

Tense Nervous Headaches? (a tour of Crystal Palace hotspots)

Organised by Dave Miller

http://dev1.manme.org.uk/~davem/tense_nervous_headaches/

1. What's the project about?

On 1st September, starting at 12 midday, two public exploratory walks around Crystal Palace, measuring the radiation levels. Each walk lasts 1.5 hours. The story of each mast will be told, along with technical data and known medical effects of the radiation.

Participants will be encouraged to measure radiation levels and draw on maps, to contribute to a collaborative artwork - a poster sized map of local radiation. The intention is to print these and sell them locally.

The data collected will be combined later with more detailed measurements into an online application using Google Maps, so that you can zoom in and out of a map of the area and view the radiation levels in detail.

2. What are the aims of this project?

On the day:

- a. To map the mobile phone radiation in the Crystal Palace area, with the Triangle as the centre
- b. To measure levels near the masts, and near schools

Long term aims:

- a. To raise awareness about local radiation
- b. To act as a catalyst for further investigations
- c. To create a local online facility showing local radiation levels, using Google maps, that people can update and manage themselves.

3. What the project will measure

Crystal Palace is the highest point in south London and probably for this reason has a high density of masts. Just a quick look around and you'll see many masts with a staggering array of different types of dishes and aerials.

For this project I'm going to be making measurements using an Electrosmog Detector, courtesy of Nick Clough of Sensory Perspective. This looks like this:



Some tech info:

This new 'broadband' detector exposes and converts the electromagnetic impulses it encounters into a collection of sounds (buzzing, screeching, pulsing) that is far more varied and illuminating than the 'click' of a geiger counter. You can hear the amount, type, amplitude, and quality of the pulsed electronic pollution created by local transmitters/emitters operating between 50MHz and 3000 MHz, and enjoy the silence when the environment is clear. Hearing is believing!

This detector will measure mobile phone and wireless radiation, but the sounds are very different. For these walks I'll be concerned with measuring mobile phone radiation only.

The next question is how accurately can we measure it?

Basically - using this device, the louder the sound the more intense the radiation. I intend to separate the intensities into 4 categories: none(hardly any), low, medium, high.

This is obviously subjective, but the purpose of this project is to give an indication of the levels, not make exact scientific measurements (in fact the intensities we measure will also depend on the amount of call-traffic at different times of the day).

I want to generate awareness, and encourage more detailed examination after this project.

4. What we plan to do on the walks

The idea is to follow two routes, and map the mobile radiation level. The area covered will centre around Crystal Palace Triangle, a small triangle of streets at the centre of Crystal Palace, but also two major masts are included at the edges of Crystal Palace, and detours are made to cover two local primary schools.

We'll be carrying a large map of the route, and will stick coloured dots on the map to show the intensities at each point measured.

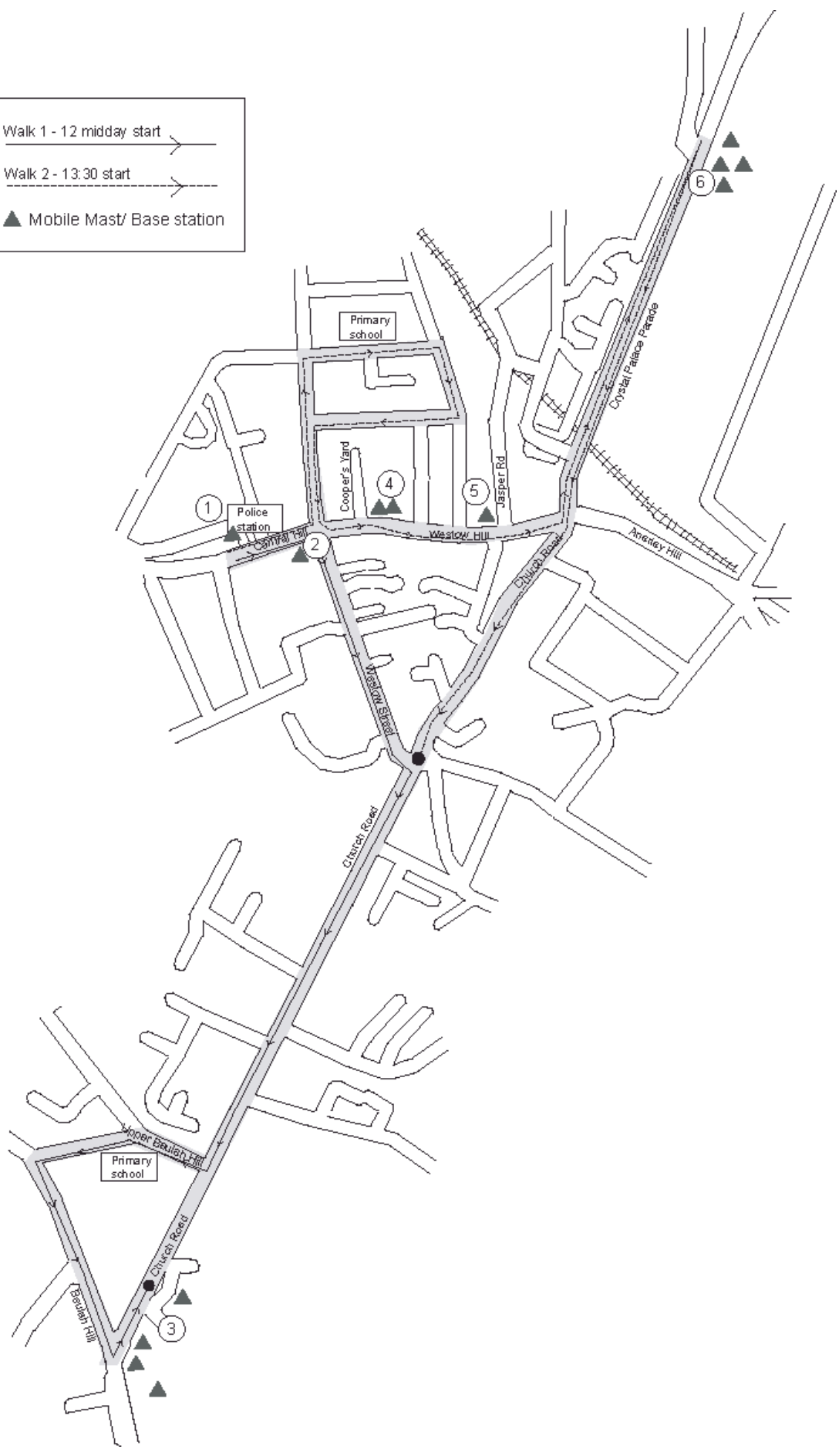
5. Where the walks go

The map of the route is shown on the following page:

Walk 1 - 12 midday start →

Walk 2 - 13:30 start →

▲ Mobile Mast/ Base station



The mobile phone masts marked on this map are taken from an Ofcom website called sitefinder:

<http://www.sitefinder.ofcom.org.uk/>. This website is useful, and a good starting point, but sadly out of date, due to a legal dispute between the mobile phone companies and Ofcom.

Already I have discovered a number of base stations (transmitters) not included, and for sure as we walk around the area we will discover more. I hope these walks will have an exploratory nature, and let's see what we find out.

6. Sitefinder info

The following pages list the mobile base stations (mobile transmitters) given by sitefinder for each of the mast locations marked on the previous map.

Site 1



2 transmitters found at this site:

Name of Operator -- Vodafone
Operator Site -- Ref.4733
Station Type -- Macrocell
Height of Antenna -- 18 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 24.58 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- Vodafone
Operator Site Ref. --- 4733
Station Type -- Macrocell
Height of Antenna -- 18 Metres

Frequency Range -- 2100 MHz
Transmitter Power -- 27.9225 dBW
Maximum licensed power -- 32 dBW
Type of Transmission-- UMTS/3G

How long has each transmitter been there?

I've asked Lambeth Council for information on what's on this roof, and am waiting for a response.

Notes:

Judging by my (recent – from Aug 2007) photo there seems to be a Tetra transmitter as well. This isn't mentioned on sitefinder, and is a controversial technology - more on the health issues later.

Site 2



Name of Operator -- T-MOBILE
Operator Site Ref. -- 90649
Station Type -- Macrocell
Height of Antenna -- 21 Metres
Frequency Range -- 1800 MHz
Transmitter Power -- 26 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

How long has each transmitter been there?

I believe approximately five years - from my own memory. I can't find official records of this.

Notes:

From croydon council planning records:

"Siting of an additional 2 antennas attached to existing mast and erection of ancillary equipment cabinet - 26/01/2006 (Vodafone)" - note this isn't mentioned on siterfinder. So there seem to be at least 2 transmitters on this mast.

These transmitters are directly behind some flats and some meters away from a big residential Council block.

Site 3 (Forsythe Crescent)



Base station

Name of Operator -- Orange
Operator Site Ref. -- GLN0806
Station Type -- Macrocell
Height of Antenna -- 40 Metres
Frequency Range -- 1800 MHz
Transmitter Power -- 27.1475 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- Orange
Operator Site Ref. -- GLN0806

Station Type -- Macrocell
Height of Antenna -- 40 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 27.34 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

How long has each transmitter been there?

Don't know.

Notes:

This seems to be placed on the roof of a residential block.

Mast HEIGHT is terribly important - the power and range of them increases dramatically with height and the operators are only given planning permission for one of certain heights... there have been many cases where this height has been contested - the mast itself may only be 15m, but it is then cleverly built on a plinth that is an additional 3m high. Note that this antenna is at a height of 40m = BIG POWER & RANGE.

NTL Tower



Base station 1

Name of Operator -- O2

Operator Site Ref. -- 9264

Station Type -- Macrocell

Height of Antenna -- 17 Metres

Frequency Range -- 900 MHz
Transmitter Power -- 19.3 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- O2
Operator Site Ref. -- 9264
Station Type -- Macrocell
Height of Antenna -- 17 Metres
Frequency Range -- 1800 MHz
Transmitter Power -- 21.5 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- O2
Operator Site Ref. -- 9264
Station Type -- Macrocell
Height of Antenna -- 17 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 28.9 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

Base station 2

Name of Operator -- 3
Operator Site Ref. -- SE0050
Station Type -- Macrocell
Height of Antenna -- 25 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 30 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

Base station 3

Name of Operator -- Vodafone
Operator Site Ref. -- 10
Station Type -- Macrocell
Height of Antenna -- 27 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 21.24 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- Vodafone
Operator Site Ref. -- 10
Station Type -- Macrocell
Height of Antenna -- 17.6 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 30.15 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

How long has each transmitter been there?

Don't know.

Notes:

Wow! Imagine living here - this seems to have everything on it.
NTL -hell? Some of these base stations are high up, so high
powered and big range.

Site 4

Name of Operator -- O2
Operator Site Ref. -- 7300
Station Type -- Microcell
Height of Antenna -- 6.8 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 5.4 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- Vodafone
Operator Site Ref. -- 46789
Station Type -- Microcell
Height of Antenna -- 3 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 7.15 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

How long has each transmitter been there?

Don't know.

Notes:

I couldn't find these transmitters - microcells are small and often
hidden.

Site 5

Name of Operator -- Vodafone

Operator Site Ref. -- 46790

Station Type -- Microcell

Height of Antenna -- 2 Metres

Frequency Range -- 900 MHz

Transmitter Power -- 7.15 dBW

Maximum licensed power -- 32 dBW

Type of Transmission -- GSM

How long has each transmitter been there?

Don't know.

Notes:

I couldn't find these transmitters - microcells are small and often hidden.

Site 6 -- CP Tower



Base station 1

Name of Operator -- T-MOBILE

Operator Site Ref. -- 60249

Station Type -- Macrocell

Height of Antenna -- 24 Metres

Frequency Range -- 1800 MHz

Transmitter Power -- 26 dBW

Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- T-MOBILE
Operator Site Ref. -- 60249
Station Type -- Macrocell
Height of Antenna -- 24 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 18 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

Base station 2

Name of Operator -- Vodafone
Operator Site Ref. -- 4924
Station Type -- Macrocell
Height of Antenna -- 30 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 25.18 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- Vodafone
Operator Site Ref. -- 4924
Station Type -- Macrocell
Height of Antenna -- 24 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 27.3115 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

Base station 3

Name of Operator -- O2
Operator Site Ref. -- 3426
Station Type -- Macrocell
Height of Antenna -- 25 Metres
Frequency Range -- 900 MHz
Transmitter Power -- 19.8 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- GSM

Name of Operator -- O2
Operator Site Ref. -- 3426

Station Type -- Macrocell
Height of Antenna -- 25 Metres
Frequency Range -- 2100 MHz
Transmitter Power -- 28.3 dBW
Maximum licensed power -- 32 dBW
Type of Transmission -- UMTS/3G

Base station 4

Name of Operator -- O2
Operator Site Ref. -- MTR207/O
Station Type -- Macrocell
Height of Antenna -- 25 Metres
Frequency Range -- 400 MHz
Transmitter Power -- 21 dBW
Maximum licensed power -- 25 dBW
Type of Transmission -- TETRA

How long has each transmitter been there?

Don't know, but the tower was constructed in the mid-1950s on the site of the old Crystal Palace Aquarium, destroying the majority of it.

Notes:

The locals call this "our very own Eiffel Tower", and the previous photo gives this impression. Maybe it has a similar shape, but the mast certainly isn't there for tourists. Closer views show there's a lot of stuff on there:



As well as all the mobile and a cocktail mixture of other transmitters, this tower also houses television transmitters. Over 4 million Joules (4 megawatt seconds) of energy is radiated every

second from this transmitter tower .. enough to power 40,000 100 W light bulbs .. and that's just from the UHF TV antennas.

Today, the tower broadcasts 625-line UHF TV, VHF FM radio, DAB (Digital Audio Broadcast) and DTT (Digital Terrestrial Television) signals in addition to providing transceiver sites for GSM, UMTS/3G and TETRA mobile radio services and private business radio communications. The site also hosts three MF AM broadcast transmitters and a VHF amateur radio repeater, GB3SL (145.65 MHz).

The station carries the London regions of BBC One, BBC Two, ITV1 and Channel 4 in analogue, each with an effective radiated power of 1 MW, as well as all six digital terrestrial television multiplexes. These have an ERP of 20 kW, with considerable beam tilt to the south and east. Although DTT requires far less power to achieve the same coverage as analogue TV, this 17 dB difference is too large to ensure comparable coverage. The station therefore has a range of about 30 miles (50 km) for DTT, compared with about 60 miles (90 km) for analogue. The tower is also used for FM radio transmission of several local radio stations BBC London 94.9, XFM, Choice FM and Virgin Radio, as well as a low powered relay of the 4 BBC national FM services and Classic FM. It also has mediumwave transmitters on 558 kHz (Spectrum Radio), 720 kHz (BBC Radio 4) and 1035 kHz (Kismet Radio). Since the tower is grounded, a wire aerial spun close to it is used for the MW services. Since 1995, the tower has also been in use as one of five London transmitters for the BBC DAB multiplex. This was joined in 1999 by the Digital One DAB service, and a further local DAB multiplex has also since started transmitting. In May 2006, Crystal Palace began broadcasting the first terrestrial HDTV signals in the UK. This is to enable a trial group of 450 London homes to test HD broadcasts by the BBC, ITV, Channel 4 and Five, in order to assess the viability and potential problems of future nationwide HD broadcasting.

Future developments

The UK Government's plans for digital switchover are based on the use of almost all of the UK's current analogue TV transmitter sites. As such, Crystal Palace is expected to remain a key part of the network when the London area is switched over in 2012. In July 2007 it was confirmed by Ofcom that Crystal Palace would be remaining an A group transmitter after DSO (Digital Switchover).

7. Some info on mobile transmitter types

There are two main types of base stations in Crystal Palace: macrocells and microcells. Here's a quick description:

Macrocells

The antennas for macrocells are mounted on ground-based masts, rooftops and other existing structures, at a height that provides a clear view over the surrounding buildings and terrain. A macrocell is normally a mast or other structure supporting a large antenna designed to give coverage over a large area. They look like this:



Microcell

Microcells provide infill radio coverage and additional capacity where there are high numbers of users within urban and suburban macrocells. The antennas for microcells are mounted at street level (i.e. below the surrounding buildings and terrain) typically on the external walls of existing structures, lamp-posts and other street furniture.

Microcell antennas are smaller than macrocell antennas and when mounted on existing structures can often be disguised as building features:



8. Some info on mobile transmitter technologies

Technologies in use in Crystal Palace

The cellular technologies in operation are: GSM and UMTS/3G (otherwise called 3G) and Tetra. They use the following frequencies:

GSM- Vodafone and O2: 900MHz

GSM - Orange & T-mobile: 1800MHz

3G: 2100-2400 MHz

Tetra: 410 - 430 MHz

GSM (or 2G)

This stands for 'Global system for Mobile Communications' and is the international, operating standard for the current generation of digital cellular mobile communications. Enables mobile phones to be used across national boundaries. GSM systems are operated by O2 and Vodafone at 900 and 1800 MHz, and by T-mobile and Orange at 1800 MHz.



UMTS/3G

Universal Mobile Telecommunication System

This is the next evolution of mobile phone technology and expected to result in widespread use of video phones and access to multimedia information. The UK govt wants all the 3G systems in place by end of 2007.



Foto: Jan E Carlsson Pressens Bild

Tetra

TETRA is a mobile radio technology that is being used for a new emergency services comms system, for police, fire, ambulance, installed throughout the UK by the Home Office.

The system is called Airwave, and in England and Wales the network of masts is being installed by a part of O2.



TETRA, like mobile phone systems, uses masts (or 'base stations') and handsets that look very like a chunky mobile phone. The masts usually have three poles, and each pole usually has four flattened loops. Some antennae are straight.

TETRA is a microwave system, like ordinary mobile phones, but the masts 'talk' to each other directly. Unlike mobile phone masts, they transmit constantly, 24 hours a day.

9. Some health studies on mobile transmitter radiation

How far away from a mobile phone mast is safe?

As with substations and powerlines, this is an impossible question to answer simply. Each situation is different from another; there may be one or more operators on a mast; they are likely to be at different heights; have different signal strengths and different antenna design and angle of tilt. The geography of the surrounding area will be unique with hills and / or buildings in the immediate environment. Different building materials can absorb and reflect the microwaves, as can metal structures like lamp posts.

There has been very little research into the health effects of microwave exposure. Most of it has been to do with mobile phones. Frequent phone use is being increasingly linked to brain tumours and other cancers. The sort of radiation you get from mobile phone masts or base stations has not been scientifically investigated, but nearby residents are increasingly reporting a variety of health effects, including serious illnesses. As with low frequency radiation, the only way to find out the level of exposure in a particular place, such as a house, school, or workplace is to measure the microwave radiation.

How far away do you need to be from a mobile phone mast (base station) to be safe?

Base stations are very variable, in height and equipment, as is the local geography. There are 'hot spots' of radiation near to the mast, as well as the main beam pointing outwards. Microwaves are absorbed by and reflect off buildings, and metal objects. The new 3G systems (with photos and videos) and the TETRA system (used by the police) seem to be more biologically active than the old 2G networks, and more people experience symptoms of ill-health, sleep disturbance, headaches, tiredness, etc. The only way of finding out what the exposure level is likely to be in any one spot is to measure it.

"Conclusions and recommendations: Inhabitants living nearby mobile phone base stations are at risk for developing neuropsychiatric problems and some changes in the performance of neurobehavioral functions either by facilitation or inhibition. So,

revision of standard guidelines for public exposure to RER from mobile phone base station antennas and using of NBTB for regular assessment and early detection of biological effects among inhabitants around the stations are recommended.” (from: Subjective symptoms, sleeping problems, and cognitive performance in subjects living near mobile phone base stations (from “Neurobehaviorial effects among inhabitants around mobile base stations.” G. Abdel-Rassoul et.al.– Wikipedia: http://en.wikipedia.org/wiki/Mobile_phone_radiation_and_health#note-27)

GSM Health studies

"A European cancer researcher has warned that we may not know whether there are any health risks in GSM mobile comms before the technology is obsolete. Prof Challis said that mobile phones are subjecting human beings daily to radiation that they have never been exposed to before. Headaches, blackouts, short memory and sleep disruption continue to feature among the claims of worried GSM users.” June 12, 2001
(http://www.mwee.com/mwee_news/showArticle.jhtml?articleID=17301134)

"Another area of worry about effects on the population's health have been the radiation emitted by base stations (the antennas on the surface which communicate with the phones), because, in contrast to mobile handsets, it is emitted continuously and is more powerful. Due to the attenuation of power with the square of distance, field intensities drop rapidly with distance away from the base of the antenna. A 2002 survey study by Santini et al. found a variety of self-reported health effects for people who reported that they were living within 1,000 feet (325 meters) of cell towers in rural areas; or within 300 feet (100 meters) of base stations in urban areas. Fatigue, headache, sleep disruption and loss of memory were among the effects found. Many measurements and experiments have shown that transmitter power levels are relatively low - in modern 2G antennas, in the range of 20 to 100 watts, with the 3G towers causing less radiation than the already present 2G network. An average radiation power output of 3 watt is used. 'Micro-cell geometries' inside cities have decreased the amount of radiated power even further. The radiation exposure from these antennas, while generally low level, is continuous. Some scientists believe that chronic, low-level radiation exposure may, over time, may be as harmful as higher-level, acute radiation

exposures.

(from Wikipedia -

http://en.wikipedia.org/wiki/Mobile_phone_radiation_and_health)

A 2004 study in Israel (see study), published in the International Journal of Cancer Prevention, found an **increased risk of women developing cancer was 10 times higher in the group of 622 people who lived within 350 metres of a 10 metre high GSM mobile phone mast**, compared with 1222 similar people who lived further away from the mast (with similar housing, lifestyles, etc). Other effects have also been reported,

3G health effects/ studies

"Exposure to radio signals from 3G cellphone base stations can cause headaches and nausea, finds new work from a Dutch research organisation. However, both independent and industry experts are sceptical about the results and the researchers themselves admit surprise at their findings. The government-backed research is the first to compare how current GSM phone signals and next generation, or 3G, signals may affect cognitive functions. The study involved exposing two sets of 36 volunteers to signals simulating those from base stations. One group consisted of people who had previously reported feeling effects from base stations, while the other group had no history of complaint. In both groups, they found a significant relationship between exposure to the 3G signal and detrimental effects on general "well-being", characterised by feelings of nausea, tingling and headaches. No such relationships were found for GSM exposure. Both 3G and GSM signals affected cognitive functions in some cases, including reaction times, memory and alertness." (From New Scientist 2003)

Tetra health effects/ studies

1. TETRA has a rhythm of its own, its base station beat is 70.56Hz and its repetition frequency is 17.65Hz. Both are harmful frequencies, and are discernable not by fancy electronics, but by simple rectification of the microwave signal.
2. TETRA handsets have a sharp pulse at 17.65Hz, which is a key bio-frequency.
3. TETRA is persistent. Unlike mobile phone masts, TETRA masts are on full power 24/7. Phone masts are quieter at night, TETRA masts carry on the noisy party.
4. TETRA operates at 380MHz, which is more penetrative to buildings and tissues, than 900MHz GSM or up to 2.4GHz 3G

(UMTS/3G).

5. TETRA is an elliptically polarised signal, which is indicated in studies to be have more pronounced biological effects.

10. UK Safety Guidelines set too high

The UK guidelines are based on thermal effects, and this is irrelevant as the microwave radiation had biological effects.

The popular belief that adverse health effects can be induced only by the heating effect of *GSM* radiation is, however, a fallacy. *Firstly*, there is rather consistent empirical, anecdotal evidence from many countries that the health of some people is adversely affected in various ways when they are exposed to this kind of radiation, despite its intensity being **well below** existing safety limits based on *SAR* values. *Secondly*, whilst it is, of course, perfectly true that the occurrence of a non-thermal influence does not necessarily entail any adverse consequence for human health, there is, nevertheless, an undeniable consistency that cannot be ignored between the nature of many of these reported adverse health effects and the extensive portfolio of non-thermal effects that have been published in the peer reviewed, scientific literature during the last 30 years, which indicates that the kind of radiation now used in *GSM* telephony can and does affect alive organisms in various **non-thermal** ways, in accordance with the quite general (non-equilibrium) predictions of modern, non-linear biophysics. *Thirdly*, there is documented evidence. that long-term (involuntary) exposure to microwave radiation of an intensity intermediate between that realised near an active Handset and that found in the vicinity of a Base-station (but at slightly higher carrier frequencies than used in *GSM*) does causes serious illness, such as leukaemia and lymphoma, in certain exposed people.
(<http://www.powerwatch.org.uk/tech/hyland.asp>)

11. Electrical Sensitivity

Electrical Hypersensitivity (ES) is an illness that is both highly controversial and little understood. The symptoms are varied between sufferers, but are normally comprised from some of the following: Sleep disturbance, tiredness, depression, headaches, restlessness, irritability, concentration problems, forgetfulness,

learning difficulties, frequent infections, limb and joint pains, numbness or tingling sensations, tinnitus, hearing loss, impaired balance, giddiness and eye problems. In more extreme cases there have been reports of cardiovascular problems such as tachycardia, though these are relatively rare.

Many of the symptoms reported have a lot in common with multiple chemical sensitivity (MCS), and it is quite common for someone who suffers from one condition to suffer from the other. It seems quite sensible to theorise that both syndromes therefore may affect particularly susceptible members of the population only.

(from <http://www.powerwatch.org.uk/>)

12. Previous radiation health studies in Crystal Palace

A study into the effects of radiation from TV masts carried out in 1999 by Professor Gordon Stewart, one of Britain's leading epidemiologists, said this:

"One of the sites of concern is around the Crystal Palace mast in London. People in one area near the mast were found to be 33% more likely to suffer from cancer. Last November Barry Pepperdine, 14, a former pupil of Churchfields primary school in Beckenham, was found to have leukaemia. Just a few weeks before, he had won the local interschools 1500m race and dreamed of becoming an Olympic athlete. Lizzie Burningham, a close neighbour, is another former Churchfields pupil. Two years ago, aged 10, she, too, was found to have the disease. Living across the road is Jack Humberstone, 15. Two months ago his doctor told him he had cancer in the shoulder bone; his arm might have to be amputated. David Carr, 16, lives just round the corner. He is in remission from leukaemia. The four children live in a tiny triangle of streets about a mile from the 1,000ft Crystal Palace transmitter. Each year there are only 450 childhood leukaemia cases in Britain. The incidence near the south London mast is far higher than would be expected normally, according to the statistics."

13. Should we be concerned about ill health effects?

Just one recent example (of many):

In May 2007 BBC Panorama aired a programme on wifi and mobile phone radiation, and Sir William Stewart (Chairman of the UK's Health Protection Agency) made the following statements:

PAUL KENYON: You'd think our government would base its decisions on the advice of their top man, the one it employed to protect our health, Sir William Stewart, but instead it seems to have turned to others. First the World Health Organisation. It's robust in its language saying there were no adverse health effects from low level long-term exposure.

Is that an accurate reflection of the science do you think?

STEWART: I think they are wrong.

KENYON: How are they wrong?

STEWART: Because there is evidence, and the Stewart Report pointed out some of that evidence.

KENYON: So why do you think it is that the WHO, one of the most influential public health bodies in the world continues to put out that message?

STEWART: I think that they've got to review the statement that they're making.

KENYON: But in your view, not an accurate reflection of the science that's out there?

STEWART: I think it is not an accurate reflection.

The Panorama programme also noted that, "Switzerland, Italy, Russia, China, all have exposure limits thousands of times below ours. In Salzburg the government advises against WiFi in schools altogether.")

A particular big thanks to: Nick Clough of Sensory Perspective for his help and advice, and the loan of equipment for the project.