

Costings for North Hinksey Parish

Project	Description	Cost per item
1	Capital Costs - Play Area	
	Prices based on Wickstead Leisure Ltd - Quote 17/63330 see quote for terms & conditions	
	Storm Multi Play System	£13,422.00
	Wickstead Continuous Surfacing	£11,200.00
	Base into existing Grass	£3,600.00
	Installation	£2,355.00
	On your Marks - Funrun Fitness Trail	£7,257.00
	Wickstead Continuous Surfacing	£5,155.50
	Base into existing Grass	£6,137.50
	Installation	£2,868.00
	Std Half Pipe with Metal Skating	£16,296.00
	Handstanding for skate area	£5,200.00
	Wildcat & Allround Multi-Sport System	£4,669.00
	Installation	£1,330.00
	Wildcat & Allround Multi-Sport System	£85.00
	Installation	£18.00
	Surface for Multi-Sport area	£2,550.00
	Special New Style Basketball Goal	£1,560.00
	Installation	£620.00
	Surface for Basketball Goal	£18,200.00
	Security Fencing	£500.00
	Secure Storage	£500.00
	<b>Sub Total of Capital Costs for Play Area</b>	<b>£103,543.00</b>
	Less Discount agreed with Contractor	5%
	Plus Carriage Costs	£1,349.15
	<b>Total Capital Costs - Excluding VAT</b>	<b>£99,715.00</b>
2	Ongoing Annual Maintenance Costs - Play Area	
	Fences	£400.00
	General Maintenance	£200.00
	Litter & Weed Clearance	£750.00
	Insurance	£200.00
	Inspections	£800.00
	Skateboard Cleaning & maintenance	£350.00
	Miscellaneous including administration	£100.00
	<b>Total Annual Maintenance Costs - Excluding VAT</b>	<b>£2,800.00</b>

Costings for North Hinksey Parish

Project	Description	Cost per item
3	Capital Costs - Allotments	
	Plough and harrow 1ha of land	£250.00
	Lay out plots, using GPS	£600.00
	Lay turf paths (800m <sup>2</sup> )	£4,400.00
	Put up chainlink fence 400m incl concrete posts	£8,000.00
	5 Bar gate	£250.00
	Parking spaces in grasscrete*	£4,530.00
	Annual maintenance	£500.00
	Noticeboards (G. Silliman's version)	£400.00
	Installation of Water Supply	£20 per metre
	Installation of 8 stand pipes	£4,000.00
	£800.00	
	<b>Total Capital Costs - Excluding VAT</b>	<b>£23,730.00</b>
4	Ongoing Annual Maintenance Costs - Allotments	
	Fences	£100.00
	General Maintenance	£200.00
	Plot & Weed Clearance	£300.00
	Miscellaneous including administration	£100.00
	Water Rates	£100.00
	Skip Hire	£100.00
	Less Allotments Rent Income	30 plots @ £5
	-£150.00	
	<b>Total Annual Maintenance Costs - Excluding VAT</b>	<b>£750.00</b>
5	Summary	
a	Capital Costs	
	Play Area	£99,715.00
	Allotments	£23,730.00
	<b>Total Capital Costs</b>	<b>£123,445.00</b>
b	Annual Maintenance Costs	
	Play Area	£2,800.00
	Allotments	£750.00
	<b>Total Annual Maintenance Costs</b>	<b>£3,550.00</b>
	Over a 20 year life, Assuming Inflation is 3% per annum Assuming a rate of interest of 6% pa I.e net discount rate of 3%	
	<b>The Net Present Value of the Maintenance Costs is</b>	<b>£52,815.04</b>
c	<b>Total Ccost of Project (a + b)</b>	<b>£176,260.04</b>

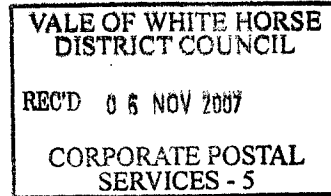
# APPLICANTS' RESPONSE

6-11-07  
BARTON  
WILLMORE

## APPENDIX 8

Theale Court  
11 - 13 High Street  
Theale  
Reading  
RG7 5AH

M. Deans Esq.  
Development Control  
Vale of Whitehorse DC  
Abbey House, Abbey Close  
ABINGDON  
OX14 3JE



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**BY FAX AND POST 01235 540396**

12113/A3/NPN/ka

5<sup>th</sup> November 2007

Dear Martin,

**RE: OUTLINE PLANNING APPLICATION 07/00741/OUT - LAND EITHER SIDE OF TILBURY LANE, BOTLEY**

On behalf of the University of Oxford we write in relation to the above site to confirm our proposed contribution to public open space and children's play space, following receipt of the formal request for financial contributions from the development by North Hinksey and Cumnor Parish Councils, forwarded by your letter dated 29<sup>th</sup> June 2007.

We have already discussed the form and extent of the contribution to POS with Mike MacKay in Leisure Services and we had proposed an off-site contribution of **£10,000** towards improved facilities at the Louis Memorial Garden in Botley for children of all ages.

We have also agreed an open space commuted maintenance contribution (inc 2 LAPs) of **£149,769** towards the adoption of the areas of public open space serving the development, which is proposed to be offered in the first instance to North Hinksey and Cumnor Parish Councils and secondly to the District Council.

However, following these discussions the two Parish Councils issued their request for a contribution to Parish projects for children's play space. On this basis we propose to adjust and increase the contribution proposed for children's play space. The open space maintenance contribution of **£149,769** remains unaffected by this change.

We understand firstly that the Council is prepared to accept contributions towards the provision of children's play space at Fogwell Road recreation ground (Cumnor Parish) and on the proposed development site in North Hinksey Parish - thereby waiving the previously agreed contribution to the Louis Memorial Garden.

As you know, Circular 5/05 guides the application of S106 planning obligations and sets out a series of legal tests, which all contributions must comply with. These include the test of necessity and that contributions must fairly relate in scale and kind to the development proposed. The University of Oxford does not consider that either Parish Council has provided any form of justification for their wish list of play space contributions. Therefore in the absence of such information we must take a reasonable view as to the level of contributions sought and whether these pass the tests of Circular 5/05. In our view the



The Barton Willmore Planning Partnership

Brackley, Banbury, Bicester, Leamington, Leamington, Reading, Southall, West Malling

contributions sought in their full extent do not relate to the scale of development proposed – nor take account of the fact that because the development straddles two parishes this does not enable an effective 'doubling up' of contributions to play space.

Having said this, we recognise that the parishes have carefully considered and costed their play equipment, which no doubt has followed a process of consideration at a local level with the aspirations and needs of the local community at the forefront of their deliberations.

We therefore propose the following contribution towards the Fogwell Road recreation ground:

**£16,055** – to cover all items in the Wicksteed Leisure quotation dated 11<sup>th</sup> May 2007 less the climbing wall and safety grass and associated installation. It is considered that this contribution would materially benefit the existing play area and be proportionate to the development proposed and the needs generated by the development.

In addition we propose on site provision of equipped children's play space within North Hinksey Parish facilitated by the upgrading of the eastern most LAP to a LEAP. We propose to provide either the storm multi-play system (based on Wicksteed Leisure quotation ref 17/63330) or equivalent provision with associated surfacing and installation costs. The details of the equipment proposed would be considered as part of the reserved matters detailed consent stage, and a suitable planning condition can be imposed to require the provision of one on site LEAP and one LAP.

It is considered that the provision of these facilities, one to an off-site enhancement of an existing play area, and the latter to the creation of a new children's play facility for 8-14 year olds within the development site is a robust and effective contribution that is proportionate to the development proposed.

In summary the contribution to public open space and children's play space will comprise the following:

1. **£16,055** to the provision of off-site children's play space;
2. Provision of on site LEAP and LAP;
3. Public open space maintenance contribution of **£149,769**.

This represents an increase of **£6,055** above the previously agreed off-site contribution with the District Council and the provision of an on-site LEAP. We therefore invite the District Council to support and accept this proposed contribution and seek written confirmation in this regard. We trust that you will be able to liaise with Mike MacKay in Leisure Services in advance of our meeting on Thursday 8<sup>th</sup> November and that we can reach an agreement at that meeting in terms of the open space and children's play space contributions, as well as public art, to enable the drafting of the S106 to proceed.

I hope that this is clear and helpful.

Yours sincerely,

*N. Paterson-Neild*

**NICK PATERSON-NEILD**

Associate

cc: A. Whitehouse Esq. - University of Oxford  
 G. Lloyd Esq. - University of Oxford  
 N. Roberts Esq. - RPS  
 M. Davis Esq. - Savills  
 R. Withey Esq. - Manches Solicitors



# NORTH HINKSEY PARISH COUNCIL



Alan Stone, Clerk to the Council

nhinkseyparish@msn.com

27 Long Close, Eynsham Road, Botley, Oxford OX2 9SG

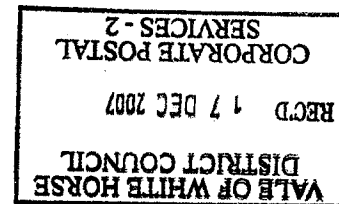
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Cllr. Mrs. B. A. Newport,  
Chairman of North Hinksey Parish Council,  
28 Stanley Close,  
North Hinksey,  
Oxford OX2 0LB  
E-mail: brionynewport@f2s.com  
Tel. 01865 246497

## APPENDIX 9

13<sup>th</sup> December 2007

Mr. M. Deans,  
Area Planning Officer (North),  
V.W.H.D.C,  
Abbey House,  
Abingdon,  
Oxon.  
OX14 3JE



Dear Mr. Deans,

### Planning Application CUM/NHI/201407X Residential Development, Tilbury Lane, Botley.

Thank you for agreeing to meet with myself, Councillors Batts and Stevens and Alan Stone, the Parish Clerk and explaining the current position in relation to the proposed developer. You will have gathered from our dismay that the news contained in your letter of 29<sup>th</sup> November about the developer's offer of Section 106 contributions came not only as a major disappointment, but conflicted with views expressed by their planning consultant, Nick Patterson-Neild, at the meeting held on 23 January 2007, with both Cumnor and North Hinksey Parish Council representatives. At this meeting the developers clearly stated they were proposing to have two on-site play areas for young children on either side of Tilbury Lane.

It was on the basis of this information and that the developer was willing to offer land shown as a recreation area, to either the Parish or District Councils, that my Council expressed an interest in having the land on the North Hinksey side of Tilbury Lane. Our logic was that the land could be used to provide a much needed play area for older children, especially as a new path would link into an older established community of this parish, and that in the Fogwell Road area under Cumnor Parish Council there are already two separate equipped play areas for younger children. I say much needed as the chronic shortage of play facilities for the Seacourt Road area and all other properties on that side of West Way and Eynsham Road, had been highlighted by Sports England in 2004, based on the knowledge that the nearest recreational area within the NHPC was some two miles away at the Louie Memorial Playing fields, in Arnolds Way, near to Matthew Arnold School.

The offer of the land behind the proposed development, with Section 106 contributions seemed to answer both childrens' needs, the Sports England criticism and Parish Council aspirations. Hence our dismay and deflation when your letter arrived to say that contrary to the earlier meeting the developers were now only willing to provide play equipment on the small, on-site piece of land, on the east end of the site. To pay, in part for this they proposed to redirect the £10,000 originally offered to the Louie Memorial Playing Field on the grounds that they do not consider the residents of the site will make significant use of the Louie Memorial field. I re-iterate our comments below: -

- a). The mention of the £10,000 contribution to the Louie Memorial Playing Fields came as a total surprise, as the Parish Council had never been informed of this fact.

- b). The developer is perfectly correct to say that residents on the Seacourt Road side of West Way etc. would not make significant use of the Louie Memorial playing fields. This is precisely NHPC and Sport England's point, it is too far away from the estates on the Seacourt Road side of West Way for children and parents to be able to use the facilities. A recent Parish Council survey of recreational facilities in North Hinksey confirmed the desperate need for meaningful play facilities in the locality of the proposed Tilbury Lane development.
- c). The Parish Council does not understand how the developer has been allowed to provide two on-site play areas, (one on either side of Tilbury Lane), without being asked to provide any play equipment. What has changed since the meeting on 23 January 2007, when it was stated that both areas would have play equipment for young children? Councillors cannot believe that the V.W.H.D.C. would agree to such an omission and if NHPC had been consulted on this fact, it would have been made abundantly clear Sport England's criticism of the complete absence of practical local facilities in lower North Hinksey.
- d). The developer plans to have a walkway from the site into Hazel Road, which amongst other things will open up access to the site for children from nearby roads and Botley Primary School. Elderly people have complained that children of all ages play in Seacourt Road and are worried that they may get knocked down. Some of the older children also play football in the street near their bungalows too.  
The proposal is for the developer to put play equipment on the small area of irregular open space (approximately 142 sq. m. with the longest side 14 m.) on the North Hinksey side of Tilbury Lane. The size of the plot is a clear indication of how little play equipment will be accommodated on that site and by no stretch of the imagination is it adequate to meet the needs of the Tilbury Lane development, let alone those children coming from the other local estates in North Hinksey. This will be their play area outside of the distant Louie Memorial playing fields.  
clear indication of how little play equipment will be accommodated on that site and by no stretch of the imagination is it adequate to meet the needs of the Tilbury Lane development, let alone those children coming from the other local estates in North Hinksey. This will be their play area outside of the distant Louie Memorial playing fields.

My Councillors believe that the developer should be required to provide play equipment on-site within the development only and as such argue that North Hinksey Parish Council and its residents (especially children) therefore gain no benefit from the Section 106 contribution process to address the local harm that will be experienced as a result of the development as outlined in your 29 November letter.

My Councillors respectfully request that you bring this letter to the attention of your Council's Development Control Committee as we think they should ask the relevant officers to go back to the developer and ask that they provide on-site play facilities at the two indicated sites in line with the proposals discussed at the meeting on 23 January 2007. In addition, they offer a reasonable financial settlement to enable NHPC to provide for the development of a play area for older children on land (between the proposed development and the A420) on the North Hinksey side of Tilbury Lane. In doing so this will address the chronic shortfall of local play facilities in North Hinksey as identified by Sport England, the Parish Council and local residents. This is too good an opportunity to miss to address a real problem. With two younger age children sites already in the locality of Fogwell Road it would make much better sense to have some older age facilities on the new Tilbury Lane site for ease of access to the Hazel and Poplar Road children to access, rather than going nearly as far as the Louie Memorial Fields in Arnolds Way and the end of Fogwell Road in the playing fields there.

I think it is only fair to re-iterate that NHPC's interest in the land on offer from the developers is driven by the possibility of a play area for older children. If this is not likely to materialise, then the Parish Council will have no interest in the land and as such would be foolish to agree to take it into its ownership. I can only assume that if this was the case the Vale would have to probably take over ownership of the land and all associated maintenance costs.

I wonder whether there is the possibility of a compromise here to achieve the much need play facilities for older children? If we can for a moment assume: -

- a). That the Development Control Committee agrees with our submission and the developer is asked to provide on-site young children play facilities, as this is not an unreasonable request for the size of the developments.

- b). If the Vale then takes on ownership of all the land, (with a maintenance contribution from the developer), it will have to incur year on year costs of maintaining the land. If the Parish Council did agree to take ownership of part of the land this would reduce the Vale's year on year maintenance liability. With this saving in mind, I believe it would be in the Vale's interest to make a financial contribution to NHPC in lieu of its ongoing yearly saving, due to reduced maintenance costs.
- c). Using the logic that the developer has not made a Section 106 contribution to North Hinksey, they are then asked to make a much reduced contribution as a gesture of goodwill, say £50,000, the Parish Council finds say £25,000, and the Vale makes a negotiated contribution based on the logic in b). above, then there would hopefully be sufficient funding to make the play area for older children a reality. Sport England and NHPC would be happy, and most importantly, the NHPC area local children would at last have play equipment they have longed for.

Please pass this letter onto all the relevant officers and bring its content to the attention of members on the Development Control Committee. I apologise for the length of the letter but feel it has to be of this length to address all the issues. I hope it demonstrated how passionately I and my fellow Councillors feel about the need to provide the much needed play facilities and how unhappy we are with the suggested Section 106 contribution for our community.

Yours sincerely,

*Briony Newport*

Councillor Mrs. B. A. Newport  
Chairman of NHPC

Cc District Councillors: T. Quinlan and Mrs. J. Shepherd

# Centre for Radiation, Chemical and Environmental Hazards



Mr M Deans  
Area Planning Officer (North)  
Vale of White Horse District Council  
Abbey House  
Abingdon  
OX14 3JE

## APPENDIX 10

Health Protection Agency

Centre for Radiation,  
Chemical and  
Environmental Hazards

Radiation Protection  
Division

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Oxfordshire OX11 0RQ

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Fax +44 (0) 1235 833891  
[www.hpa.org.uk/radiation](http://www.hpa.org.uk/radiation)

12 December 2007

Dear Mr Deans,

**Ref: Planning Application CUM/NHI/20107-X  
New Housing Development, Land off Fogwell Road and Tilbury Lane, Botley, Oxford.**

I am writing in response to your request to review an Electromagnetic Field Survey Report produced on the 4<sup>th</sup> of April 2007 by WSP Environmental UK. I understand that the report has been submitted to Vale of White Horse District Council in support of the above planning application. You have also requested comments on a letter dated 11<sup>th</sup> of June 2007 received from Mr Bowell in relation to the same planning application. I have addressed these two issues separately below.

### **Report from WSP Environmental UK**

The report from WSP Environmental UK contains general information about the biological effects of power frequency electric and magnetic fields, but relatively little detail regarding the instrumentation and survey techniques employed during their assessment of the site. The instrument used is not one with which I am familiar. However, a search of the internet indicated that it is a small hand-held device that purports to be suitable for the measurement of low frequency electric and magnetic fields. The authors of the report do not indicate how the instrument was used, but it certainly would not be possible to obtain meaningful measurements of electric field strength if it was hand-held; the presence of the surveyor's body would perturb the field. Moreover, some of the electric field strengths assessed during the survey appear to have been beyond the range of the instrument. Indeed the specification of the instrument quoted on the internet suggests that it would not be suitable for measuring either electric field strengths or magnetic flux densities that were significant fractions of the relevant reference levels. It is possible that the report does not accurately reflect the surveying technique adopted, but taken at face value it does not inspire confidence that the surveyors are experienced in this type of measurement.

The principal outcome of the survey is an assessment of magnetic flux density. The values presented are plausible for this type of situation. The magnetic flux density produced by the overhead lines will be dependent on the load on the line, so the measurement results should not be regarded as absolute values, but rather indicative of 'typical' flux densities. In his letter, Mr Bowell expresses concern that the measurements may underestimate peak magnetic flux densities as they were probably carried out in daylight when domestic demand is likely to be lower. However, it should be noted that commercial and industrial demand is often higher during the day. Without actual load data, which the report indicates is not available, it is not possible to comment further on relationship between the measured values and maximum flux densities.

The interpretation of the measurement data is conservative. The Health Protection Agency currently has responsibility for providing advice on exposure restrictions for electromagnetic fields, a function

formerly exercised by the National Radiological Protection Board (NRPB). This advice was last reviewed in 2004 and as a result it was recommended that the UK adopt the guidelines of the International Commission on Non-ionizing Radiation Protection (ICNIRP) for limiting exposure to electromagnetic fields between 0 and 300 GHz. These are intended to avoid established adverse effects of excessive exposure and for power frequencies the guidelines set basic restrictions in terms of induced current density in the tissues of the central nervous system. As the basic restrictions are not easily measurable, the guidelines also set derived reference levels, set in terms of external field strengths and magnetic flux densities. The magnetic flux density reference level for public exposure at power frequencies is set at 100  $\mu\text{T}$ .

It should be noted that European Member States have formally adopted a European Union Recommendation as a framework for limiting public exposures. This document incorporates the ICNIRP public exposure guideline values.

Hence the advice of the Health Protection Agency is that provided that 50 Hz magnetic flux densities are below 100  $\mu\text{T}$ , there is no requirement for further action. In the report, WSP Environmental UK recommend a precautionary approach based on the epidemiological observation that time-weighted average exposures above 0.4  $\mu\text{T}$  is associated with a small increase in the absolute risk of leukaemia in children from about 1 in 20,000 to 1 in 10,000 per year. It has been concluded that currently the results of these studies, taken individually or as collectively reviewed by expert groups, are insufficient either to make a conclusive judgement on validity or to quantify appropriate exposure restrictions. However, such studies taken together with people's concerns provide a basis for considering the possible need for further precautionary measures in addition to the application of quantitative restrictions on exposure to electromagnetic fields. This appears to be the approach recommended by WSP Environmental UK in its report. In addition, to adopting a precautionary approach based on 0.4  $\mu\text{T}$ , the authors of the report further suggest that a reduction of 0.1  $\mu\text{T}$  should be made to allow for a contribution to exposure from domestic wiring and appliances. It is difficult to estimate such a contribution with confidence as it varies considerably from property to property; in locations remote from overhead power lines background flux densities are generally in the range of 0.01 to 0.2  $\mu\text{T}$ , though it is known that fields in some properties will exceed this range. Hence the value assumed by WSP Environmental UK (0.1  $\mu\text{T}$ ) is towards the upper end of the range typically encountered in domestic properties and is therefore reasonably conservative, but cannot really be regarded as a 'worst case'.

#### **Letter from Mr Bowell**

I have consulted with my colleague Dr Sienkiewicz in relation to Mr Bowell's letter. Our comments are given below.

In his letter, Mr PJ Bowell, a local resident, raises numerous objections to the outline planning application, and opposes the new housing development off Fogwell Road and Tilbury Lane in Botley due to the possible impact of power frequency electric and magnetic fields (EMFs) on health.

In summary, Mr Bowell considers that EMFs at levels commonly found in the environment poses a substantial risk to health of both adults and children. He notes the occurrence of several serious illnesses that have occurred in his neighbourhood over the last 40 years or so, which he attributes to EMFs. In particular, he objects to the conclusions of the review from the independent Advisory Group on Non-ionising Radiation (AGNIR) on EMFs and the risk of cancer which was published in 2001. The AGNIR review was much cited in the WSP report (called the Doll report).

Mr Bowell's concerns are representative of a minority, but highly vocal opinion that exists in the UK and elsewhere regarding the impact of EMFs. They are expressed by campaign and activists' groups, as well as a few scientists and academics, regarding the health effects posed by both power lines and mobile phone masts. However, these views do not represent scientific orthodoxy nor reflect the prevailing scientific consensus.



In addition, they do not agree with the specific advice on EMFs from the Radiation Protection Division of the Health Protection Agency (formally the National Radiological Protection Board, NRPB), or those of the government as expressed through the Department of Health. Similarly, these views are at odds with the advice from the World Health Organization (WHO) and are inconsistent with the guidance from international scientific bodies, such as the International Commission on Non-ionizing Radiation Protection (ICNIRP) who are responsible for setting exposure standards worldwide. The views of these bodies and agencies are consistent with those expressed by AGNIR.

ICNIRP is an autonomous scientific body recognised by WHO. ICNIRP published its most recent guidelines for limiting human exposures to EMFs in 1998. These are intended primarily to prevent adverse effects resulting from induced electric fields and currents, including stimulation of nerves and muscles, and subtle effects on brain function.

The values recommended by ICNIRP are 500  $\mu\text{T}$  and 10  $\text{kV m}^{-1}$  for workers, and 100  $\mu\text{T}$  and 5  $\text{kV m}^{-1}$  for members of the public. The lower levels for the public allow for the inclusion of children, and for people with differing health status. These values are not limits *per se*, and higher levels may be permissible under some circumstances. Following a comprehensive review of the available scientific information, NRPB in 2004 suggested that the ICNIRP guidelines be adopted in the UK, and this was endorsed by government.

Concerns about the health effects of electric and magnetic fields (EMFs) generally began in 1979 when it was first suggested that the incidence of cancer in children might be related to the magnetic fields from the power lines near their homes. Since that time other concerns have arisen, including increased risks of various types of adult cancer, miscarriage, neurodegenerative diseases, suicide and depression, and negative impacts on well being.

These and other endpoints have been the subject of much research worldwide: many laboratory and epidemiological studies have investigated the potential of EMFs to cause disease or affect biological processes.

As detailed by the AGNIR report, only one reasonably consistent association of an adverse health effect has so far been linked with exposure to EMFs. This indicates that exposure to average magnetic fields in the home of 0.4  $\mu\text{T}$  and above is associated with a small increase in absolute risk of leukaemia in children, but not in adults. If causal, this would contribute several additional cases to the annual total of about 500 in the UK. Exposures below 0.4  $\mu\text{T}$  were not associated with any increased risk, suggesting a threshold may exist.

This association comes from a pooled analysis of data from a number of well-conducted epidemiological studies, particularly from the USA and Scandinavia, and including the UK Childhood Cancer Study (UKCCS). However, the evidence is not strong enough to justify a firm conclusion that such fields cause leukaemia. There is little evidence for any raised risks of other cancer type in children or for any type of cancer in adults. In addition, laboratory studies have not provided any consistent evidence that magnetic fields are genotoxic or have a carcinogenic effect.

Nevertheless, following a comprehensive and in-depth review of the available data by a multinational team of 21 scientific experts, the International Agency for Research on Cancer (IARC) in 2002 classified power frequency magnetic fields as a possible human carcinogen (Class 2B), as Mr Howell rightly indicates in his letter. However this does not mean that magnetic fields are a definite cause of cancer: many common substances, coffee for example, are also classified as Class 2B. IARC could not classify electric fields due to the paucity of data.

More recently, a large case-control study was published by Prof Draper and colleagues from the Childhood Cancer Research Group at Oxford University. It found higher rates of leukaemia (but not other cancers) among children whose home address at birth was close to major high voltage power lines compared with those who lived further away. While the study identified a significant increase in the relative risk for leukaemia, it is unclear whether this was related directly to magnetic field exposure.

So overall, there are suggestions that long-term exposure to either elevated levels of magnetic fields in homes, or possibly proximity to power lines, may be associated with an increased risk of childhood leukaemia. However, having a statistical association does not imply that exposure causes childhood leukaemia, and the possibility that confounding or some bias in the data may provide an explanation cannot be yet ruled out.

In contrast to the data on childhood leukaemia, and the assertions of Mr Bowell, the results of studies investigating other cancers and non-cancer outcomes have generally been inconsistent and difficult to interpret. It is generally agreed that the evidence for these other diseases being associated with EMFs is very weak, far weaker than that for childhood leukaemia. In addition, laboratory studies have not produced any good evidence of field-related effects with exposures below about 100  $\mu$ T.

There is general consensus amongst scientists and others regarding the IARC assessment of magnetic fields, but far less agreement regarding the implications of this assessment.

The Stakeholder Advisory Group on Extremely low frequency EMFs (SAGE) was set up, managed by the Department of Health, to explore the implications of a precautionary approach to EMFs and then to make practical recommendations. The group has representation from public concern groups, the electricity industry, government, and from HPA. Objectives include highlighting ways that people can reduce exposures by taking action within their own homes, and producing options for reducing exposures from power lines. The first recommendations from SAGE were published in April 2007 (available from <http://www.rkpartnership.co.uk/sage>).

SAGE was not set up to review the scientific evidence about the health effects of EMFs. Rather, it took as its starting point the advice of NRPB in 2004 to "consider the possible need for further precautionary measures". However, the state of the scientific evidence is a material concern in decisions on whether to adopt the SAGE advice.

SAGE identified two broad viewpoints on the science. In one, exposure to EMFs was assumed to be a risk factor (possibly causal) for childhood leukaemia. This was termed by SAGE the "WHO/HPA" position. The other viewpoint allowed for a larger number of illnesses possibly attributable to EMF exposure (including adult leukaemia and brain tumours, miscarriage and amyotrophic lateral sclerosis). This viewpoint was short-handed as the "California" position in the SAGE report. The view of HPA on the scientific evidence is broadly in line with that described as the WHO/HPA position in the SAGE report.

SAGE made two recommendations in their report. Firstly, it was recommended that electricity companies be encouraged to choose the optimal phasing (usually transposed phasing) for all new lines, and also be encouraged to convert existing lines where possible and justifiable. Secondly, it was recommended that more information be provided to members of the public about exposures and the actions they could take themselves to reduce exposures if they wished.

Neither option would result in material reductions in exposures. Hence SAGE identified that the best-available option for obtaining significant exposure reduction (in fact, reduce future exposures that would otherwise occur) was to stop building any new buildings for residential use (and some other uses including schools) within specified distances of overhead power lines, and to stop building new overhead power lines within the same specified distances of existing such buildings. The corridor option for high voltage power lines was not supported by the cost benefit analysis on the basis of childhood leukaemia alone. The absolute benefit in terms of cases of leukaemia and lives saved under this model was very small (of around five cases per year, according to estimates by Draper and colleagues) but the costs and opportunity costs are considerable.

SAGE also offered other measures for existing houses near high voltage power lines, and for decreasing exposures from domestic wiring and household appliances.

The HPA has produced a formal response to the SAGE First Interim Assessment and this will be put in the public domain in due course.

Mr Bowell raises the question about EMFs affecting melatonin, a hormone produced by the pineal gland, and thus influencing the risk of cancer. There are good reasons to believe that breast cancer could be most susceptible to changes in melatonin, and this question was thoroughly examined by AGNIR (in a sub group whose members included experts on breast cancer and melatonin). An extensive report was published in 2006 which is available from the HPA website.

The report concluded that overall the evidence did not support the hypothesis that exposure to magnetic fields was associated with an increased risk of breast cancer. Plus it was concluded that magnetic fields did not appear to affect the production or biological action of melatonin. Prof Henshaw, a physicist from the University of Bristol, has disagreed with these conclusions, although he does not have expertise either in breast cancer or melatonin physiology.

Regarding the possible interactions and impact of EMFs with particulate pollutants, AGNIR have examined the issue of particle deposition in the vicinity of power lines and possible effects on health. A report was published in 2004, which is also available from the HPA website. The report concluded that while corona discharge from high voltage power lines may produce clouds of negative or positive ions that are readily blown downwind over several kilometers, it seemed unlikely that these corona ions would have more than a small effect on the long-term health risks associated with particulate air pollutants, even in individuals who are most affected. However biological and other uncertainties mean that it is not possible to estimate the impact precisely.

Overall, the ICNIRP guidelines provide protection against the known adverse effects of EMFs. At power frequencies, ICNIRP recommend values for members of the public of 100  $\mu\text{T}$  for the magnetic field and of  $5\text{kV}\text{m}^{-1}$  for the electric field."

In summary, the conclusions of the WSP Electromagnetic Field Survey Report carried out in relation to Planning Application CUM/NHI/20107-X are consistent with the current scientific understanding of Electromagnetic Field's (EMF's) on health and current UK EMF exposure guidelines. The suggested distance of 74m from the centre of the power line inside which it is recommended that residential development is not located is in fact very conservative in terms of current UK EMF exposure guidelines.

If you have any questions concerning this response please do not hesitate to contact me.

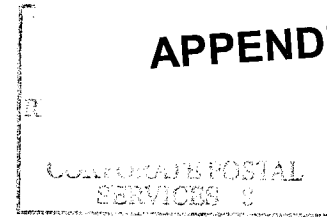
Yours sincerely,

Nigel Cridland

Our ref: 12260260/L02JG

**APPLICANT'S RESPONSE**19<sup>th</sup> December 2007**APPENDIX 10**

Mr M Deans  
 Area Planning Officer (North)  
 Vale of White Horse District Council  
 Abbey House  
 Abingdon  
 OX14 3JE



Dear Martin

**Planning Application CUM/NHI/20107-X – Land off Fogwell Road and Tilbury Lane  
 Response to Health Protection Agency Review**

We write following receipt of the review by the Health Protection Agency (HPA) of WSP Environmental Ltd's Electromagnetic Field (EMF) Survey Report. We are writing to provide further information on the instrumentation and survey techniques used during the site visit we undertook as the person who undertook the HPA review has no familiarity with the instrument used during the survey and has made comments based on a web based review of the meter and we feel that it is important to provide reassurance on the suitability of the meter used for the survey and thereby the accuracy of the measurements made.

As stated our report, a handheld EMFields Professional Electric and Magnetic Field Meter was used to measure electric and magnetic fields at a number of locations across the powerlines. This equipment, from Perspective Scientific, and is considered to be suitable for the measurement of EMFs from powerlines, as advised in the User Instructions booklet which says 'it is suitable for measuring extremely low frequency electric and magnetic fields from AC mains electricity sources, including power lines and transformers.'. The User Instructions booklet was written by Powerwatch, a non-profit independent organisation who have a central role in the UK Electromagnetic Field and Microwave Radiation health debate.

The meter has two ranges:

Magnetic Fields: 0 – 19.99  $\mu$ T (micro Tesla)  
 Electric Fields: 0 – 1999 V/m (volts/metre)

We would like to point out that the measurements of magnetic fields undertaken on site during the survey all fall within the range of the meter. Some of the readings of electric fields were beyond the range of the meter and are reported in the report as 'Too high'. However it was not the electric fields that were used in the determination of a distance from the powerlines within which residential development should be located, but the magnetic fields as these are associated with a small increase in absolute risk in childhood leukaemia. We note that the HPA review commented that the magnetic field strength values presented in the report were 'plausible for this type of situation'.

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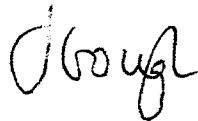
The meter is sensitive and needs to be used slowly and carefully in order to obtain correct readings. The User Instructions booklet provides information on how the meter should be used when taking measurements of magnetic and electric fields. In terms of magnetic fields, the meter should be moved very slowly to find the maximum reading. The booklet says that 'this is best done by twisting it slowly in one direction, and when you have found the maximum reading then twist it at right angles to the previous direction. Finally twist it slowly but slightly in all directions to find the maximum reading.'

For the measurement of electric fields, the instructions include holding the meter away from the surveyor's body (at arm's length so that any influence of the surveyor's body is kept to an absolute minimum) placing your thumb centrally on the bottom front and two fingers holding the back of the meter towards the bottom.

The meter has been designed to be used as a hand held device and therefore calibrated to provide accurate and meaningful readings provided it is used in accordance with the instructions in the User Instructions and summarised above. These instructions were followed at all times during the site visit and therefore we believe that the use of this meter in the measurement of electric and magnetic fields is appropriate and that the readings are accurate based on the load on the powerlines at the time of survey. Furthermore, the meter is also deemed as being fit for the purpose for which it was used i.e. undertaking measurements of electric and magnetic fields and the report we produced does reflect the survey method followed.

We hope that the information in this letter is useful and answers the queries raised regarding the instrumentation and survey techniques used during the site visit we undertook. If you have any queries or require any further information please do not hesitate to contact the undersigned.

Yours sincerely



**Joanne Gough**  
**Associate**  
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