taken, to regulate a threat of negligible environmental damage: *Environmental Principles: From Political Slogans to Legal Rules*, at 163.

139 This was the conclusion in *Alumino (Aust) Pty Ltd v Minister Administering the Environmental Planning and Assessment Act 1979* [1996] NSWLEC 102 at 15–16, where the evidence established that the development could be operated in a way which would not have any significant environmental consequence. So too in *Hutchison Telecommunications (Australia) Pty Ltd v Baulkham Hills Shire Council* (at [27]), where compliance of a development with the relevant standard for the protection of public health and safety by a significant margin meant that there was no threat of serious or irreversible damage to public health and safety from the development, and hence no basis on which to apply the precautionary principle.

#### *Scientific uncertainty*

140 The second condition precedent required to trigger the application of the precautionary principle and the necessity to take precautionary measures is that there be “a lack of full scientific certainty”. The uncertainty is as to the nature and scope of the threat of environmental damage: *Leatch v National Parks and Wildlife Services* (1993) 81 LGERA 270 at 282.

141 Assessing the degree of scientific uncertainty also involves a process of analysis of many factors: see *Applying the Precautionary Principle*, at 31–37. The assessment of the degree of uncertainty might include consideration of the following factors:

- (a) the sufficiency of the evidence that there might be serious or irreversible environmental harm caused by the development plan, programme or project;
- (b) the level of uncertainty, including the kind of uncertainty (such as technical, methodological or epistemological uncertainty); and
- (c) the potential to reduce uncertainty having regard to what is possible in principle, economically and within a reasonable time frame.

142 One issue that the formulation of the precautionary principle raises is how much scientific uncertainty must exist. On a literal reading, the threshold is crossed whenever there is a lack of “full” scientific certainty. Yet, such a literal interpretation of the principle would render this condition meaningless.

143 Certainly, “full” scientific certainty as to the threat of environmental damage would be an unattainable goal: *Nicholls v Director-General of National Parks and Wildlife* (1994) 84 LGERA 397 at 419. It is impossible to be completely certain about the threats of environmental damage: C Barton, “The status of the



precautionary principle in Australia: Its emergence in legislation and as a common law doctrine” (1998) 22 *Harvard Environmental Law Review* 509 at 518.

144 It cannot be unequivocally stated that a particular phenomenon will never cause adverse effects. This is because a null hypothesis can never be proven through processes of inductive logic. Indeed, this point is made in the Australian Standard RPS3 at 41. Karl Popper, the eminent scientific philosopher, has also explained why it is impossible to prove, with certainty and finality, a scientific theory. No matter how many positive instances of a generalisation are observed, it is still possible that the next instance will falsify it. However, a sound and reliable scientific theory will be one which, while being capable of being falsified, has been put to the test and has resisted falsification whenever it is put to the test: see K Popper, *Conjectures and Refutations*, 5th ed (1989) London, Routledge at 37 and *Daubert v Merrell Dow Pharmaceuticals Inc* (at 593). See also B J Preston, “Science and the Law: Evaluating evidentiary reliability” (2003) 23 *Australian Bar Review* 263 at 271, 280–282, 287.

145 Once it is accepted that the threshold is something less than full scientific certainty, the question becomes how much less? Or turning the question around, how much scientific uncertainty need there be as to the threat of environmental damage before the second condition precedent to trigger application of the precautionary principle is fulfilled?

146 Cordonier Segger and Khalfan suggest that the magnitude of environmental damage is usually inversely proportionate to the likelihood of risk in order for precaution to be triggered. That is to say, where the relevant degree or magnitude of potential environmental damage is greater, the degree of certainty about the threat is lower. They suggest that for a formulation of the precautionary principle which uses the threshold of “serious or irreversible” environmental damage, the correlative degree of certainty about the threat is “highly uncertain of threat”. This would contrast with a formulation of the precautionary principle which sets a lower degree of potential harm such as “potential adverse effects”, where the correlative degree of certainty about the threat would be higher, namely “highly certain of threat”: M-C Cordonier Segger and A Khalfan, *Sustainable Development Law: Principles, Practices and Prospects* (2004) New York, Oxford University Press, at 145–146.

147 The World Commission on the Ethics of Scientific Knowledge and Technology, in its 2005 report on the precautionary principle, postulated that one of the conditions that must be present for the precautionary principle to apply is that “considerable scientific uncertainty must exist”: *The Precautionary Principle*, at 31.

148 N de Sadeleer posits a threshold test of “reasonable scientific plausibility,” or where a threat or risk of environmental damage is considered scientifically likely. N de Sadeleer explains his test of reasonable scientific plausibility as follows (*Environmental Principles: From Political Slogans to Legal Rules*, at 160):

“... That condition would be fulfilled when empirical scientific data (as opposed to simple hypothesis, speculation, or intuition) make it reasonable to envisage a scenario, even if it does not enjoy unanimous scientific support.

When is there ‘reasonable scientific plausibility’? When risk begins to represent a minimum degree of certainty, supported by repeated experience. But a purely theoretical risk may also satisfy this condition, as soon as it becomes scientifically

credible: that is, it arises from a hypothesis formulated with methodological rigour and wins the support of part of the scientific community, albeit a minority.

The principle may consequently apply to all post-industrial risks for which a cause-and-effect relationship is not clearly established but where there is a 'reasonable scientific plausibility' that this relationship exists. This would be particularly appropriate for delayed pollution, which does not become apparent for some time and for which full scientific proof is difficult to assemble" (footnotes omitted).

See also *Applying the Precautionary Principle* at 33.

- 149 If there is no, or not considerable, scientific uncertainty (the second condition precedent is not satisfied), but there is a threat of serious or irreversible environmental damage (the first condition precedent is satisfied), the precautionary principle will not apply. The threat of serious irreversible environmental damage can be classified as relatively certain because it is possible to establish a causal link between an action or event and environmental damage, to calculate the probability of their occurrence, and to insure against them. Measures will still need to be taken but these will be preventative measures to control or regulate the relatively certain threat of serious or irreversible environmental damage, rather than precautionary measures which are appropriate in relation to uncertain threats: *Applying the Precautionary Principle*, at 31, 34; J Cameron, "The precautionary principle: Core meaning, constitutional framework and procedures for implementation" in R Harding and E Fisher (eds), *Perspectives on the Precautionary Principle* (1999) Leichhardt, Federation Press at 37; and *Environmental Principles: From Political Slogans to Legal Rules*, at 74–75, 158.

#### *Shifting of the burden of proof*

- 150 If each of the two conditions precedent or thresholds are satisfied — that is, there is a threat of serious or irreversible environmental damage and there is the requisite degree of scientific uncertainty — the precautionary principle will be activated. At this point, there is a shifting of an evidentiary burden of proof. A decision-maker must assume that the threat of serious or irreversible environmental damage is no longer uncertain but is a reality. The burden of showing that this threat does not in fact exist or is negligible effectively reverts to the proponent of the economic or other development plan, programme or project.
- 151 The rationale for requiring this shift of the burden of proof is to ensure preventative anticipation; to act before scientific certainty of cause and effect is established. It may be too late, or too difficult and costly, to change a course of action once it is proven to be harmful. The preference is to prevent environmental damage, rather than remediate it. The benefit of the doubt is given to environmental protection when there is scientific uncertainty. To avoid environmental harm, it is better to err on the side of caution.
- 152 The function of the precautionary principle is, therefore, to require the decision-maker to assume that there is, or will be, a serious or irreversible threat of environmental damage and to take this into account, notwithstanding that there is a degree of scientific uncertainty about whether the threat really exists: see J Cameron and J Aboucher, "The Precautionary Principle: A Fundamental Principle of Law and Policy for the Protection of the Global Environment" (1991) 14 *Boston College International and Comparative Law Review* 1 at 22; B Boer, "Implementing Sustainability" (1992) 14 *Delhi Law*

*Review* 1 at 17; B A Weintraub, “Science, International Environmental Regulation, and the Precautionary Principle: Setting Standards and Defining Terms” (1992) 1 *NYU Environmental Law Journal* 173 at 204–207; W Gullett, “Environmental Protection and the ‘Precautionary Principle’: A Response to Scientific Uncertainty in Environmental Management” (1997) 14 *Environmental and Planning Law Journal* 52 at 59–60; C Barton, “The status of the precautionary principle in Australia: Its emergence in legislation and as a common law doctrine” (1998) 22 *Harvard Environmental Law Review* 509 at 519 and 549–551; D Farrier, “Factoring biodiversity conservation into decision-making processes: The role of the precautionary principle” in R Harding and E Fisher (eds), *Perspectives on the Precautionary Principle* (1999) Leichhardt, Federation Press, at 107–110; *Conservation Council of South Australia v Development Assessment Committee and Tuna Boat Owners Association (No 2)* [1999] SAERDC 86 at [24]–[25]; M Parnell, “Southern Bluefin Tuna Feedlotting: ESD, the Precautionary Principle and Burden of Proof” (1999) 9 *Journal of International Wildlife Law and Policy* 334; *Tuna Boat Owners Association of SA Inc v Development Assessment Commission* (2000) 77 SASR 369 at 373 [27]–374 [30]; *Vellore Citizens Welfare Forum v Union of India* AIR 1996 SC 2715 at 2720 [11]; *A P Pollution Control Board v Bayadu* AIR 1999 SC 812 at 819 [27]–[39]; *Narmada Bachao Andolan v Union of India* AIR 2000 SC 3751 at 3803 [15]; *Sustainable Development Law: Principles, Practices and Prospects*, at 144, 150.

- 153 An illustration of this function of the precautionary principle can be found in *Providence Projects Pty Ltd v Gosford City Council* (2006) 147 LGERA 274, in which there was scientific uncertainty as to whether a proposed development would cause serious or irreversible environmental damage to a threatened ecological community, the Umina Coastal Sandplain Woodland (UCSW). This scientific uncertainty stemmed from uncertainty as to whether the threatened ecological community was widely distributed over the site. The function of the precautionary principle was to shift the burden of proof in relation to this question. Bignold J held (at 289 [77]):

“[77] The application of the precautionary principle in the present case justifies an approach which avoids the risk of serious or irreversible environmental damage by assuming the existence of the wide distribution of UCSW over the development site.”

- 154 It should be recognised that the shifting of the evidentiary burden of proof operates in relation to only one input of the decision-making process — the question of environmental damage. If a proponent of a plan, programme or project fails to discharge the burden to prove that there is no threat of serious or irreversible environmental damage, this does not necessarily mean that the plan, programme or project must be refused. It simply means that, in making the final decision, the decision-maker must assume that there will be serious or irreversible environmental damage. This assumed factor must be taken into account in the calculus which decision-makers are instructed to apply under environmental legislation (such as s 79C(1) of the *Environmental Planning and Assessment Act*). There is nothing in the formulation of the precautionary principle which requires decision-makers to give the assumed factor (the serious or irreversible environmental damage) overriding weight compared to the other factors required to be considered, such as social and economic factors, when deciding how to proceed: “Factoring biodiversity conservation

into decision-making processes: The role of the precautionary principle” at 108.

155 This was the conclusion in *Greenpeace Australia Ltd v Redbank Power Co Pty Ltd* (1994) 86 LGERA 143 at 154, where Pearlman J held that:

“... The application of the precautionary principle dictates that a cautious approach should be adopted in evaluating the various relevant factors in determining whether or not to grant consent; it does not require that the greenhouse issue should outweigh all other issues.”

*Precautionary principle invokes preventative anticipation*

156 The precautionary principle permits the taking of preventative measures without having to wait until the reality and seriousness of the threats become fully known: *Pfizer Animal Health SA v Council of the European Union* [2002] ECR II-3305 at [139]; *Monsanto Agricoltura Italia v Presidenza del Consiglio dei Ministri* (at [111]). This is the concept of preventative anticipation: T O’Riordan and J Cameron, “The History and Contemporary Significance of the Precautionary Principle” in T O’Riordan and J Cameron (eds), *Interpreting the Precautionary Principle* (1994) London, Earthscan Publications at 17; and *Principles of International Environmental Law*, at 269.

*Zero risk precautionary standard inappropriate*

157 The precautionary principle should not be used to try to avoid all risks. As the United States Supreme Court said in *Industrial Union Department AFL-CIO v American Petroleum Institute* 448 US 607 (1980) at 655: “Some risks are plainly acceptable and others are plainly unacceptable”.

158 A zero risk precautionary standard is inappropriate: see W Th Douma, “Analysis on *Pfizer Animal Health SA v Council of the European Union*” (2003) 15 *Journal of Environmental Law* 394 at 401. The Advocate General, in his opinion in *National Farmers’ Union v Secretary Central of the French Government* (European Court of Justice, Case C-241/01, 2 July 2002, unreported) at [76] stated:

“... the precautionary principle has a future only to the extent that, far from opening the door wide to irrationality, it establishes itself as an aspect of the rational management of risks, designed not to achieve a zero risk, which everything suggests does not exist, but to limit the risks to which citizens are exposed to the lowest level reasonably imaginable.”

See also *EFTA Surveillance Authority v Norway* (European Free Trade Association (EFTA) Court, Case E-3/00, 5 April 2001, unreported) at [32].

159 Rationality dictates that the precautionary principle and any preventative measure cannot be based on a purely hypothetical approach to the risk, founded on mere conjecture which has not been scientifically verified: *Pfizer Animal Health SA v Council of the European Union* (at [145]) and *EFTA Surveillance Authority v Norway* (at [29]). Rather, a preventative measure may be taken only if the risk, although the reality and extent of the risk have not been “fully” demonstrated by conclusive scientific evidence, appears nevertheless to be adequately backed up by the scientific data available at the time when the measure was taken: *Pfizer Animal Health SA v Council of the European Union* (at [145]) and *Monsanto Agricoltura Italia v Presidenza del Consiglio dei Ministri* (at [113]).

160 N de Sadeleer in *Environmental Principles: From Political Slogans to Legal Rules* at 158, expresses this approach in the following passage:

“Adherence to the adage ‘when in doubt, do nothing’ should not overshadow the complementary wisdom that ‘there’s such a thing as being too careful’. To avoid having the best become the enemy of the good, the [precautionary] principle’s field of application must exclude those risks characterised as residual, that is, hypothetical risks resting on purely speculative considerations without any scientific foundation. Speculation, conjecture, intuition, warnings, denunciations, or implications should not suffice in and of themselves to justify an attitude of precaution.”

*Degree of precaution required*

161 The type and level of precautionary measures that will be appropriate will depend on the combined effect of the degree of seriousness and irreversibility of the threat and the degree of uncertainty. This involves assessment of risk in its usual formulation, namely the probability of the event occurring and the seriousness of the consequences should it occur. The more significant and the more uncertain the threat, the greater the degree of precaution required: *Applying the Precautionary Principle*, at 37 and “The precautionary principle: Core meaning, constitutional framework and procedures for implementation”, at 37–38 and Commission on Environmental Law of IUCN (the World Conservation Union), *Draft International Covenant on Environment and Development*, 3rd ed, Environmental Policy & Law Paper No 31, Rev 2, (2004) at 45.

162 Prudence would also suggest that some margin for error should be retained until all the consequences of the decision to proceed with the development plan, programme or project are known. This allows for potential errors in risk assessment and cost-benefit analysis. Potential errors are weighted in favour of environmental protection. Weighting the risk of error in favour of the environment is to safeguard ecological space or environmental room for manoeuvre: “The History and Contemporary Significance of the Precautionary Principle”, at 17; and C Barton, “The status of the precautionary principle in Australia: its emergence in legislation and as a common law doctrine” (1998) 22 *Harvard Environmental Law Review* 509 at 520.

163 One means of retaining a margin for error is to implement a step-wise or adaptive management approach, whereby uncertainties are acknowledged and the area affected by the development plan, programme or project is expanded as the extent of uncertainty is reduced: M D Young, “The precautionary principle as a key element of ecologically sustainable development” in R Harding and E Fisher (eds), *Perspectives on the Precautionary Principle* (1999) Leichhardt, Federation Press, at 140.

164 An adaptive management approach might involve the following core elements:

- monitoring of impacts of management or decisions based on agreed indicators;
- promoting research, to reduce key uncertainties;
- ensuring periodic evaluation of the outcomes of implementation, drawing of lessons, and review of adjustment, as necessary of the measures or decisions adopted; and
- establishing an efficient and effective compliance system” (see “Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management” at 304, Guideline 12).

165 An adaptive management approach was required in *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning*. Talbot J held that application of the precautionary principle required that consent should only be granted if there was a monitoring regime that would detect emerging adverse impacts and enable the appropriate regulatory authority to require them to be addressed if and when they emerged (at [58]). See also *Tuna Boat Owners Association of SA Inc v Development Assessment Commission* (at 375 [35]).

*Proportionality of response*

166 The precautionary principle embraces the concept of proportionality. The concept of proportionality is that measures should not go beyond what is appropriate and necessary in order to achieve the objectives in question. Where there is a choice between several appropriate measures, recourse should be had to the least onerous measure and the disadvantages caused should not be disproportionate to the aims pursued.

167 In applying the precautionary principle, measures should be adopted that are proportionate to the potential threats. A reasonable balance must be struck between the stringency of the precautionary measures, which may have associated costs, such as financial, livelihood and opportunity costs, and the seriousness and irreversibility of the potential threat: see “Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management”, at 304, Guideline 10.

168 The European Commission states in its Communication on the Precautionary Principle European Commission, *Communication from the Commission on the Precautionary Principle* (2000) at 18, Pt 6.3.1 (available at <<http://ec.europa.eu>>):

“... Measures based on the precautionary principle must not be disproportionate to the desired level of protection and must not aim at zero risk, something which rarely exists.”

169 Considerations of practicability need to be taken into account: see the definition of the precautionary principle which requires “careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment” in s 6(2)(a)(i) of the *Protection of the Environment Administration Act*. One consideration of practicability is the cost of precautionary measures.

170 There must be proportionality of response or cost effectiveness of margins of error to show that the selected precautionary measure is not unduly costly: T O’Riordan and J Cameron, “The History and Contemporary Significance of the Precautionary Principle”, at 17, and *National Farmers’ Union v Secretary Central of the French Government* (at [78]).

171 The cost consequences of increasing levels of precaution must be evaluated. As O’Riordan notes (T O’Riordan, “The Precaution Principle in Environmental Management” in R Ayres and UE Simonis (eds), *Industrial Metabolism: restructuring for sustainable development* (1994) New York, UN University Press):

“There are some dangers with getting too carried away with the application of precaution at any cost. In the absence of comparative risk assessment, the consequences of curtailing potentially beneficial activity and creating another set of unforeseeable risks for an unprepared society could be greater than proceeding step by step with prudent precaution.”

See also *Applying the Precautionary Principle*, at 43–44 and “The Precautionary Principle: Core meaning, constitutional framework and procedures for implementation”, at 42.

172 The selection of the appropriate precautionary measures to regulate the identified threat of serious or irreversible environmental damage with its identified uncertainty, requires assessment of the risk-weighted consequences of various options: see the definition of the precautionary principle in s 6(2)(a)(ii) of the *Protection of the Environment Administration Act*. The available options to address the threat should be identified and the likely consequences of these options and of inaction should be assessed: see “Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management”, at 303.

173 The process of assessment of the risk-weighted consequences of options for precautionary measures has been suggested to involve a form of cost-benefit analysis with risk aversion assumed: see generally, R Posner, *Catastrophe: Risk and Response* (2004) Oxford, Oxford University Press; C Gollier, B Jullien, N Treich, “Scientific Progress and Irreversibility: an economic interpretation of the ‘Precautionary Principle’” (2000) 75 *Journal of Public Economics* 229; and *R v Secretary of State for Trade and Industry; Ex parte Duddridge* [1995] Env LR 151.

174 However, there are difficulties in the application of the traditional form of cost-benefit analysis used in economics. First, traditional cost-benefit analysis tends to squeeze out qualitative soft values in favour of quantifiable hard values: see L Tribe, “Ways not to think about Plastic Trees: New Foundations for Environmental Law” (1974) 83 *Yale Law Journal* 1315 and N de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules*, at 199. This is what occurred in *Leach v National Parks and Wildlife Service* (at 286), where environmental factors were not included in the cost-benefit analysis.

175 Secondly, traditional cost-benefit analysis has difficulty in correctly internalising all externalities in the context of uncertainty. There are no simple or comprehensive rules in economic analysis for integrating risk and uncertainty into decision-making: see D Pearce, “The Precautionary Principle and Economic Analysis” in T O’Riordan and J Cameron (eds), *Interpreting the Precautionary Principle* (2004) London, Earthscan Publications, at 140, and N de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules*, at 170. There is a difficulty in translating risks into monetary equivalents: C R Sunstein, “Cost-Benefit Analysis and the Environment” (2005) 115 *Ethics* 351 at 369, 384; and C R Sunstein, *Laws of Fear: Beyond the Precautionary Principle* (2005) Cambridge, Cambridge University Press at 7, 131.

176 One solution suggested is to combine economic and non-economic measures by way of multi-criteria analysis. Multi-criteria analysis is a tool for integrating different types of monetary and non-monetary decision criteria. It deals with situations where decisions must be made taking into account multiple objectives, which cannot be reduced to a single dimension. Usually, multi-criteria analysis is clustered into three dimensions: the ecological, the economic and the social. Within each of these dimensions certain criteria are set so that decision-makers can weigh the importance of one element in association with other elements. Monetary values and cost-benefit analysis measures can be incorporated as one of the criteria to be considered, and weighted against the other criteria in decision-making: L Emerton,

M Grieg-Gran, M Kallesoe and J MacGregor, “Economics, the Precautionary Principle and Natural Resource Management: Key Issues, Tools and Practices” in R Cooney and B Dickson (eds), *Biodiversity and the Precautionary Principle: Risk and Uncertainty in Conservation and Sustainable Use* (2005) Vancouver, Earthscan Publications, at 265.

177 The selection of the appropriate precautionary measures must involve examining both sides of the ledger: the costs associated with the project, process or product (which tends to increase the degree of precaution) as well as the benefits of the project, process or product (which tends to decrease the degree of precaution commensurate with realising the benefit). As Sunstein notes (at 366):

“Advocates of precaution often emphasise the costs associated with a product or process, without seeing that it may have benefits as well; and sometimes those benefits involve the environment itself. Why should regulators examine only one side of the ledger?”

See generally C R Sunstein, *Laws of Fear: Beyond the Precautionary Principle*.

178 In assessing the proportionality of a precautionary measure, consideration needs to be given to non-targeted risks that might arise. Efforts to eliminate all of the targeted risks might cause other adverse consequences. One adverse consequence may be that in addressing ever smaller target risks, the importance of countervailing risks relative to the target risks is likely to grow: F B Cross, “Paradoxical Perils of the Precautionary Principle” (1996) 53 *Washington and Lee Law Review* 851 at 860, 898, 906, 924; and N de Sadeleer, *Environmental Principles: From Political Slogans to Legal Rules*, at 171–172.

*Precautionary principle does not necessarily prohibit development*

179 The precautionary principle, where triggered, does not necessarily prohibit the carrying out of a development plan, programme or project until full scientific certainty is attained: P Stein, “A Cautious Application of the Precautionary Principle” (2002) 2 *Environmental Law Review* 1 at 10; *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [68]); *Telstra Corporation Ltd v Pine Rivers Shire Council* (at 380 [119]); *BGP Properties Pty Ltd v Lake Macquarie City Council* (at 262 [114]); A Deville and R Harding, *Applying the Precautionary Principle*, at 44 and M D Young, “The precautionary principle as a key element of ecologically sustainable development” at 138. See also *Greenpeace Australia Ltd v Redbank Power Co Pty Ltd* (at 154–155) and *Port Stephens Pearls Pty Ltd v Minister for Infrastructure and Planning* (at [56]).

180 If the precautionary principle were to be interpreted in this way, it would result in a paralysing bias in favour of the status quo and against taking precautions against risk. The precautionary principle so construed would ban “the very steps that it requires”: C R Sunstein, *Laws of Fear: Beyond the Precautionary Principle*, at 4, 14, 26. It must be recognised that “precautions against some risks almost always create other risks”: C R Sunstein, at 53.

181 The solution is to assess the risk-weighted consequences of various options and select the option that affords the appropriate degree of precaution for the set of risks associated with the option.



*Precautionary principle in context of other ecologically sustainable development principles*

- 182 The precautionary principle is but one of the set of principles of ecologically sustainable development (highlighted earlier in the judgment). It should not be viewed in isolation, but rather as part of the package. This means that the precautionary measures that should be selected must not only be appropriate having regard to the precautionary principle itself, but also in the context of the other principles of ecologically sustainable development including inter-generational and intra-generational equity and the conservation of biological diversity and ecological integrity: see A Deville and R Harding, *Applying the Precautionary Principle*, at 43. In some circumstances these other principles may strengthen the case for precautionary action, while in others the precautionary principle may need to be weighed against the other principles as well as other human rights such as food, water, health and shelter: see “Guidelines for applying the precautionary principle to biodiversity conservation and natural resource management”, at 301, Guideline 2.
- 183 In *Northcompass Inc v Hornsby Shire Council* (1996) 130 LGERA 248, the proposed development was a bioremediation plant which took green wastes away from diminishing landfill and provided value added end products. This was consistent with the principle of sustainable use of resources and the principle of intergenerational equity. However, the proposed development infringed the precautionary principle. The Court emphasised the need to consider all of the principles of ecologically sustainable development (at 246–247).

**Application of precautionary principle to this case**

- 184 In this case, the first condition precedent for the application of precautionary principle, that there be threats of serious or irreversible environmental damage, is not satisfied. The levels of radiofrequency electromagnetic energy emitted from the proposed base station will easily comply with the Australian Standard RPS3. Any harm to the health and safety of people or the environment caused by exposure to such extremely low levels of radiofrequency electromagnetic energy is negligible.
- 185 Accordingly, there is no basis on which the precautionary principle can be applied to this development. This is the same conclusion reached by other courts and tribunals dealing with other proposed mobile phone base stations and antennas which emitted radiofrequency electromagnetic energy that complied with the relevant regulatory standards: in New South Wales, see *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [68]); *NTL Australia Ltd v Willoughby Council* [2000] NSWLEC 244 at [87]; *Hutchison Telecommunications (Australia) Pty Ltd v Baulkham Hills Shire Council* (at [27]); and in other states, see: *Connell Wagner Pty Ltd v City of Port Phillip* and *Telstra Corporation Ltd v Pine Rivers Shire Council* (at 381 [121]).
- 186 This conclusion does not mean that there has been an avoidance of a precautionary approach. To the contrary, the conclusion is a direct consequence of the fact that a precautionary approach has already been adopted in the standard setting process, the terms of the Australian Standard RPS3, the design and location of the proposed base station, the equipment to be provided, the operation of the equipment including adaptive power control, the application of the Standard to the radiofrequency electromagnetic energy generated from the

base station, and the likelihood of actual radiofrequency electromagnetic energy being significantly less than predicted radiofrequency electromagnetic energy. The cumulative effect of these precautionary approaches is to prevent any threat of serious or irreversible environmental damage. Hence, there is no basis to invoke the precautionary principle so as to take any further measures to prevent environmental degradation.

187 The circumstances in this case stand in contrast to the situation that faced the Supreme Court of Pakistan in *Zia v WAPDA* (1994) PLD SC 693. There, the government agency WAPDA and the relevant government department undertook the process of planning and deciding to construct an electricity grid station in a routine manner without taking into consideration the latest research and planning in the field and without giving any thought to the potential hazards that the electromagnetic fields that radiated from the grid station might cause to human health. The Supreme Court of Pakistan held such an approach offended the precautionary principle (at [8]). Instead, a method needed to be devised to strike a balance between economic progress and prosperity and minimising possible hazards. The Court held that a policy of sustainable development should be adopted (at [10]). The appropriate precautionary measure adopted by the Supreme Court was, before passing any final order, to appoint an expert commissioner to examine and study the scheme, planning, device and technique employed by WAPDA and report whether there was any likelihood of any hazard or adverse effects on the health of the residents of the locality. The commissioner was also to suggest variation in the plan for minimising the alleged danger (at [10], [16]).

188 In the present case, such a precautionary approach has already been undertaken, first, in the standard-setting process which involved a comprehensive review of all relevant scientific literature on the potential biological effects of exposure to radiofrequency electromagnetic energy, secondly, in the adoption of the Australian Standard RPS3 with margins of safety, thirdly, in the requirements of the relevant industry code to comply with the adopted standard, fourthly, in the measurement of existing and the estimation of predicted radiofrequency electromagnetic energy levels from the proposed base station, in accordance with the accepted methodology, fifthly, in the selection of equipment and antennas to be used in the proposed base station and, finally, in the efficient operation of the equipment and antennas to minimise radiofrequency electromagnetic energy levels generated from the proposed base station. The carrying out of these precautionary measures implements, and indeed is likely to go further than, the precautionary approach required by the Supreme Court of Pakistan in *Zia v WAPDA*. The present case is, therefore, consistent with that decision.

### **Perceptions of effects on amenity and health**

189 In the determination of a development application, the consent authority (and this Court on a merits review appeal) must consider the effect of the proposed development on the amenity of the locality.

190 The concept of the amenity of the locality is wide and flexible. Some aspects of amenity are practical and tangible. Examples are traffic generation, noise, nuisance, appearance and way of life in the neighbourhood. Other aspects of amenity are intangible and subjective. They include the standard or class of the neighbourhood and the reasonable expectations of a neighbourhood: *Broad v Brisbane City Council* (1986) 59 LGRA 296 at 299. Amenity may embrace the

effect of a place on the senses and the residents' perception of the locality. Knowing the use to which a particular site is, or may be, put may affect a person's perception of amenity: *Broad v Brisbane City Council* (at 305). See also *Venus Enterprises Pty Ltd v Parramatta City Council* (1981) 43 LGRA 67 at 69; *Novak v Woodville City Corporation* (1990) 70 LGRA 233 at 236–237 and *Optus Communications Pty Ltd v Corporation of the City of Kensington and Norwood* (at 6).

191 The very wide concept of amenity expounded in cases like *Broad v Brisbane City Council* applies with even greater force in a statutory scheme like the *Environmental Planning and Assessment Act* which in s 79C(1) gives effect to the widest conceivable scope of “likely impacts” of a proposed development, including environmental, economic and social impact, without employing the term amenity: *Perry Properties Pty Ltd v Ashfield Council (No 2)* (2001) 113 LGERA 301 at 318 [64].

192 In determining the nature and scope of amenity and the impact of a proposed development on it, the consent authority may consider the community responses to the proposed development as set out in the submissions made to the consent authority: s 79C(1)(d) and s 79C(1)(e) of the *Environmental Planning and Assessment Act*. The community responses are aspects of the public interest within the meaning of s 79C(1)(e) in securing the advancement of one of the express objects of the Act “to provide increased opportunity for public involvement and participation in environmental planning and assessment”: s 5(c) of the *Environmental Planning and Assessment Act*. See also *Kulin Holdings Pty Ltd v Penrith City Council* (1999) 103 LGERA 402 at 415 and *New Century Developments Pty Ltd v Baulkham Hills Shire Council* (2003) 127 LGERA 303 at 316 [58].

193 However, in considering the community responses, an evaluation must be made of the reasonableness of the claimed perceptions of adverse effect on the amenity of the locality. An evaluation of reasonableness involves the identification of evidence that can be objectively assessed to ascertain whether it supports a factual finding of an adverse effect on the amenity of the locality.

194 In *Broad v Brisbane City Council* (at 304), de Jersey J stated:

“In determining the likely effect on a proposed development on the amenity of a neighbourhood the Local Government Court is clearly entitled to have regard to the views of residents of the area. The question is whether a resident's view should be disregarded where it appears to be purely subjectively based, with no suggested justification in objective, observable likely consequences of the establishment of the proposed use.

In my opinion, such a subjective view need not necessarily be disregarded. Very often, of course, the evidence of such a view would be accorded little, if any, weight. In forming his own view on the likely effect of a proposed development on the amenity of an area a judge would, I think, ordinarily prefer views from residents which find justification in specific, concrete, likely effects of the proposed development.”

See also *Dixon v Burwood Council* (2002) 123 LGERA 253 at 264 [53] and *New Century Developments Pty Ltd v Baulkham Hills Shire Council* (at 316 [61], 317 [63]).

195 A fear or concern without rational or justified foundation is not a matter which, by itself, can be considered as an amenity or social impact pursuant to s 79C(1) of the *Environmental Planning and Assessment Act*: *Newton v Wyong Shire Council* (McClelland J, 6 September 1983, unreported) at 110, 111; *Jarasius v Forestry Commission of New South Wales* (1988) 71 LGRA 79

at 92; *Perry Properties Pty Ltd* (at 350 [22]); *New Century Developments Pty Ltd v Baulkham Hills Shire Council* (at 316 [62]). “Mere local prejudice” or “the resistance of uninformed opinion to innovation” is not a basis for rejecting a proposal: *Cecec (No 8) Pty Ltd v Mosman Municipal Council* (1960) 5 LGRA 251 at 263; *Foreman v Sutherland Shire Council* (1964) 10 LGRA 261 at 269.

196 In this case, the residents’ perceptions of an adverse effect on the health and safety of residents and on the environment by exposure to radiofrequency electromagnetic energy emitted from the proposed base station are without justification in objective, observable, likely consequences. The claimed effects are unsubstantiated and without reasonable evidentiary foundation.

197 The concerns expressed by the residents as to radiofrequency electromagnetic energy emitted from the proposed base station do not relate to intangible matters. Rather, the concerns relate to matters which are capable of measurement and testing against established standards to see whether the concerns are justified or not: *Telstra Corporation Ltd v Pine Rivers Shire Council* (at 364). Testing against the relevant Australian Standard RPS3 proves that concerns are not justified.

198 In these circumstances, little, if any, weight can be given to the residents’ perceptions. This has been the consistent conclusion of other courts and tribunals which have determined other cases involving unsubstantiated community perceptions of adverse effects on amenity from exposure to radiofrequency electromagnetic energy from a proposed development: see *McIntyre v Christchurch City Council* (at 314–315); *Optus Communications Pty Ltd v Corporation of the City of Kensington and Norwood* (at 6); *Shirley Primary School v Telecom Mobile Communications Ltd* (at 140 [241]); *Hyett R v Corangamite Shire Council* [1999] VCAT 794; *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [69]–[70]); *Telstra Corporation Ltd v Pine Rivers Shire Council* (at 364 [60]); *Lucent Technologies v Maribyrnong City Council* (at [56]); *Blake Dawson Waldron on behalf of Telstra Corporation v West Tamar Council* (at [46]).

199 There is also a broader policy reason for the Court making its determination on the basis of reason and substantiated evidence. As Galligan notes (D J Galligan, *Discretionary Powers: A Legal Study of Official Discretion* (1990) Oxford, Clarendon Press at 314 and 316):

“A basic aspect of rational action is that facts on which decisions are founded should be supported by good evidence.

... unless there is a substratum of objective evidence for the reasons and policies acted on, discretionary decisions are liable to the charge of arbitrariness.”

200 This is the foundation for the no evidence ground of judicial review in administrative law: see generally, M Aronson, B Dyer and M Groves, *Judicial Review of Administrative Action*, 3rd ed (2004) Pyrmont, Lawbook Co at 193–195 and 239–245. As Diplock CJ said in *R v Deputy Industrial Injuries Commissioner; Ex parte Moore* [1965] 1 QB 456 at 488:

“The requirement that a person exercising quasi-judicial functions must base his decisions on evidence means no more than it must be based upon material which tends logically to show the existence or non-existence of facts relevant to the issue to be determined, or to show the likelihood or unlikelihood of some future event the occurrence of which would be relevant. It means that he must not spin a coin or consult an astrologer, but he may take into account any material which, as a matter of reason, has some probative value in the sense mentioned above.”

See also *Mahon v Air New Zealand Ltd* [1984] 1 AC 808 at 820.

- 201 In *Bruce v Cole* (1998) 45 NSWLR 163 at 189, Spigelman CJ held:  
“... In my opinion, at common law, a decision-maker who acts without probative evidence — to which conduct the work ‘perversely’ has appropriately been attached — does not make a valid decision. It is the equivalent of acting without evidence.”
- 202 In *Hill v Green* (1999) 48 NSWLR 161 at 174 [72]–175, Spigelman CJ added:  
“... In my opinion, where a statute or regulation makes provision for an administrative decision in terminology which does not confer an unfettered discretion on the decision-maker, the courts should approach the construction of the statute or regulation with a presumption that the parliament or author of the regulation intended the decision-maker to reach a decision by a process of logical reasoning and a contrary interpretation would require clear and unambiguous words.”
- 203 The *Environmental Planning and Assessment Act* does not confer an unfettered discretion on the consent authority (or this Court on a merits review appeal) to determine a development application. The *Environmental Planning and Assessment Act* requires the consent authority to take into consideration the relevant matters, including those in s 79C(1): *Weal v Bathurst City Council* (2000) 111 LGERA 181 at 185 [9]–[13], 201 [80]–[82]; *Zhang v Canterbury City Council* (2001) 51 NSWLR 589 at 601 [62]–[63], 602 [75]–603 [77]; *Kindimindi Investments Pty Ltd v Lane Cove Council* (2006) 143 LGERA 277 at 297 [74]–298 [79]. Consideration of the relevant matters must be based on probative evidence. The decision reached must also involve a process of logical reasoning.
- 204 In the present case, there is no probative evidence upon which the Court could make findings of adverse effects on the amenity of the locality or on the health and safety of persons in the locality or on the environment. Equally, there is no logical basis upon which a decision could reasonably be made to refuse consent to the proposed base station where there is no such probative evidence of effects. To make such a decision would be to infringe these principles of proper administrative decision-making. The charge of arbitrariness would be made out.
- 205 As Mahoney JA stated in *BP Australia Ltd v Campbelltown City Council* (1994) 83 LGERA 274 at 279:  
“Ordinarily, it would not be right for such a [decision-making] body to conclude that the effect of the relevant considerations is that one thing should be done and yet, without more, to do another. The grant of a discretion is the grant of the authority to do what the authority sees as the discretionary considerations to warrant being done.”
- 206 To make such an arbitrary decision would cause a greater disservice to the community than making a rational one. It would raise unnecessarily the fears of the community. This is the reason for the responsible authority the Australian Radiation Protection and Nuclear Safety Authority stating in the Australian Standard RPS3 that incorporation of additional safety factors beyond the exposure limits of the Standard is not supported: at 1, 29. Similarly, the World Health Organisation has urged (World Health Organisation, “Electromagnetic fields and public health cautionary policies”, *WHO Backgrounder*, March 2000, at 5):  
“... that scientific assessments of risk and science-based exposure limits should not be undermined by the adoption of arbitrary cautionary approaches. That would occur, for example, if limit values were lowered to levels that bear no relationship

to the established hazards or have inappropriate arbitrary adjustments to the limit values to account for the extent of scientific uncertainty.”

207 Community concerns are best corrected by proper application of the authoritative adopted standards, including the Australian Standard RPS3, and the provision of proper information, not by responding to unsubstantiated and unreasonable fears: *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [63]); *Telstra Corporation Ltd v Moreland City Council* (at [24]).

208 Sunstein makes a similar point when discussing how democratic government should respond to public fear. Sunstein argues that well-functioning governments should aspire to be deliberative democracies. Responsiveness to public fear should be complemented by a commitment to deliberation in the form of reflection and reason giving. If the public is fearful about a trivial risk, a deliberative democracy should not respond by reducing that risk. Rather, it should use its institutions to dispel public fear that is, by hypothesis, without foundation. In this way, deliberative democracies avoid the tendency of populist systems to fall prey to public fear when it is baseless. They use institutional safeguards to check public panics: C R Sunstein, *Laws of Fear: Beyond the Precautionary Principle*, at 1.

### **The need for the facility**

209 Mr Papadatos states that the two principal reasons for the proposed facility are to improve coverage along the railway corridor through Cheltenham and particularly into Cheltenham railway station and to improve the overall quality of Telstra’s network performance. Although Cheltenham does receive some mobile telephone coverage, it is generally coverage from distant cells that were not designed to serve the Cheltenham area. Consequently, this results in a weaker than desirable signal strength that can result in dropped calls or an inability to make or receive calls in nearby residential dwellings or when using the train.

210 To support the applicant’s contention that the coverage is inadequate in the area, signal strength tests were undertaken along the railway line and Beecroft Rd. The tests along the railway line generally indicated a signal strength of –120 to –91dBm. This falls within the lower range of signal strength. The tests along Beecroft Road provided a greater variation in signal strength with some readings in the optimal classification of 0 to –82 dBm but the majority in the unacceptable –90 to –93 dBm range.

211 While it was argued that there was no record of complaints about dropped calls, I accept that the evidence on the signal strength tests should be preferred over more anecdotal evidence suggested by the Council and the residents. The signal strength tests clearly indicate an unacceptable level of coverage within the Cheltenham area. The results are also consistent with the evidence of Mr Papadatos that there is sporadic but not consistent or acceptable levels of coverage in the area.

212 There is some doubt as to whether the need for a proposed development is a relevant consideration under s79C(1) of the *Environmental Planning and Assessment Act*. Ordinarily, these are matters to be resolved by market forces: *Fabcot Pty Ltd v Hawkesbury City Council* (1997) 93 LGERA 373 at 379. (This aspect of the decision was not canvassed in the Court of Appeal’s judgment in *Randall Pty Ltd v Willoughby City Council* (2005) 144 LGERA 119.) However, I do not decide this question. A need for the facility is established in this case.

### **Alternative locations**

213 Mr Papadatos states that there are no suitable existing Telstra facilities or other carrier's facilities that would redress the unacceptable coverage at Cheltenham. The coverage hole is too large and too distant for the optimisation or fine-tuning of any existing Telstra base station facilities. Additionally, modelling of the Optus facility, approximately one kilometre to the south-west has shown that co-locating would not adequately address Cheltenham's coverage hole.

214 In his assessment, Mr Papadatos stated that only the subject site and a site containing an existing monopole at Cheltenham railway station were potentially deemed to meet the coverage objectives. The latter site, notwithstanding its greater coverage, was rejected as it would be necessary to replace the existing monopole structure with a bulkier pole, some five metres higher than the existing structure. It was also seen to be unacceptable by Mr Papadatos because of its highly visible nature and closer proximity to residences and schools.

215 Even though Mr Papadatos was cross-examined on his evidence, no evidence was produced to refute or challenge his conclusions. Much of the cross-examination centred on the replacement of the existing monopole at Cheltenham railway station. Notwithstanding that greater coverage would be achieved in this location and Dr Black's evidence that a replacement monopole would likely satisfy the Australian Radiation Protection and Nuclear Safety Authority exposure limit, Mr Papadatos was not satisfied that this location should be preferred to the proposed location.

216 On the issue of alternative locations, I accept the conclusions of Mr Papadatos. Accepting that the replacement of the existing monopole at Cheltenham railway station is the only viable alternative to the proposed location and that no specific details were provided on the replacement of monopole, it is likely that a replacement monopole in this location would be seen as a generally less desirable location because of its increased visibility, proximity to additional people using the railway station and proximity to uses that may be seen to be more sensitive to electromagnetic energy.

### **Matters raised by local residents**

#### *Heritage*

217 The applicant provided an Assessment of Heritage Impact prepared by Ms Louise Powell, a heritage consultant. The assessment addressed the requirements in LEP 1994 in relation to development within a heritage conservation area and development in the vicinity of heritage items. The report concluded that "there are no adverse impacts on the heritage significance of the site and the neighbouring LEP heritage listed items from the proposed development".

218 The heritage impact of the proposal was also considered by the Council in the assessment of the application, including a referral to the Council's Heritage Advisory Committee. The Committee reached a similar conclusion to that reached by Ms Powell.

219 With the benefit of the inspection of the site and surrounding areas, I agree with the conclusions reached by Ms Powell and the Heritage Advisory Committee. Consequently, I find that the proposed development satisfies the

objective in cl 18 and has no effect on the heritage conservation area and any heritage items in the vicinity pursuant to cl 18(5) of the LEP.

*Visual impact*

220 The proposed antennas extend to a height of two metres above the existing roof level of the clubhouse. They are located generally in the centre of the north western and south eastern elevations. The proposal also provides for shrouding which is moulded and painted to represent brickwork chimneys.

221 On the site view, an estimation was made of the location and height of the proposed antennas on the clubhouse and observations made from different locations within the immediate area of the potential visual impact.

222 With the benefit of this exercise, I accept that the proposed antennas will have little, if any, visual impact on the immediate area. While visible, the antennas are relatively small in size and will be generally be seen as part of the clubhouse over time.

*Co-location of facilities*

223 The residents argued that the approval of the base station would lead to other carriers seeking to use the facility. This, they fear, could lead to greater levels of electromagnetic energy being emitted from the site.

224 The cumulative effect of multiple transmitters has been taken into account in the assessments that have already been undertaken by Telstra and Mr Bangay, in accordance with accepted procedure. The issue of cumulative effect over time is taken into account in the Australian Standard RP3: see also *Hyett R v Corangamite Shire Council* (at 5); *Vertical Telecoms Pty Ltd v Hornsby Shire Council* (at [62]–[63]).

225 While the potential does exist for the use of the site by other carriers, there was no evidence produced at the hearing to suggest that this is likely to occur. Mr Cole's evidence was that the Cheltenham Recreation Club has not been approached by any other carrier wishing to co-locate at the site.

226 In the event that another carrier seeks to use the site, a development application would be required to be submitted and would be subject to the same assessment as the current proposal. Any consent granted by the Court authorises the erection and use only of the proposed base station and antennas as currently described and in accordance with the approved plans. The base station and antennas can neither be used for other purposes without a fresh consent nor be modified without modification of the existing consent or the obtaining of a new consent: see similarly *Hyett R v Corangamite Shire Council* (at 5).

227 Finally, the potential for co-location cannot properly be prevented by the imposition of conditions on the present consent: *Hutchison Telecommunications (Australia) Pty Ltd v Baulkham Hills Shire Council* (at [31]–[33]).

228 The potential co-location of facilities is not a matter that would warrant the refusal of this development application.

**Conclusion**

229 The proposed development is meritorious and should be approved. The parties have agreed on conditions appropriate to be imposed should consent be granted.



**Orders**

The Court orders:

1. The appeal be upheld.
2. Development consent is granted to Development Application No 1514/2004 for installation of telecommunication equipment and alterations and additions to an existing building in accordance with Drawings No TT26958 Sheets 1 to 15 prepared by TCI, subject to the conditions in Annexure A\*.
3. The exhibits are returned with the exception of exhibit K.

*Orders accordingly*

Solicitors for the applicant: *Mallesons Stephen Jaques*.

Solicitors for the respondent: *Storey & Gough* (Parramatta).

B A GRAY,  
*Barrister.*

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\* [Attached to the judgment was Annexure A, which set out the conditions to which the granting of the development consent was subject.]