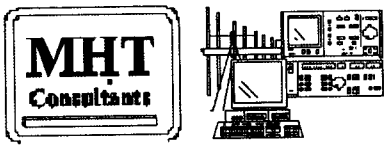

OSNABURGH STREET

Television Reception

Completion Survey #2

MHT Consultants

August 2009

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Electromagnetic Environmental Effects
Quedgeley GLOS, GL2 4XZ
20th Aug 2009

M.H.THURLOW..... Martin Thurlow

For and on behalf of MHT Consultants

1.0 TEST DETAILS

1. 1 Test Detail

Test Venue : Primrose Hill & Hampstead Area, London
Test Dates : 12th ~13th August 2009
Test Personnel : M.H.Thurlow
Test Specification :
Test Protocol : MHTC EM Ambient Test Protocol

1.2 Summary

A second Electromagnetic Emission Field Strength survey has been carried out in the Primrose Hill & Hampstead area of London to the north of the Osnaburgh Street Development site.

The purpose of the tests was to measure and quantify the current level of TV reception in the area on completion of the development of the site. Then by comparison of the current results with those obtained in the original survey (*January 2007; see report 9654-RL-01*) the impact of the development upon the TV reception in the area is assessed.

When compared to the results of the first survey the strength of the received TV signals have reduced. In particular at survey line A and B the signal has reduced by up to 20dB (10:1) in some cases.

Although the topology of the area has changed over the intervening 2 years since the first survey, it is clear that the Osnaburgh Street Development has had some effect on the TV reception in the surveyed area, particularly in the shadow areas immediately to the north of the development.

The field survey measurements obtained shows the quality of TV reception in the area immediately to the north of the development along Albany Street can be expected to be significantly affected as far north as Albert Road.

Due to interaction and scattering some localised poor reception can also be expected in the Primrose Hill area particularly in the shadow areas; however it should be noted that this cannot be totally attributed to the development.

TV reception is not expected to be noticeably affected to the north of Chalk Farm Road.

Since the channel allocation is the same for both types of transmission these effects can be expected to affect both analogue and digital TV reception in the surveyed area.

2. INTRODUCTION

2.1 General

A second survey of the EM ambient measurements has been carried out in the general residential area of Primrose Hill & Hampstead in London, England. These measurements were carried out for and on behalf of Ove Arup by MHT Consultants.

Testing was carried out on the 12th and 13th August 2009; measurements were carried out to the general methods defined in European Standards over the frequency range 450MHz to 650MHz.

The purpose of the tests was to measure the current field strength and signal/noise levels for television reception in the area to the north of the Osnaburgh Street Development This measurement is required to provide a comparison to the results obtained in a pre-development survey (*January 2007; see report 9654-RL-01*) to assess the impact of the development upon the TV reception in the area.

RF emission measurements were made over the following frequency range covering the television broadcast band:

450MHz ~ 650MHz

Testing was carried out using one mobile test station in the early hours of 12th and 13th August 2009 with 1 test engineer on site during the test.

2.2 Survey Area Description

There are two main transmitters serving the Greater London area, these are located at Crystal Palace for BBC and ITV channels and at Croydon for the C5 channel. The antenna mast heights are

Crystal Palace ~ 321 AOD
Croydon ~ 289 AOD

Both transmitters are horizontally polarised. Due to the scattering of buildings etc in the London area coupled with the wide coverage area required there are a great number of TV transmitters and transponders in the Greater London area *(see Appendix.C)*

It should be noted that the quality of TV reception is not only dependent upon the signal strength but also on the received signal/noise ratio.

The second survey was carried out along the survey lines used in the original pre-development survey; to ensure a like-for-like comparison the actual points on the survey lines were located by reference to the site notes of the original survey.

The survey points are located in the area of possible shadowing to the north of the Osnaburgh Street Development and the general layout of the surveyed test area is shown in figure.A.1.

3.0 TEST METHOD

3.1 Test Method

For the radiated electric and plane-wave tests standard test methods, based upon those described in the European and International standards for radiated Electric and Plane-wave fields, have been employed.

The measurements were made in the frequency domain using a broadband Log Periodic (LPA) antenna as the field transducer. A specialist modified RFI scanning receiver was used as the measurement system. Peak detection was used throughout for the data collection. The analysed data was then stored on a PC controller. The system is pre and post calibrated.

3.2 Measurement Sampling

The test positions of the field strength survey antennas along each of the survey lines are shown by figure.A.1 whilst figure.A.2 shows the test schematic for the radiated electric emission tests. The antenna height was set to the same height as used in the original survey at 5.0m above local ground level.

For the TV Band A, the measurements were made in horizontal polarisation to match the possible TV transmitters.

4.0 TEST RESULTS

4.1 Measurement Parameters

The measured results of the current TV reception in the Primrose Hill & Hampstead area to the north of the Osnaburgh Street Development are shown in the graphs of Appendix.B.

4.2 Graphical Results

The graphical results for each test position are given in Appendix.B.

For each survey line measurement, the first plot shows the superimposed results of the field strengths measured in Band A at the test positions along the survey line.

The variation of the measured field strength along the survey line at the BBC1 Chan 26 (Crystal Palace) and the C5 Chan 37 (Croydon) frequencies is also given in the subordinate graphs.

5.0 CONCLUSIONS

As previously noted the field strength measurements obtained at the survey test positions shows some variation along several survey lines.

When compared to the results of the first survey the strength of the received TV signals have reduced. In particular at survey line A and B the signal has reduced by up to 20dB (10:1) in some cases.

Although the topology of the area has changed over the intervening 2 years since the first survey, it is clear that the Osnaburgh Street Development has had some effect on the TV reception in the surveyed area, particularly in the shadow areas immediately to the north of the development.

The field survey measurements obtained shows the quality of TV reception in the area immediately to the north of the development along Albany Street can be expected to be significantly affected as far north as Albert Road.

Due to interaction and scattering some localised poor reception can also be expected in the Primrose Hill area particularly in the shadow areas; however it should be noted that this cannot be totally attributed to the development.

TV reception is not expected to be noticeably affected to the north of Chalk Farm Road.

For the analogue transmission the vision is on a carrier at the bottom of the channel with the sound on a separate carrier at the top of the channel. The digital signal, however, is a composite of signals spaced at intervals right across the channel slot so it occupies the whole of the channel frequency allocation.

This means that the centre frequency of the channel is the same for both analogue and digital and the effects of the development can be expected to affect both analogue and digital TV reception in the surveyed area.