DEVELOPMENT APPLICATIONS

SUBJECT
129-131 Guildford Road, Guildford
(Lots 7 & 8 DP 868) (Woodville Ward)
Location Map - Attachment 2

Demolition of two dwellings including ancillary structures
located on the subject site and the construction of a 48
place child care centre.

REFERENCE
DA/83/2007 - Submitted 8 February 2007
Applicant - Arnold Grapulin Bello Design Group
Owner - Mr C M Robi

REPORT OF
Manager Development Services (DSU 221/2007)

PURPOSE

To determine Development Application 83/2007 which seeks approval for demolition
and construction of a 48 place child care centre.

The application is being referred to Council because it relates to a child care centre.

RECOMMENDATION

(a) That Council grant consent to Development Application No. 83/2007 subject
to standard conditions and the following non standard conditions:

1. The hours of operation are restricted to 7.00am to 6.00pm Monday to
Friday. Any alterations to the above will require further development
approval.
   Reason: To minimise the impact on the amenity of the area.

2. The centre is to provide a service for a maximum of 24 children aged
2-3 years and a maximum of 24 children aged 3-6 years. The
maximum number of children on the premises is not to exceed 48 at
any one time. Any alterations to the above will require further approval
of Council.
   Reason: To ensure the number of children are not exceeded.

3. Prior to the issue of a Construction Certificate, written certification from
a suitably qualified person is to be submitted to the Principal Certifying
Authority, to certify that the proposed development complies with the
requirements of the Children’s Services Regulation, 2004 and any
other requirements of the Department of Community Services.
Reason: To ensure that the proposal satisfies legislative requirements.

4. On-site parking shall be provided and maintained for 12 vehicles. The spaces are to be clearly marked in accordance with the approved plan. 
Reason: To ensure appropriate parking arrangements.

5. The proposed rainwater tank is to be connected to all the toilets within the building. All taps, shower heads, toilets, dishwashers, and washing machines installed within the child care centre are to have a WELS rating of no less than 3 stars. 
Reason: To ensure that the development complies with the requirements of part 4.1.4 'Water Management' of Parramatta DCP 2005.

6. After hours events and activities are restricted to a parent and teacher evening to be held on the first Wednesday of every month between the hours of 6.30pm and 8.00pm and a Christmas party to be held on one Saturday in December between the hours of 10.00am and 2.30pm. 
Reason: To protect the amenity of the area.

7. Prior to demolition commencing, either the Principal Certifying Authority or Council's building surveyor must inspect the site. Should the building to be demolished be known or suspected by reason of the building’s age or otherwise to be found to be wholly or partly clad with bonded or friable asbestos material, approval to commence demolition will not be given until the PCA and/or Council is satisfied that appropriate measures are in place for the handling, storage, transport and disposal of the bonded or friable asbestos material. Prior to commencement of demolition an inspection fee is to be paid in accordance with Council's current fee schedule. 
Reason: To ensure proper handling, storage, transport and disposal of asbestos materials.

8. All bonded and friable asbestos waste material on-site shall be handled and disposed off-site at a Department of Environment and Conservation licensed waste facility by a DEC licensed contractor in accordance with the requirements of the Protection of the Environment Operations (Waste) Regulation 1996 and the EPA publication Assessment, Classification and Management of Liquid and Non-Liquid Wastes 1999 and any other regulatory instrument as amended. 
Reason: To ensure appropriate disposal of asbestos materials

9. Demolition works involving the removal, repair, disturbance and disposal of a total surface area (not floor area) of 200 square metres or more of bonded asbestos material must only be undertaken by contractors who hold the appropriate NSW WorkCover Authority licence(s) and approvals. 
Reason: To comply with the requirements of the NSW WorkCover Authority.
10. Prior to the issue of an occupation certificate the two allotments are to be consolidated into a single allotment.
   **Reason:** To promote the orderly future development of the area.

11. Sight distance to pedestrians exiting the property shall be provided by clear lines of sight in a splay extending 2m from the driveway edge along the front boundary and 2.5m from the boundary along the driveway in accordance with Figure 3.3 of AS2890.1. Any landscaping, fences or walls in this area are to be no greater than 0.6m higher than the boundary level at the driveway.
   **Reason:** Traffic safety.

12. Traffic into and out of the development site to be restricted to left-in & left-out only. A concrete median island is to be constructed along the frontage of the property and to be extended to the existing concrete median island near the intersection of Woodville Road and Guildford Road associated with the traffic signals. A design plan (including elevation and section plans) of the median island is to be submitted to the Parramatta Traffic Committee and Council for consideration and final approval prior to construction. The construction of the concrete median island is to be completed prior to the issue of an occupation certificate.
   **Reason:** Traffic safety.

13. All works associated with the design and construction of the concrete median island are to be met by the applicant, at no cost to Council.
   **Reason:** The requirement for the median island directly relates to the proposed child care centre.

**SITE & LOCALITY**

1. The site is a regularly shaped double block containing two dwellings on separate allotments. The site has a frontage of 33m to Guildford Road, depth of 45m and overall site area of 1635m². The site is located within 100m of the north-east corner of Guildford Road and Woodville Road. The site is relatively flat with a fall of 1.4m from front to rear. The streetscape is characterised by a variety of older single storey dwellings interspersed with dual occupancy and multi-unit housing developments of recent construction. Adjoining the site to the east is a 2 storey multi-unit housing development and adjoining the site to the west is a heritage listed electrical substation.

**PROPOSAL**

2. The proposal is to demolish the existing dwellings and build a single storey 48 place child care centre. The centre would provide a service for 24 children aged 2-3 years and 24 children aged 3-6 years. The proposed hours of operation are 7.00am to 6.00pm Monday to Friday. After hours events and activities include a parent and teacher evening to be held on the first
Wednesday of every month between the hours of 6.30pm and 8.00pm and a Christmas party to be held on a Saturday in December between the hours of 10.00am and 2.30pm. Twelve car parking spaces including 1 disabled parking space are proposed. A 3m high canopy is provided within the play area at the rear of the site. Proposed boundary fencing is of sheet metal construction and a 1.2m high metal palisade front fence is also proposed. The car park is located to the eastern side of the site with the western side being occupied by the child care centre building. The front setback of the building is 7m which matches the setback of the substation on the adjoining site. The majority of the area between the front of the building and the front boundary has been dedicated to landscaping.

STATUTORY CONTROLS

Parramatta Local Environmental Plan 2001

3. The site is zoned Residential 2(b) under Parramatta Local Environmental Plan 2001 and child care centres are permissible within the Residential 2(b) zone with the consent of Council. The proposed development is consistent with the objectives of PLEP 2001.

Parramatta Development Control Plan 2005

4. The proposed development is consistent with the objectives of the DCP and the numerical requirement that applies to child care centres.

Child Care Centre Development Control Plan

5. The application was submitted to Council on 8 February 2007. The Child Care Centre Development Control Plan (CCC DCP) does not apply to the proposal because Council resolved that only applications lodged after 4 April 2007 be subject to the requirements of the plan. It is noted that the acoustic report submitted with the application was prepared in accordance with the requirements of the CCC DCP.

CONSULTATION

6. In accordance with the requirements of Council’s Notification DCP the application was advertised to adjoining property owners and occupiers between 28 February 2007 and 21 March 2007. One submission was received. The following issue was raised in the submission;

Traffic Generation

7. Concern has been raised that the child care centre is in a dangerous position and will increase traffic congestion.

8. A traffic report prepared by NK Traffic – Consulting Engineers was submitted with the development application. The report states that the operation of the child care centre would not have any noticeable impact on the operation of
the intersection of Guildford Road and Woodville Road and suggests that a median strip should be installed opposite the driveway to prevent vehicles from making right hand turns into the centre from Guildford Road. Council’s traffic engineer has reviewed the proposal and recommended that a median strip be installed of sufficient length such that it joins the existing median strip provided near the intersection of Guildford Road and Woodville Road.

9. A condition is recommended requiring the installation of a median strip in accordance with the requirements of Council’s Traffic Engineer.

ON-SITE MEETING

10. An on-site meeting was held on Saturday 19 May 2007 at 10.00am.

11. Present at the site meeting were Clr Barber, Clr Chedid, Clr Issa, Clr Jamal, Clr Walsh, Clr Worthington, Scott Cox (Service Manager, Development Assessment), the applicant and two residents. The following issues were discussed at the meeting:

Traffic

12. Concern was raised about traffic entering and leaving the site. It was advised by Council staff that a traffic report had been submitted and that a recommendation was proposed for a median island to be constructed so as to allow only left in and left out. The cost of the median would be at the expense of the applicant.

13. Clr Walsh requested that a splayed driveway be investigated.

14. Council’s Traffic Engineer has not recommended the installation of a splayed driveway, a splayed driveway is generally required when posted speed limits are greater than 50kph.

Electricity Substation

15. Concern was raised about the location of an electrical substation next door to a child care centre. Councillors requested staff to investigate whether the substation has been decommissioned.

16. On 6 August 2007 staff spoke to Integral Energy who advised that the substation was still operational but there were future plans to replace the substation with a modern padmount substation. Integral Energy was advised that the existing substation is heritage listed.

Asbestos removal

17. Both dwellings to be demolished have fibro external cladding that is likely to contain asbestos. Councillor Walsh requested that conditions be imposed on the consent that will protect the occupants of the adjacent properties when removal of the fibro occurs. One suggestion was to have the PCA on-site
prior to removal commencing to ensure appropriate techniques are used. It was also suggested that a soil analysis should be carried out after demolition to ensure that no asbestos is left on-site.

18. Council has standard conditions of consent for the safe demolition of buildings that contain asbestos cladding. These conditions have been included in the recommendation.

Notification of site meeting

19. Concern was raised that notification of the site meeting had not been carried out, staff were requested to investigate.

20. Council records indicate that the person who made the submission and the applicant were notified of the on-site meeting. Since the on-site meeting of May 2007 the notification procedures of on-site meetings has changed. It is the current practice of staff to send letters regarding on-site meetings to all people originally notified of a development proposal.

Acoustics

21. A question was raised about the method of acoustic treatment that is proposed to the rear of the site where the play areas are located.

22. The Acoustic Report submitted with the application states that 1.8m imperforate fencing of sheet metal or lapped and capped timber construction will be adequate for noise attenuation purposes. The applicant is proposing to retain the existing 1.8m high sheet metal fencing.

Air Quality

23. Councillor Jamal asked whether any air filtration systems were proposed.

24. No air filtration systems are proposed.

Easement

25. The applicant was advised to provide evidence that negotiations with adjoining properties to create an easement have been carried out and that concept drainage designs need to be submitted.

26. Evidence of negotiations with the Department of Housing for the creation of an easement through the adjoining property to the rear have been submitted. The Department of Housing have indicated a willingness to grant a drainage easement.

Too many child care centres

27. Concern was raised from residents that there were too many child care centres in the area.
28. The recently adopted Child Care Centre Development Control Plan contains controls designed to prevent the proliferation of child care centres. This development control plan does not apply to the proposed development, however, with the exception of the non-compliance with best practice indoor and outdoor space requirements the development does comply with the requirements of this planning policy.

Traffic Engineering Advisory Group (TEAG)

29. The application was considered by TEAG at its meeting of 10 September 2007. The RTA representative advised that an investigation is currently being carried out for right turn arrow phasing for eastbound traffic in Guildford Road. TEAG deferred consideration of this matter so that an on-site meeting could be held involving Council staff, the RTA and local police. At the Council meeting of 24 September 2007 it was resolved to defer the consideration of the TEAG report relating to the subject application for the Council meeting of 29 October 2007.

30. An on-site meeting involving Council staff, the RTA and local police was held on 17 October 2007. Council’s Traffic Engineer has advised that the matters discussed at the meeting do not have any direct implications for the proposed child care centre.

31. The TEAG report relating to the subject development application was not endorsed at the 29 October 2007 meeting of Council.

ISSUES

Heritage

32. The development application was referred to Council’s Heritage Advisor for assessment as the adjoining site to the west is listed as a heritage item in Parramatta Local Environmental Plan 1996 (Heritage & Conservation). The comments of Council’s Heritage Advisor include:

"In my opinion, this proposal would generally have an acceptable impact on the presentation of the heritage substation to the general public, and a relatively small impact on its value in heritage terms. However, the solar cell should be mounted to the rear (north) side of the house."

33. The plans have been amended and the solar hot water system has been relocated to the rear (north) elevation of the building. Accordingly there are no objections to the proposal on heritage grounds.

Jonathan Goodwill
Senior Development Assessment Officer
ATTACHMENTS

Refer Attachment/s 7 scanned page/s

1. Plans & Elevations - 4 pages
2. Locality Map - 1 page
3. Map of other child care centres in the area - 1 page
4. Development application history - 1 page

REFERENCE MATERIAL
LOCATIONAL MAP

Note: Object not located within map area.

LOCALITY PLAN

- SUBJECT SITE
- OBJECTOR
MAP SHOWING OTHER CHILD CARE CENTRES IN THE AREA

NOTE: Map shows both approved and existing centres

SITE X
Development Application History for DA83-2007

8 February 2007 – development application lodged

28 February to 21 March 2007 – application advertised

19 May 2007 – on-site meeting held

16 July 2007 – comments received from Council's Traffic Engineer

24 July 2007 – request for amended plans and additional information sent to applicant

23 August 2007 – additional information received

10 September 2007 – application considered by TEAG and deferred for an on site meeting between Council staff, the RTA and local police

17 October 2007 – on site meeting held, detailed response from the RTA regarding the outcome of this meeting was not available at the time this report was prepared

29 October 2007 – the TEAG report relating to the application was considered at the meeting of Council but was not endorsed
REPORT CHECKLIST

Please ensure that the following details are included in your report and tick, once complete:

Reference No. F2005/.... ✓

Recommendation That..... ✓

If Confidential, is the 10(2){a-h} Clause from the Local Government Act, included in the Purpose of the report □ N/A

Header & Footer CL......HEADING ✓

Attachments, if any ✓
Ensure that attachments are provided in hardcopy, stamped appropriately, scanned into the report and that the number of attachments is correctly listed on the report

List Reference Documents, if any

ie. Previous Item 00, Council Meeting, <Heading> <date>, Codes, Policies or Plans

________________________________________________________________________________

________________________________________________________________________________

Approval (signatures required once the report has been proofread & approved)

Author: [Signature] [Signature]

Manager: [Signature]

Group Manager: (if applicable)

General Manager: (if applicable)

2 hard copies of the report are required to the Council Support Unit by noon on the Thursday 2 weeks prior to the Council Meeting
ELECTROMAGNETIC FIELD ASSESSMENT:
PROPOSED CHILDCARE CENTRE

129 – 131 GUILDFORD ROAD
GUILDFORD NSW 2161

Prepared For:
Mr Callan Robi

Report by:
Child & Associates

November 2007
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Appendix A CV – Noel Child A-1
EXECUTIVE SUMMARY

INTRODUCTION

A Development Application has been lodged with Parramatta City Council for a child care centre at Lot 8 and Lot 9 (129 and 131) Guildford Road, Guildford, NSW. Parramatta City Council has deferred its decision on the Application, pending the provision of further information by the Applicant regarding the possible impacts of a nearby electrical sub station (and any other localised sources) on background electromagnetic field levels at the site. Child & Associates has been engaged by the Applicant to undertake an assessment of electromagnetic field levels at the site, in order to provide the information required by Parramatta City Council.

POTENTIAL IMPACTS OF ELECTROMAGNETIC FIELDS ON YOUNG CHILDREN

Items of mobile telephone transmission infrastructure, and electrical generation and transmission items including electrical sub-stations and major electrical cabling can cause increases in background electromagnetic field levels, and there are concerns that elevations in background electromagnetic field levels can result in an increased level of risk to the health and well being of young children. For reasons explained in detail in this report, and in the absence of any formal regulations in Australia, a maximum daily average electromagnetic field exposure of no more than 4 milligauss (mG) has been adopted as a guideline level for this assessment.

FINDINGS, CONCLUSIONS & RECOMMENDATIONS

Based on the results of this assessment, it has been concluded that:

☐ The proposed child care centre development site is not subject to any measurable electromagnetic radiation impact from the adjacent electrical substation building, and in fact it is considered probably that no electrical operations are currently taking place within that sub station building;

☐ There is a slight electromagnetic field impact at the site caused by the overhead powerlines in front of the property, resulting in localised field levels above 4 milligauss for approximately two metres inside the front of Guildford Road property boundary.

☐ This elevation in field level is not considered significant because it applies to a very limited area of the total proposed child care centre site; it would not cause an increase in average daily field level exposure for children at the centre above the 4 milligauss benchmark level adopted as a basis for this assessment, and the areas of the proposed child care centre where children would be anticipated to spend the majority of their time, which include the proposed child care centre building and the proposed external play area at the rear of the property, are not subject to elevated electromagnetic field levels.

☐ For these reasons, electromagnetic field levels at the site are not considered to present any cause for concern or action, and are not considered to be likely to have any negative impact on the health and well being of children, or others, attending the proposed child care centre.

Noel Child BSc (Hons), M Env Eng
Visiting Fellow, Engineering
University of Technology, Sydney
Principal, Child & Associates

20 November 2007
1 INTRODUCTION

The Arnold Grapulin Bello Design Group has lodged a Development Application with Parramatta City Council for a childcare centre to be located at Lot 8 and Lot 9 (129 and 131) Guildford Road, Guildford, NSW.

Parramatta City Council has deferred its decision on the Application, pending the provision of further information by the Applicant regarding the possible impact of a nearby electrical sub station on background electromagnetic field levels at the site.

Electromagnetic radiation, and associated increases in background electromagnetic field levels, has been identified in some research as being potentially harmful to the health and well being of young children.

Child & Associates has been engaged by the Applicant to undertake an assessment of electromagnetic field levels at the site, in order to provide the information required by Parramatta City Council.

This document presents the results of that assessment.

2 THE SITE

2.1 LOCATION

The site for the proposed childcare centre is Lot 8 and Lot 9 (129 and 131) Guildford Road, Guildford, NSW.

The site location is shown in Figure 1.

![Figure 1 - Site Location](image)

The proposed development is bounded by Guildford Road to the south; by an existing Integral Energy electrical sub station building to the west; and by existing residential and light commercial properties to the east and north.
2.2 THE PROPOSED DEVELOPMENT

A plan of the proposed development is shown in Figure 2, and a sketch is shown in Figure 3. Photographs of Lots 7 and 8 (129 & 131) Guildford Road, showing existing residences, have been provided at Figures 4 and 5.

Figure 2 – Plan of Proposed Development
Electromagnetic Field Assessment
Proposed Childcare Centre – 129-131 Guildford Road, Guildford NSW 2161

Figure 3 – Sketch of Proposed Development
3 SIGNIFICANCE OF ELECTROMAGNETIC FIELDS

3.1 INTRODUCTION

The urban environment is subject to the impact of a wide range of radiation that forms part of the general electromagnetic field. This electromagnetic field ranges from high-energy ionizing radiation such as cosmic rays and x-rays, through the visible light spectrum, to longer wavelength microwaves and radio waves.

In general, the atmosphere shields the urban environment from most of the more dangerous, high-energy radiation emanating primarily from the sun. Induced phenomena such as damage to the ozone layer, which limits the capacity of the atmosphere to filter out high-energy UV-C radiation, impede this process.

3.2 TYPICAL ELECTROMAGNETIC FIELD LEVELS

Background electromagnetic field levels are measured in units called milligauss (mG), or microtesla (µT). 1 µT = 10 mG

All electrical devices, from toasters to high voltage power lines, produce electric and magnetic fields. As a consequence, most people are exposed to background electromagnetic fields as part of normal and accepted day to day activities. Figure 6 provides examples of magnetic field levels from typical sources.

![Magnetic Field Levels at different Locations](image)

**Figure 6 – Magnetic Field levels at Different Locations**
(Source: ARPANSA; “Electricity & Health”, 27 June 2003)

3.3 CONCERNS REGARDING BACKGROUND ELECTROMAGNETIC FIELDS

General

In recent years, significant concern has arisen regarding the potential health impacts of electromagnetic radiation from sources such as high-voltage power supply lines, electrical generation equipment and mobile telephone transmission towers.

Possible Risk Levels

Despite a lack of firm evidence, significant concern has been expressed in recent years that exposure to extremely low frequency (ELF) electromagnetic fields may represent a danger to human health.
A report prepared by the National Radiation Protection Board UK (NRPB) Advisory Group on Non-Ionising Radiation (AGNIR) in 2001 (the so-called Doll Report) concluded in part that:

"... the possibility remains that intense and prolonged exposures to magnetic fields can increase the risk of leukemia in children"

In terms of quantification of possible risk, the Doll Report commented that:

"... recent large and well conducted studies have provided better evidence than was available in the past on the relationship between power frequency magnetic field exposure and the risk of cancer. Taken in conjunction, they suggest that relatively heavy average exposures of 0.4 μT (4 milligauss) or more are associated with a doubling of the risk of leukemia in children under fifteen years of age. The evidence is however not conclusive. In those studies in which measurements were made, the extent to which the more heavily exposed children were represented is in doubt, while in those in Nordic countries in which representativeness is assured, the fields were estimated and the results based on such small numbers that the findings could have been due to chance."

**Lack of Regulatory Guidelines**

There are currently no standards or limitations for exposure to ELF EM fields that apply to the general public or workers in Australia. The National Health and Medical Research Council (NHMRC) published "Interim guidelines on limits of exposure to 50/60Hz electric and magnetic fields" in 1999. These interim guidelines were those proposed under the auspices of the body that has now become the International Commission on Non Ionising Radiation (ICNIRP). The exposure levels permitted by those guidelines were set on the basis of preventing harmful levels of induced current in the tissues of the central nervous system. The magnetic field exposure at 50 Hz permitted by those guidelines, on the particular basis upon which they were developed, is 100 microtesla, or 1000 milligauss. This relatively high level, in effect, was designed to protect against the "cooking" of the tissues of the central nervous system by electromagnetic radiation. The much lower levels of concern expressed in the Doll Report - as low as 4 milligauss - relate to the very different issue of induced cellular aberrations, resulting in cancer or leukemia risk. While no specific limit or standard has been established, the Australian Government Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has suggested, probably on the grounds of caution, that a "rule of thumb" limit of 4 milligauss might be considered prudent in sensitive situations, such as child care centres.

**Young Children**

Background electromagnetic field levels in excess of 4 milligauss have been associated in some international studies and research reports with an increased risk of the incidence of some forms of leukemia in children.

As a consequence, some international studies, including the 1998 report by a working group of the US National Institute of Environmental Health Sciences (NIEHS) and the US National Institute of Health, and a similar report prepared in 2001 by the National Radiation Protection Board UK (NRPB) Advisory Group on Non-Ionising Radiation (AGNIR), the so-called Doll Report, have recommended that field levels in excess of 4 milligauss should be avoided in facilities such as child care centres.

These studies refer to situations in which children are exposed to continuous or prolonged exposure to slight elevations in background electromagnetic field, and not to situations involving "spot" exposure to such fields for short periods.

While these reports are considered somewhat contentious by a number of health researchers and authorities, they provide a basis for caution until either confirmed or dismissed by further research and study.

In our view, this means that at least in a precautionary sense, a risk has been credibly identified, and is yet to be refuted, that prolonged or consistent exposure to electromagnetic field levels as low as 4 milligauss may have a detrimental effect on the health of children, in that such exposure may lead to an increase in the rate of incidence of childhood leukemia's.
It is important to repeat that these precautionary findings apply only to situations were children are exposed to such fields in a prolonged or continuous sense.

While no specific limit or standard has been established in this country, the Australian Government Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) has agreed, in part on the grounds of caution, that a "rule of thumb" limit of 4 milligauss might be considered prudent in sensitive situations.

**EMF Regulations in NSW**

Current Occupational Health and Safety regulations in New South Wales require that adults in the workplace are not exposed to electromagnetic field levels above 1000 mG. A lower level of 100 mG has been discussed.

No separate or lower limit has been established in New South Wales, or elsewhere in Australia, in respect of the exposure of children to elevated levels of background electromagnetic field.

**Precautionary Approach**

In the absence of more clearly defined evidence, and until such evidence emerges, many international authorities have suggested that a cautious approach be adopted in terms of prolonged exposure to background electromagnetic radiation.

What appears to be a prudent and sensible approach, and what has been adopted as a guideline assessment level for this report, is that the systematic exposure of children to average daily weighted background electromagnetic radiation levels above 4 milligauss should be avoided.

The most precautionary research undertaken to date has identified 4 mG as a safe average daily EMF exposure limit for young children (see "References & Acknowledgments"). This precautionary figure has been adopted as a guideline level for this assessment.

**4 POTENTIAL ELECTROMAGNETIC FIELD SOURCES**

There are two obvious sources of electromagnetic radiation near the site of the proposed development.

One source is an electrical sub station situated on land immediately adjacent to 131 Guildford Road.

The other source is the system of overhead powerlines running along the street line in front of the proposed development site.

While no other obvious sources of electromagnetic radiation were noted during an inspection of the site on Monday 19 November 2007, the impact of any other sources that might exist has been taken into account in the assessment described later in this report.

The electrical sub station is shown in Figure 7, and the overhead powerlines in Figure 8.
Electromagnetic Field Assessment
Proposed Childcare Centre – 129-131 Guildford Road, Guildford NSW 2161

Figure 7 – Electrical Sub Station Building Adjacent to 131 Guildford Road, Guildford

Figure 8 – Overhead Powerlines
5 THIS ASSESSMENT

5.1 PURPOSE

Parramatta City Council has sought a specific assessment of electromagnetic field levels at and in the immediate vicinity of the proposed child care centre, in particular in the area subject to possible impacts from electrical activity within the nearby electrical sub station building.

The purpose of this report is to provide the results and conclusions of such an assessment, based on the direct measurement of electromagnetic field levels throughout the area of the proposed development site.

5.2 APPROACH & METHODOLOGY

As the basis for this assessment, electromagnetic field levels were measured at representative points throughout the site, at an elevation of one metre above ground level. From these measurements, a grid or “map” of electromagnetic field levels was prepared.

Field levels were measured during an inspection of the site, undertaken on Monday 19 November 2007.

The electromagnetic field measurements were taken using a Bell Model 4080 Triaxial ELF Magnetic Field Meter. The Bell instrument uses three internal sensors and a microprocessor to measure and integrate the three directional components of the electromagnetic field.

This instrument is a hand held device that allows for accurate and convenient measurement of Extremely Low Frequency (ELF) magnetic fields from a variety of sources. It is an instrument particularly suited to the measurement of the relatively low field levels associated with mobile telephone transmission equipment.

The results of the assessment have been presented and discussed in Section 6 of this report, and relevant findings, conclusions and recommendations presented in Section 7.

6 RESULTS

6.1 ELECTROMAGNETIC FIELD LEVELS

Electromagnetic field levels recorded throughout the proposed site area are summarised in Figure 9.

6.2 SIGNIFICANCE OF THE RESULTS

The key aspects of these results are as follows:

Number of Readings

- 54 individual electromagnetic field levels were recorded at representative points throughout the site.

Background Electromagnetic Field Levels

- Natural background electromagnetic field levels throughout suburban Sydney, based on our previous experience and on a consideration of relevant literature are in the range 0.2 – 0.8 milligauss.

Colour Coding

- Field levels below the benchmark level of 4 milligauss discussed in Section 4 of this report are shown in green in Figure 9. Field levels above 4 milligauss have been shown in yellow.
Figure 9 – Summary of Electromagnetic Field Levels at and Near the Site
Field Levels Near the Overhead Electrical Wiring

- The 8 field levels measured directly underneath the overhead powerlines running along the footpath on the Guildford Road frontage of the site varied between 11.2 and 13.2 milligauss. (Refer bottom centre, yellow; Figure 9)
- The 8 field levels measured along the Guildford Road property boundary, parallel to the overhead powerlines, varied between 9.7 and 11.1 milligauss. (Refer bottom centre, yellow; Figure 9)
- The 8 field levels measured approximately 1.5 metres inside the Guildford Road property boundary, parallel to the overhead powerlines, varied between 5.4 and 6.7 milligauss. (Refer bottom centre, yellow; Figure 9)

Significance: These results indicate that the overhead powerlines located in front of the proposed development site is causing a slight elevation in electromagnetic field, and the area where this elevation in electromagnetic field exceeds 4 milligauss extend approximately two metres inside the front (Guildford Road) property boundary.

Field Levels Near the Electrical Sub Station

- The 2 field levels measured directly underneath the overhead powerlines running along the footpath on the Guildford Road frontage, in front of the electrical sub station building varied between 11.2 and 11.9 milligauss. (Refer bottom left, yellow; Figure 9)
- The 2 field levels measured along the electrical sub station property boundary, parallel to the overhead powerlines, varied between 9.7 and 10.0 milligauss. (Refer bottom left, yellow; Figure 9)
- The 2 field levels measured approximately 1.5 metres inside the electrical sub station property boundary, parallel to the overhead powerlines, varied between 5.9 and 6.7 milligauss. (Refer bottom left, yellow; Figure 9)
- The 3 field levels measured approximately along the front external wall of the electrical sub station varied between 2.8 and 3.0 milligauss. (Refer bottom left, green; Figure 9)

Significance: These results indicate that, as would be expected, the overhead powerlines are causing a similar increase in electromagnetic field at front of the sub station to that caused at the front of the proposed development site. This effect would apply all along Guildford Road, and at all areas in Sydney where overhead powerlines are installed. These results also indicate that activity within the sub station building itself is having little or no affect on electromagnetic field levels near the sub station, including the area of the proposed development site near the sub station. It is considered probable that the sub station is not operating at the present time.

Field Levels throughout the General Area of the Proposed Development

- The 26 field levels measured throughout the remaining and primary area of the proposed development site (that is, the measurements additional to the field levels measured along the front or Guildford Road property boundary) were all below 4 milligauss, and most (21 measurements) were below 1 milligauss. (Refer centre, green; Figure 9)

Significance: These results indicate that electromagnetic field levels throughout most of the area of the proposed development are below the 4 milligauss benchmark level discussed in Section 4. The majority of the field levels measured throughout the proposed development area are within natural background levels, and do not appear to be subject to any increase caused by external electromagnetic radiation sources.

Field Levels in the Proposed External Play Area of the Child Care Centre

- The 10 field levels measured throughout the proposed external play area at the rear of the development site were all below 0.5 milligauss. (Refer top, green; Figure 9)

Significance: These results indicate that electromagnetic field levels throughout the external play area of the proposed child care centre are within the expected range of normal background levels, and do not appear to be subject to any impact or increase caused by external sources of electromagnetic radiation.
7 FINDINGS, CONCLUSIONS & RECOMMENDATIONS

7.1 SUB STATION

- The proposed child care centre development site is not subject to any measurable electromagnetic radiation impact from the adjacent electrical substation building, and in fact it is considered probably that no electrical operations are currently taking place within that sub station building.

- It is understood, based on discussions with the Applicant and with the electricity supplier Integral Energy, that the electrical sub station adjacent to the development site has been, or will be, decommissioned, and replaced, by a much smaller sub station module. The dimensions of the replacement infrastructure would be approximately 3.0 metres long x 1.5 metres deep x 1.8 metres high, as indicated by the photograph in Figure 10, below:

![Figure 10 – Typical "Replacement" Electrical Sub Station Module](image)

- It is understood that Integral Energy wishes to demolish the existing brick sub station building, and install the much smaller replacement module somewhere near the existing sub station site on Guildford Road. Demolition of the existing brick sub station building is understood to be subject to heritage considerations.

- Based on our past experience, electromagnetic fields up to 4 milligauss can be experienced within 3 metres of the type of sub station module understood to be likely to be used to replace the existing sub station adjacent to the proposed development site.

- For this reason, it is recommended that if a sub station module of this type is installed in the future, that it is at least 3 metres from the boundary of the proposed child care centre.

7.2 OVERHEAD POWERLINES

- There is a slight increase in electromagnetic field immediately inside the Guildford Road frontage of the proposed development site. This slight elevation in field level is caused by the overhead powerlines in front of the property, and results in elevations in field levels to above 4 milligauss for approximately two metres inside the front or Guildford Road property boundary.
This elevation in field level is not considered significant because:

1. It applies to a very limited area of the total proposed child care centre site;

2. That for this reason, this slight elevation in field level at the front of the site would not cause an increase in the daily time weighted average exposure for children at the centre to a level above the 4 milligauss benchmark adopted as a basis for this assessment;

3. That the average electromagnetic field level throughout the site is considered likely to be no more than 1 milligauss; and

4. That the areas of the site where children would be anticipated to spend the majority of their time at the centre, which include the proposed child care centre building and the proposed external play area at the rear of the property, are not subject to elevated electromagnetic field levels.

For these reasons, electromagnetic field levels at the site are not considered to present any cause for concern or action, and are not considered to likely to have any negative impact on the health and well being of children, or others, attending the proposed child care centre.

8 REFERENCES & ACKNOWLEDGEMENTS

1. Australian Government, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 
   Powerline (Extremely Low Frequency – ELF) Electromagnetic Fields and Cancer – The Doll Report, 

2. Australian Government, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 

3. Australian Government, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 

4. Australian Government, Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 

The assistance and cooperation of the property owner; the current tenants of 129 and 131 Guildford 
Road, Guildford, and the staff of Integral Energy is gratefully acknowledged.

9 TERMS & ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARPANSA</td>
<td>Australian Radiation Protection and Nuclear Safety Agency</td>
</tr>
<tr>
<td>AS</td>
<td>Australian Standard</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority of New South Wales</td>
</tr>
<tr>
<td>Hz</td>
<td>hertz, unit of electrical frequency</td>
</tr>
<tr>
<td>mG</td>
<td>milligauss, unit of magnetic field measurement</td>
</tr>
<tr>
<td>NATA</td>
<td>National Association of Testing Authorities</td>
</tr>
<tr>
<td>μT</td>
<td>microtesla, unit of magnetic field measurement</td>
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</tbody>
</table>

10 LIMITATIONS

Child & Associates has based this electromagnetic field assessment, and this report, on the data, 
methods and sources described herein.

It is the view of Child & Associates that this report presents an accurate and reliable assessment of the 
magnitude and potential impacts of electromagnetic field levels at the subject site.
APPENDIX A

CV – Noel Child
1 PERSONAL DETAILS

Profession: Consultant in Transport, Energy and the Environment
Date of Birth: 6th December 1946
Nationality: Australian
Experience: > 30 Years
Address: 22 Britannia Road, Castle Hill, NSW, 2154
Contact: Phone: 61 2 9899 1966  Fax: 61 2 9899 1797  Mobile: 0409 393024

2 CAPABILITY AND EXPERIENCE - SHORT SUMMARY

Noel Child is a successful and experienced management and technical professional with over 30 years experience in a variety of senior public and private sector appointments and assignments, and with particular expertise in transport, energy, environmental and sustainability issues, including environmental assessment and management.

Noel's background experience includes senior management at both the State and National levels in the Australian petroleum industry, and a number of senior consultancies for both government and corporate clients. His record reflects the ability to develop and achieve positive technical, commercial and strategic outcomes through effective planning and communication; critical and objective analysis; and quality task completion and delivery at both the personal and team level.

His management responsibilities have included transport, environmental, manufacturing, and general operational activities at a national level, while his formal professional training includes environmental, scientific, engineering and business disciplines. He has undertaken a number of senior corporate appointments with distinction, and has successfully owned and operated a major transport, petroleum distribution and marketing company. More recently, working through his own business Child & Associates, he has applied his ability and experience in the fields of technology, management and strategy, on a consultancy basis, to a number of private and public sector clients, both nationally and internationally.

Noel has post-graduate training in several technical and commercial disciplines, and provides specialised teaching input, by invitation, to post graduate engineering and management courses conducted by the Faculties of Science and Engineering at Sydney's University of Technology. He has strong affiliations with a number of international corporations and agencies, and has been provided technical input and evidence on several environmental disciplines in matters before the Land and Environment Court of NSW.

Noel has had extensive experience in the overall environmental assessment of child care centre development proposals, including the assessment and review of air quality, hazardous goods, electromagnetic field, soil and groundwater contamination, and general acoustic matters.

3 EDUCATION, QUALIFICATIONS AND AFFILIATIONS

B.Eng. (Chemical Engineering), UNSW, Sydney
Master of Business Studies, University of New South Wales, Sydney
B.Sc. (Hons) Applied Chemistry, University of Technology, Sydney
M.Eng. (Environmental Engineering and Management), UNSW, Sydney
Qualified Environmental Auditor, Standards Australia
Member, Royal Australian Chemical Institute, 1972/2007
Member, Institution of Engineers, Australia, 1972/2007
Member, Clean Air Society of Australia and New Zealand, 1992/2007
Member, Australasian Natural Gas Vehicle Council, 1996/2003
Executive Director, Australasian Natural Gas Vehicles Council, 2002
Visiting Fellow, Institute for Sustainable Futures, UTS, 1995/2001
Research Fellow, Faculty of Civil & Environmental Engineering, UTS, 1996/2007
4 EXAMPLES OF ASSIGNMENTS & EXPERIENCE

Michael Bell Architects & Clients (2004 to Current) — Provision of professional services in relation to the assessment and review of environmental issues associated with various child care centre applications in suburban Sydney, and the Sydney CBD, including the development of plans for the management and control of relevant environmental impacts.

Love Childcare Pty Ltd – (2005 to Current) - Provision of professional services re the environmental assessment of prospective child care centre developments at a number of locations in the Sydney metropolitan area, including Parramatta and Five Dock.

ABC Acquisitions Pty Ltd – (2006 to Current) - Provision of professional services associated with the assessment and mitigation of electromagnetic field issues at a proposed child care centre in Market Street, Sydney.

Acre Woods Childcare Pty Ltd (2005 to Current) — Provision of professional services re the environmental assessment of prospective child care centre developments at a number of locations in the Sydney metropolitan area, including North Ryde, Gladesville and Roseville.

Childcare Solutions Australia Pty Ltd – (2005 to Current) - Provision of professional services re the environmental assessment of prospective child care centre developments at a number of locations in Sydney and Melbourne, including the George Street Sydney, and Little Collins Street, Melbourne.

NSW Land & Environment Court (2005) — Provision of advice on acoustic issues in relation to a matter involving Campbeltown City Council and Boros. Legal representatives for the parties were Mr Michael Mantle (Lawyer, Kells the Lawyers, Wollongong) and Mr David Bali (Lawyer, Marsdens Law Group). Advice provided in accordance with appointment by the Land & Environment Court.

NSW Land & Environment Court (1999 to Current) — Provision of a technical report on air quality and other environmental issues associated with a matter involving Acre Woods Child Care Pty Ltd and Ku-Ring-Gai Municipal Council, and relating to a proposed child care centre at Roseville, NSW.

NSW Land & Environment Court (1999 to Current) — Provision of a statement of evidence, and evidence in Court, on water quality issues in relation to a matter involving Wollondilly Sire Council and Brogan Box Pty Ltd.

Western Sydney Alliance of Mayors (1998 to Current) — Technical and strategic consultant to the Alliance in relation to the development of transport programs and policies for Western Sydney, including provision of advice on all relevant technical, economic and environmental issues.

Commonwealth Department of Transport (2005 to Current) — Review of transport infrastructure options in northwestern, western and southwestern Sydney, including a potential new high speed rail network, in the context of potential constraints in conventional transport fuel prices and supply.

NSW Roads & Traffic Authority (2004 - Current) — Review of international technologies, systems & applications in relation to the treatment of motor vehicle exhaust emissions within and discharged from road tunnels, in accordance with the conditions of approval for the M5 East Motorway

Thyssen Transrapid Australia (1998 to Current) — Adviser on technical and operational issues associated with the development and construction of a high-speed magnetic levitation train systems within the Peoples Republic of China, and elsewhere.

Arup Transport Planning (1999 to Current) — Provision of expert input to consultancy projects dealing with fuel, engine and emission performance in transport and transport engineering applications.

R A Campbell Transport (1994 to Current) — Provision of technical advice on the environmental management of a previously contaminated industrial site, and the environmental management and control of contaminated regional drainage flows to the Parramatta River.

Isuzu-GM (2003 to Current) — Representations to Environment Australia and the Department of Transport and regional Services regarding the emission performance standards of Japanese sourced medium and heavy natural gas trucks, with the aim of having the current Japanese emission standard accepted within the Australian design Rule 80 series of vehicle emission standards.

Waverley Council (2001 to Current) — Development of an Environmental Management System for Council’s transport and vehicle maintenance operations, including in particular Input and advice in relation to relevant commercial and technical issues.

City of Sydney (2005) — Assessment of environmental aspects, including air quality, of a proposed redevelopment of craft studios and associated facilities at Fox Studios.

Office of the Lord Mayor of Sydney (2005) — Coordination of discussions with the NSW Departments of Planning and Environment re the provision of ambient air quality monitoring stations in the Sydney CBD area, in part as a basis for monitoring the air quality and potential health cost impacts of transport congestion and modes.

Warren Centre for Advanced Engineering, University of Sydney (2000 to 2003) — Contribution to the report “Sustainable Transport for Sustainable Cities”, a major government and private enterprise funded...
study into the future sustainability of transport in Sydney and adjoining regions. Study received the 2003 Bradfield Award for Engineering Excellence from the Sydney Division of Engineers Australia.

Australasian Natural Gas Vehicle Council (2002 to 2003) – Provision of professional advice and associated reports on the operational and commercial aspects of the development and marketing of natural gas and other alternative transport fuels in Australia.

Campbelltown City Council (2003) – Representation of Council at the Commission of Inquiry into the proposed development of a major chemical storage and handling facility, including specific advice and reports regarding relevant commercial and environmental issues.

Canterbury City Council (1999/2000) – Provision of professional advice in relation to Council’s response to the M5 East Tunnel, including the preparation of a major report dealing with prospective air quality impacts, ventilation strategies and emission treatment options.

NSW Parliamentary Inquiry Into the M5 East Tunnel (2000/02) – Appearance before two NSW Parliamentary inquiries as an expert witness on environmental aspects of the M5 East Tunnel.

Fairfield City Council (2001) – Review of Council’s fleet operations, including a detailed assessment of the potential for the introduction of natural gas as a fuel, and the economic and environmental benefits.

Commonwealth Department of Transport (2000) – Study of the potential applications of high speed ground transport in Australia (Prepared in conjunction with The Hon Peter Nixon, AO)


United Kingdom Department of the Environment (1994) – Contribution to the development of revised environmental guidelines for air and water quality.

United States Environmental Protection Agency (1994) - Contribution to an international team developing strategies for the protection and remediation of surface and sub surface water systems.

5 CORPORATE EXPERIENCE

Child & Associates

1992–Present, Managing Principal - Responsible for all aspects of the conduct of a private engineering and environmental consultancy, including administration, marketing, team coordination and technical and professional delivery.

Western Fuel Distributions Pty Limited, Australia

- 1984-92 Managing Principal. - Responsible for all aspects of the management and development of one of the largest private petroleum distributorships then operating in Australia, with a peak annual sales volume of 70 million litres, turnover of $30 million per annum, a direct staff of thirty, and a network of some 40 retail and wholesale agency outlets. This position included direct personal accountability for all aspects of storage, distribution and environmental performance.

Caltex Oil Australia Limited

- 1982-84 General Manager, Marketing and Operations. Responsible for the management and operation of Caltex Australia’s marketing, storage, warehousing, distribution, environmental and safety functions, including seaboard terminal and marine operations.

- 1980-82 National Consumer Marketing Manager. Responsible for Caltex Australia’s national consumer, industrial and distributor marketing activities.

Golden Fleece Petroleum Limited

- 1977 - 1980 Manager Operations, NSW. Responsible for the overall management of the distribution, warehousing, seaboard terminal and lubricant production activities of Golden Fleece Petroleum in New South Wales, including environmental, occupational health and safety matters.

Esso Australia Limited

- 1975-77 SA Manager, Marketing and Operations. Responsible for all aspects of the management of Esso’s petroleum, lubricant and LPG storage, distribution and marketing throughout South Australia.

- 1975-76 Refinery Manager. Responsible for all engineering, operational and environmental aspects of the joint Esso/Mobil refinery at Port Stanvac in South Australia.


- 1971-75 Senior Analyst, Logistics and Corporate Strategy Departments, Esso Sydney Head Office.
6 SOME RECENT REPORTS & PUBLICATIONS

- Transport Fuels In Australia: The Folly of Australia’s Increasing Reliance on Imported Crude Oil Submission to the Australian Senate Rural and Regional Affairs and Transport Committee Inquiry into Australia’s Future Oil Supply and Alternative Transport Fuels, February 2006.
- Future Directions: Challenges & Opportunities in the Australian CNG Vehicle Industry, ANGVC, December 2002
- High Speed Rail in Australia: Beyond 2000 (with the Hon Peter Nixon), November 2000
- Review of Options for the Treatment or “Filtration” of Tunnel Gases and Stack Emissions, City of Sydney. January 2003
- Engineering and Environmental Aspects of Enclosing the Cahill Expressway Cutting, City of Sydney, May 2001.

7 PERSONAL & PROFESSIONAL REFERENCES

- The Hon Peter Nixon AO, Former Federal Transport Minister
- John Black, Professor Emeritus of Transport Engineering, University of NSW
- Mr Martin Ferguson AM, Federal Opposition Spokesperson for Transport & Regional Services
- Dr John Brodie, Mayor, Holroyd City Council, Chairman NSW Flood Mitigation Authority.
- Mr Alan Ezzy, Former mayor Holroyd City Council, Chairman NSW Flood Mitigation Authority
- Mr Bruce Judd, Baulderstone Hornibrook, NSW Major Projects Council
- Bruce Glanville, Managing Partner, Deloitte Canberra, Chairman TotalCare Australia.
- Dr Michael Dawson, Head of School, Environmental and Forensic Science, University of Technology, Sydney
- Professor Vigid Vigneswaran, Faculty of Civil & Environmental Engineering, University of Technology, Sydney.
- Mr Merv Ismay, General Manager, Holroyd City Council, Sydney NSW
- Dr Jack Mundey, Past Chairman Historic Houses Trust, Environmentalist

Noel G Child
20 November 2007
ATTACHMENT A
Client Reference List

ABC Acquisitions Pty Ltd
Acre Woods Childcare Pty Ltd
Australian Commonwealth Environmental Protection Agency
Australian Federal Airports Corporation
Australian Federal Department of Transport and Regional Development
Bishop Austrans Australia Limited
Caltex Oil Australia
Campbelltown City Council
Canterbury City Council, Sydney, NSW
Childcare Solutions Australia Pty Ltd
Environment Protection Authority of NSW
Exxon Chemical
Fairfield City Council, Sydney, NSW
FreightCorp, Sydney, NSW
GM - Isuzu
Guangxi Environment Protection Bureau
Hong Kong Department of the Environment
Hornsby and Ku-ring-gai Councils, Sydney, NSW
Hyder Consulting
ICI Limited
Love Childcare Pty Ltd
Michael Bell Architects
Minter Ellison
Mobil Oil Australia, Associated
NSW Roads & Traffic Authority
Ove Arup & Partners
Port of Seattle Authority
Qantas Airways
Queensland Ports Corporation
Shell Australia
Sinclair Knight Merz
Southern Sydney Regional Organisation of Councils (SSROC)
State Rail Authority of NSW
The City of Sydney
The Western Sydney Alliance of Mayors
Thyssen Transrapid
Tom Howard QC
UK Department of the Environment
United States Environment Protection Agency
University of Technology, Sydney
Warren Centre for Advanced Engineering, University of Sydney
Waverley Council, Sydney, NSW
123-Global Australasia