

Our ref: **CTIL_208044_VF_13307**

Head Teacher – Debbie Eccles
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25 January 2019

Dear Ms Eccles

PROPOSED BASE STATION INSTALLATION AT CTIL_208044_VF_13307 LAND AT VICTORIA ROAD CAR PARK, RUTHIN ROAD, WREXHAM, NORTH WALES, LL13 7TT NGR E: 332827 N: 349928

Thank you for the comments you sent me from some parents of the children who attend Victoria School, regarding the proposed telecommunications installation. I write to respond to the concerns raised.

Firstly, many of the concerns raised related to health. Radio base stations and handsets use electromagnetic fields (EMFs) to transfer information and make mobile phone communications possible. EMFs are used for television and radio transmissions, by the police, fire and ambulance services, by taxi firms and public utilities. EMFs are also used for a wide range of personal and commercial equipment from electronic car keys, WiFi equipment and baby monitoring devices to shop security tag systems. They are also produced by household electrical appliances like the fridges, vacuum cleaners or electric shavers.

Mobile phones and devices are new but the technology is not and research has been going on in this area for almost 75 years. After a thorough review of the available scientific findings, the World Health Organisation reported: *"To date, the only health effect from RF fields identified in scientific reviews has been related to an increase in body temperature (> 1 °C) from exposure at very high field intensity found only in certain industrial facilities, such as RF heaters. The levels of RF exposure from base stations and wireless networks are so low that the temperature increases are insignificant and do not affect human health"* [Source: World Health Organisation, Fact Sheet 304, Base stations and wireless technologies, 2006]. In addition, the WHO notes that *"Based on a recent in-depth review of the scientific literature, the WHO concluded that current evidence does not confirm the existence of any health consequences from exposure to low level electromagnetic fields"*. <http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html>

The Advisory Group on Non-ionising Radiation (AGNIR) summarised that *"although a substantial amount of research has been conducted in this area, there is no convincing evidence that RF field exposure below guideline levels causes health effects in adults or children."* "Health Effects from Radiofrequency Electromagnetic Fields – RCE 20", 2012

Radio base stations are designed to comply with the stringent, precautionary public exposure guidelines set out by ICNIRP (International Commission on Non-Ionizing Radiation Protection). These

guidelines have been developed following a thorough review of the science including both thermal and non-thermal effects. UK radio base station installations have been surveyed by independent bodies and found to be hundreds and sometimes thousands of times below these guidelines. In 2017 ICNIRP reaffirmed that their safety guidelines provide protection against all known health effects of radiofrequency signals.

As detailed in the pre-application consultation letter previously sent to the school, a certificate of ICNIRP compliance will be included within any planning submission made to the local planning authority. In fact, because of the very low power utilised by telecommunications sites the emissions will be many times lower than the ICNIRP threshold.

Calculations have been undertaken to estimate the highest possible frequency fields from the proposed installation (see attached Radio Frequency Assessment). It is assumed that all channels are transmitting at full power, 24 hours a day. This is a highly unlikely set of circumstances, so in reality, day-to-day measurements will be much lower. It is also assumed that there is no obstruction to the signal in the way of structural materials so levels inside buildings are typically reduced further by a factor of ten.

The calculations demonstrated that the highest exposure (beam of greatest intensity) from the proposed installation will be 0.7% of the ICNIRP guidelines, and would be located 95m from the proposed antenna at a bearing of 89 degrees (see attached Radio Frequency Assessment). Therefore the highest exposure from the proposed site will be well within the accepted ICNIRP guidelines.

A number of health factsheets have been attached with this letter for further information.

Concerns have been raised about the appearance of the proposed installation. As regards the appearance of the proposed mast, it is a simple, functional, slim-line column designed to resemble other linear structures often found in urban environments such as lighting columns. The antennas will be shielded from view within a shroud at the top of the column rather than an open head frame on a lattice tower. Whilst such a design would allow greater antenna efficiencies, the operator has compromised on maximising coverage to minimise the visual impact in the surrounding area, whilst still being able to accommodate meaningful service provision.

The column height of 15m is essential in order to clear the urban clutter and tree canopy in the immediate area. If the column were to be any lower in height it would not be able to reach the target coverage area and an additional installation would still be required.

The proposed equipment cabinets are also designed to resemble other statutory undertakers' equipment cabinets which are also common in urban areas, such as BT Openreach.

Concerns have been raised in relation to the impact on the operation of the car park. The proposed installation will not remove any existing car parking spaces. The siting has been carefully chosen to be nestled between existing trees and bushes on the edge of the car park. Therefore there will be no impact on the day to day operation of the car park. The two trees which are proposed to be removed to facilitate the development are more akin to bushes than trees, and are not protected, the other trees and bushes will remain in situ and will provide some screening.

Access to the site will be through the existing car park entrance. The installation of the pole will be outside of school drop off and pick up times at the beginning and end of the day. As regards maintenance and repair, once installed the radio base station needs to be serviced very infrequently. This entails an engineer going to site with hand tools only. The antennas can be serviced remotely. In the unlikely event of an antenna malfunction, a cherry picker located at the base of the column to access the antennas will be required.

Concerns have been raised regarding the noise from the proposed mast. Antennas do not emit any noise, so there will be no noise disturbance in this respect. The equipment cabinets contain air conditioning units, which only become operational during hot days. The operators install equipment cabinets in many different occupied areas. The majority of sites experience no noise issues. In rare cases where noise disturbance is experienced these are addressed by the operators.

3 alternative site options have been suggested, these have been fully investigated by the operators radio engineer and acquisition specialists. None of these proposed alternative sites are suitable for the reasons as described below:

Alternative Siting Option 1 – The waste ground to the side of the railway – The operator's radio engineer has discounted this site due to its proximity to the railway line as it would detrimentally compromise services that could be provided to its customers. This is because the operators U900 UMTS (3G) frequencies operate too close to the GSMR network frequencies that Network Rail use and therefore unacceptable interference would be encountered rendering both operators 3G service provision poor. As a result Vodafone would not be able to provide 3G technology, which is still a critical service within their network.

Option 1 would also not be able to be built in this location as Network Rail insists on a 1.5 x column height fall distance away from the railway line. As such, a site in this location is also discounted by the operators build engineers as there is insufficient distance from the railway line to provide a fall safe distance.

Alternative Siting Option 2 - close to the corner of the cemetery near the Bersham Road bridge. The operator's radio engineer has also rejected this location as being operationally unfeasible for the same reasons as already set out in Option 1 above. Namely the site would be too close to the railway line and therefore would detrimentally interfere with Network Rails own network. As a result Vodafone would not be able to provide 3G technology, which is still a critical service within their network.

Alternative Siting Option 3 - other side of the allotments (nearer the railway bridge on Ruthin Road) - The operator's radio engineer has also rejected this location as being operationally unfeasible for the same reasons as already set out in Option 1 above. Namely the site would be too close to the railway line and therefore would detrimentally interfere with Network Rails own network. As a result Vodafone would not be able to provide 3G technology, which is still a critical service within the network.

I trust that the above information is of assistance at this time.

Yours Sincerely

A handwritten signature in blue ink, appearing to read "J. Hann".

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(For and on behalf of CTIL and Vodafone Ltd)

Enc. Health documents