**Constantiaberg Bulletin, 1 Sep 2016**

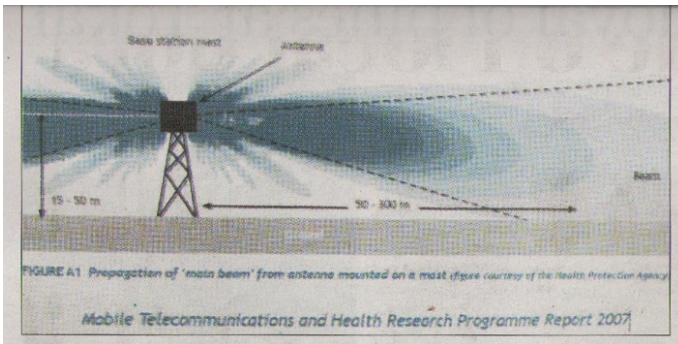
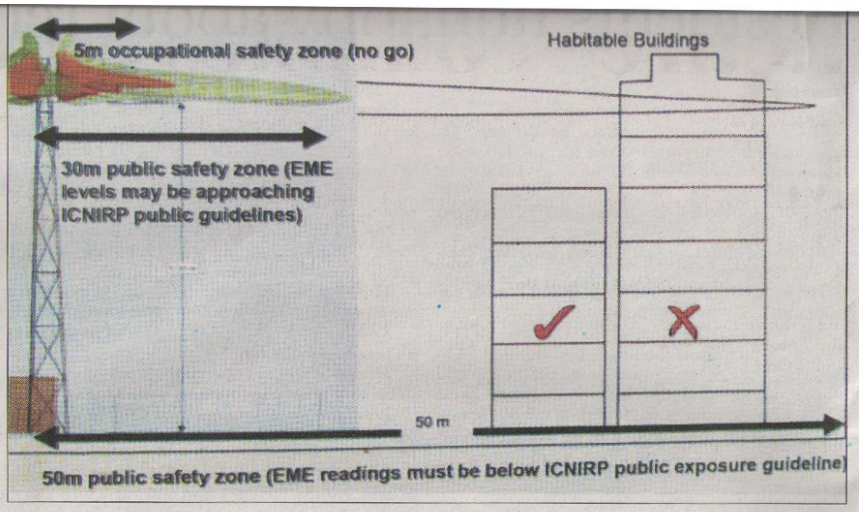



FIGURE A1 Propagation of 'mast beam' from antenna mounted on a mast (figure courtesy of the Health Protection Agency)

Mobile Telecommunications and Health Research Programme Report 2007

■ **Above:** Radiation from cell towers is typically small and reduces very rapidly from the antenna, by the square of the distance, as shown here – courtesy of the Health Protection Agency.




■ **Right:** The City of Cape Town regulations exceed the distance beyond the recommended ICNIRP recommendations where habitable building storeys exist in line with antennas.

# Engineers argue that EMR radiation is safe

KAREN WATKINS

Cell towers have drawn a lot of heat from a public fearing harmful effects from electromagnetic radiation, but two local electrical engineers argue there is nothing wrong with them and that global health authorities unanimously agree that electromagnetic radiation (EMR) from these masts is safe.

Cliff Court, an electrical engineer who lives in Tokai, says by discouraging cell masts in their neighbourhoods, alarmists are putting communities in danger because insufficient cellphone coverage means people won't be able to reach emergency services without a landline ("EMF from cell masts a 'hot chilli' to chew", Thursday June 30).

Mr Court is not advocating that the valley becomes festooned with cell masts, but he believes those opposing them on health grounds are "causing unnecessary distress to the community by spreading inaccurate or completely false information about cell masts and the electromagnetic waves associated with them".

Constantia resident Tony Heher is retired and has a doctorate in electrical engineering. Stressing that he has no connection, now or ever, with any communications company, he says fears about base station radiation are unfounded.

"One receives a million times more radiation from using a cellphone than from a mast. If anyone is concerned about radiation from a mast, then they should never use a cellphone – or even allow a cellphone in their house. And they should certainly never let any child use a cellphone," he says.

Mr Heher has done antenna design and radiation measurements. "So this is based on personal experience and measurement, not folklore. It all comes down to a simple square law," he explains. "Radiation reduces by the square of the distance, so the radiation from a 10 watt base station 100m away is 1 000 times less than from a 1 watt cellphone 1m away....and 10 million times less than from a cellphone 1cm from your head."

Armed with a file filled with scientific papers, reports from globally recognised specialists, Mr Court says he relies on international opinion on the subject and not scaremongers who "cherry pick information and make sweeping claims".

In wanting to remain transparent, Mr Court indicated that as part of his work, he develops software for iPhones and iPads (cellular dependent electronic devices) but has nothing to do with the mobile phone networks or cell mast companies. He says most international health authorities agree that there are no known health risks associated with electromagnetic radiation (EMR) from cell masts, based on the International Commission on Non-Ionising Radiation Protection (ICNIRP) public exposure standard. They include the World Health Organisation, Cancer US and British, Dutch Health and the Australian government.

Mr Court says the City of Cape Town cell mast policies take guidance from the national Department of Health, which has adopted the ICNIRP guidelines. In fact they have also adopted an extra precautionary approach with additional provisions such as extending the public safety zone distance beyond the recommended ICNIRP recommendations, where habitable building's floors exist in line with cell mast antennas.

Referring to the murder and rape of Franziska Blöchliger in Tokai Park ("Franziska remembered," Bulletin March 10), and the UCT rapist, Mr Court says it was reported that police detectives used data from cell masts to isolate the areas to search for the perpetrators.

Mr Court says the most popular misinformation used by alarmists is the BioInitiative Report of 2007 and 2012, at 610 and 1 430 pages respectively, claiming apparent effects of EMR on human and animal cells.

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# No scientific basis to link EHS symptoms to EMF exposure - WHO

From page 4

The Health Council of the Netherlands concluded that "the BioInitiative report is not an objective and balanced reflection of the current state of scientific knowledge". This report has also been discredited by the Australian Centre for Radiofrequency Bioeffects Research, European Commission's EMF-NET, German Federal Office for Radiation Protection, French Agency for Environmental and Occupational Health Safety and others.

Regarding electrosmog (the invisible electromagnetic radiation supposedly resulting from the use of both wireless technology and mains electricity), Mr Court says it does not exist. He says that when multiple electromagnetic waves do combine, they do not simply grow in size, but actually have as much chance of cancelling each other out. It is entirely different to smog where particles collect together to make a more dense atmosphere.

However, he concedes that some people react to certain conditions. He says the Rondebosch doctor, John Gardner, who is suffering with electromagnetic hypersensitivity (EHS) received some relief after having his teeth amalgams removed ("Debilitated by hypersensitivity," Bulletin July 28), Mr Court says he had heard of a very rare incident where a metal filling had managed to pick up a local radio station and the person had heard the station in their mouth – but this was a temporary annoyance, not a health risk, and easily fixed by a dentist.

"There are some cases where resonant frequency and conditions in the mouth acted as mini speakers," says Mr Court.

"The World Health Organisation's official stance on electromagnetic hypersensitivity is that it is not even a medical diagnosis. That people claiming EHS symptoms are indeed suffering, but according to WHO there is no scientific basis to link EHS symptoms to EMF exposure. Instead EHS symptoms are largely put down to being a psychosomatic disorder. WHO's official stance on EHS is that it has nothing to do with EMR from cell towers or wi-fi routers," says Mr Court.

Mr Heher says excessive use of cellphones held close to the head may be a risk, especially in children, but base stations are not a risk. He says the confusion between cellphone and base station radiation is common and widely misunderstood.

Mr Court says by not having enough cell masts in a local area, cellphones will typically generate more radiation into the ear as they search for a distance cell tower signal - the exact opposite of what the cell mast alarmists are striving for.

Mr Court says the earth, sun and the rest of the universe exposes us to different levels of EMR all the time. Paarl Rock is an example. "People living near the giant granite mountain are not only exposed to EMR, they are exposed to quite high levels of ionising radiation all the time. Yet there is nothing to suggest a high level of cancer or any other abnormal health problems specific to the Paarl area," says Mr Court.

He also provided data from the South Africa National Cancer Registry from 2008 to 2011 showing no significant increase in brain cancer cases had occurred in the country, even 14 years (1994 to 2008) or beyond after cell towers and phones had been introduced.

His advice is for the public to not base decisions on cell mast safety on the statements of one individual, such as himself, or a small group of alarmists. "Instead, they should look to the assessments of both global and government health authorities. Most authorities will always add that more investigation is required, because that's what rigorous researchers do, but, as research stands right now, there is no evidence to indicate health risks from cell masts," says Mr Court.