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# aurecon

4 September 2009

Dear Sir/Madam

**Notification of a proposed mobile telecommunications facility installation at 27 Gerler Street, Bardon QLD (Lots 1 to 6 on BUP11755)**

I am writing to formally advise you that Telstra is proposing to install a new mobile telecommunications facility at 27 Gerler Street, Bardon (further details attached).

The facility is designed to ensure continuous quality local services on our new Next G™ Network - the fastest and geographically largest national mobile broadband network in the world. The Next G™ network provides customers with all existing, essential mobile services, as well as live video calling, video-based content services including news, finance and sports highlights, and a high-speed, wireless internet service via the mobile phone network - Wireless Broadband.

For your reference we have attached an information sheet, containing:

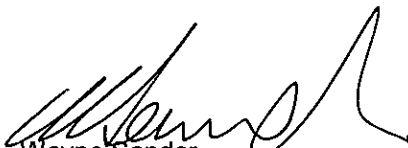
- A photomontage of the proposed facility
- Details of the proposed facility
- Answers to commonly asked questions regarding mobile phone base stations (mobile phone facilities) and electromagnetic emissions (EME)
- Details on the consultation process, including details on how to provide your comments, and
- References to information on EME

In addition, we also attach:

- Contact details and legislative compliance sheet, and
- Summary of estimated EME levels around the proposed mobile phone facility

If you have any further queries regarding the proposed installation, please contact Heidi Minto directly on 07 3173 8731 or by email on [mintoh@ap.aurecongroup.com](mailto:mintoh@ap.aurecongroup.com)

Yours faithfully



Wayne Sander  
Executive

Enc: Attachment A Community information sheet  
Attachment B Contact details and legislative compliance  
Attachment C Summary of estimated EME levels



# PROPOSED TELECOMMUNICATIONS FACILITY AT 27 Gerler Street, Bardon

Telstra Corporation Ltd is writing to formally advise you that Telstra is proposing to install a new telecommunications facility on the rooftop of the building at 27 Gerler Street, Bardon (Lots 1 to 6 on BUP11755).

This facility is required to host new mobile phone antennas due to the decommissioning of an existing site in the local area.

The facility is designed to provide continuous quality local services on our new Next G™ Network - the fastest and geographically largest national mobile broadband network in the world. The Next G™ network provides customers with all existing, essential mobile services, as well as live video calling, video-based content services including news, finance and sports highlights, and a high-speed, wireless internet service via the mobile phone network - Wireless Broadband.

Full details of the proposed facility are attached for your reference, however briefly; Telstra is proposing:

- The installation of six panel antennas, 2.12m in length, at an approximate height of 10.31m (to the centre-line of the antennas) mounted on the existing building support frame, set behind the edge of the building parapet at 27 Gerler Street, Bardon
- Underground conduits for cables
- Screening of the proposed facility
- Equipment associated with the proposed facility will be located within an existing room on the ground floor of the building.

The photos below provide a photomontage (indicative only) to demonstrate the likely visual impact of the proposed facility.

Before



After



View from the intersection of Boundary Road and Selby Street, Bardon  
Please note that the 'Before' and 'After' photos are a concept of the likely visual impact of the facility and are indicative only

Refer to the back page for details on how to have your say

## Site selection

Telstra tries hard to strike a balance between providing services that we know people use every day and finding good local solutions for our equipment.

Telstra has canvassed the area of Bardon in search of the most appropriate and available site for the telecommunications facility. In searching for a new location, Telstra initially identified seven potential candidates, which were narrowed down to three candidates after undertaking preliminary site checks.

After further, more detailed investigations, one of these candidates was rejected because the site was deemed unable to achieve coverage to the desired area. One other candidate was rejected because Telstra could not establish a lease with the Body Corporate for the building. Of the three candidates, the only viable option is the proposed site at 27 Gerler Street, Bardon.

When selecting a site, Telstra considers the following factors in accordance with Section 5.1 of the *Industry Code for the Deployment of Mobile Phone Network Infrastructure* (ACIF Code):

- The reasonable service objectives, including the area the planned service must cover, the power levels needed to provide quality of service, and the amount of usage the planned service must handle
- Minimisation of EMR exposure to the public
- The likelihood of an area being a community sensitive location
- The objective of avoiding community sensitive locations
- The relevant state and local government telecommunications planning policies
- The outcomes of consultation processes with Councils and communities set out in Section 5.5
- The heritage significance (built, cultural and natural)
- The physical characteristics of the locality, including elevation and terrain
- The availability of land and public utilities
- The radiofrequency interference the planned service may cause to other services or that the planned service could experience at that location from other services or sources of radio emissions
- Any obligations and opportunities to co-locate facilities
- Cost factors

**Telstra is mindful of the residents both within the building onsite and within the nearby buildings. Telstra endeavours to avoid residential areas where possible, however given the above considerations, it has not been possible to avoid locating within the residential area at Bardon.**

**The residential area of Bardon is particularly large in size and there is a lack of alternative land uses (eg existing utility structures or industrial/commercial areas) located within the target area for the facility to be located within.**

**The proposed facility has been designed to avoid potential negative impacts that could be created by a free-standing telecommunications tower, by designing a smaller facility on the rooftop of an existing building, where it can still reach a height to provide the desired coverage.**

## Why is this facility required?

Telstra currently provides reliable mobile phone and wireless internet service to the area of Bardonia through a number of telecommunications facilities in the area. The base station that accommodates one of these key telecommunications facilities needs to be decommissioned due to the redevelopment of the site in which it is located. To continue to provide ongoing quality mobile phone and wireless internet coverage to your area, Telstra needs to establish a new telecommunications facility in place of the old one.

Many residents wonder why mobile network carriers chose to locate antennas near residential areas – or at specific locations. To understand this, it is important to understand a little of how a mobile network works.

A mobile communications network is made up of a patchwork of cells, each relying on its own set of antennas. Each set of antennas provides coverage to a small local area, or “cell”. When you make a call, your handset will always “talk” to the nearest set of antennas to you – as you move around, the phone will “talk” to different sets of network antennas, whichever is the closest, or the least congested.

If you have ever experienced a call drop out – or been unable to make a call – that’s because you’ve gone into an area of the network that experiences poor or unreliable service. There are three main factors that cause poor service.

Firstly, you may be too far away from antennas to pick up a phone signal – or there may be objects blocking the signal from the nearest antennas – such as hills, large buildings or even trees. Secondly, a facility typically handles less than 100 simultaneous calls at any one time. If the facility is already congested with calls – you may not be able to make a call if the adjacent facilities are also congested or too far away. This is referred to as network capacity. Insufficient capacity in areas of high call demand can cause poor service. Thirdly, the depth of coverage – or the ability to make calls inside buildings, may be insufficient in some local areas.

In order to provide reliable, continuous network coverage, which is the basic expectation of our customers and of any mobile phone users, we need to install many low-powered antennas across the city to pick up phone signals.

Visit the EMF Explained Series Website to view an animation of how mobile phone networks operate: <http://www.emfexplained.info/?ID=24794>



Source: EMF Explained Series Website

## Radiofrequency energy in the everyday environment

Telecommunications facilities emit radiofrequency electromagnetic energy (EME) as “radio waves”. Other radio wave signals transmitted by communications facilities include TV signals, AM and FM radio signals, taxi service signals, paging network signals, emergency service communications, and police two-way radio.

Radiofrequency EME is something we've been living with for generations – literally since the invention of “the wireless”. AM and FM radio transmitters typically account for more radiofrequency EME in the environment than all other sources put together, including all mobile phone facilities.

All mobile network facilities contribute a very small fraction of radiofrequency energy in the environment, because the transceivers themselves are extremely low powered, and provide coverage to relatively small areas (typically several kilometres). Telstra's antennas typically require about 60W of power to operate - less than many household light globes. By comparison, a commercial AM radio transmitter requires 100,000W of power to operate.

There are many sources of radiofrequency energy in the everyday urban environment. For example, baby monitors and cordless phones also communicate between handset and base via radiofrequency signals. This is on a much smaller scale to mobile network phones (because the handset is closer to the base at any given time), and on a massively smaller scale to radio and TV broadcasts, where transmitter towers must be powerful enough to send a signal many kilometres away.

Radiofrequency transmitters, including mobile networks and commercial radio and TV broadcast towers, are regulated for their environmental performance. Specifically, environmental regulations are in place to limit the power of the radiofrequency signals we are transmitting.

## What is EMF?

EMF is short for electromagnetic fields or sometimes known as electromagnetic radiation (EMR) or electromagnetic energy (EME). Electromagnetic fields are present everywhere in our environment – the earth, sun and ionosphere are all natural sources of EMF.

Electric and magnetic fields are part of the spectrum of electromagnetic energy which extends from static electric and magnetic fields, mains power frequencies (50/60Hz) through radiofrequency, infrared, and visible light to X-rays.

Electromagnetic fields are also created whenever an electrical appliance is connected to the mains supply, including many in daily use such as refrigerators, hairdryers and computers.

Many electrical appliances don't just create EM fields – they rely on them to work. Television and radio, mobile and cordless phones, remote control handsets, baby monitors and the communication systems used by emergency services all communicate using Radio Frequency EM fields. So do wireless technologies such as WiFi, which is increasingly used by computer networks, to connect to the internet.

## Safety regulations and mobile phone base stations

Australia has adopted the radiofrequency safety regulations recommended by the World Health Organisation (WHO), which are also applied in the United States, United Kingdom and European Union.

The safety regulations operate by placing a limit on the *strength* of the signal (or radiofrequency EME) that we can transmit. They are not based on distance, or creating “buffer zones” for residential areas. The environmental standard limits the network signal strength to a level low enough to protect all people, in all environments, 24-hours a day. The safety limit itself, recommended by the WHO, has a significant safety margin, or precautionary approach built into it.

That is why telecommunications facilities are permissible in any environment, including on apartment buildings and hospitals, and even within schools grounds.

Telstra relies on the expert judgement of independent public health authorities, such as the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), and the WHO for assessments of safety and health impacts of radiofrequency transmitters. The WHO advises the following:

*“To date, all expert reviews on the health effects of exposure to RF [radiofrequency] fields have reached the same conclusion: there have been no adverse health consequences established from exposure to RF fields at levels below the international guidelines...” (ICNIRP, 1998) [WHO Clarification Statement: Children & Mobile Phones, 2005]*

In another community fact sheet, the WHO puts the impact of mobile base station antennas into context with other sources of radiofrequency EME in the environment:

*“Due to their lower frequency, at similar RF [radiofrequency] exposure levels, the body absorbs up to five times more of the signal from FM radio and television than from base stations...Further, radio and television broadcast stations have been in operation for 50 or more years without any adverse health consequence being established.” [Electromagnetic Fields and Public Health: Base Stations and Wireless Technologies, 2006]*

You may be interested to know that Telstra has located facilities on more than 40 hospitals across Australia. We hope that their confidence in the safety of our facilities gives other people a similar level of confidence.

## How does the Bardon proposal measure up against the safety limit?

ARPANSA has created a report for mobile network carriers like Telstra to demonstrate their compliance with national safety standards.

An Industry Code of Conduct requires Telstra to provide this report to Council and make it publicly available.

The Environmental EME Report is attached for your reference. It is important to understand that the report predicts the maximum signal strength from the proposed facility – assuming that it is handling the maximum number of phone calls possible 24-hours a day.

In reality, the facility, and mobile phone handsets are designed to operate at the lowest possible power. Once a call has been established, the base station and handset reduce their power automatically to the lowest level required to maintain a connection. This is known as “*adaptive power control*”. However, ARPANSA requires us to show the **maximum** signal strength to give the community peace of mind about the greatest possible impact that the antennas could have on the environment.

The attached report provides two sets of predicted EME levels. One set estimates the EME levels at a number of the closest residences, taking into account the differences in ground level between the proposed facility and each of the residences. The maximum predicted EME level at any point within the nearest residential building (25 Gerler Street) is just **9.14%** of the allowable public health and safety limit.

The other set of predicted EME levels estimates EME levels in 360 degree circular bands around the proposed facility at a height of 1.5 m above ground level, assuming level ground. Taking into account these factors, it is concluded that the maximum signal strength at any distance from the proposed telecommunications antennas at Bardon is just **5.54%** of the allowable public health and safety limit.

## Where can I find further information about EMF?

**Commonwealth Government – Australian Radiation Protection and Nuclear Safety Agency**  
<http://www.arpansa.gov.au/RadiationProtection/index.cfm>

**EMF Explained Series**  
<http://www.emfexplained.info/>

**Commonwealth Government – Australian Communications and Media Authority**  
[http://www.acma.gov.au/WEB/STAN/DARD/pc=PC\\_1746](http://www.acma.gov.au/WEB/STAN/DARD/pc=PC_1746)

**World Health Organisation**  
[www.who.int/peh-emf](http://www.who.int/peh-emf)

**EME Series Fact Sheets:**  
<http://www.arpansa.gov.au/eme/index.cfm>

[Prepared by the Committee on Electromagnetic Energy Public Health Issues, including representatives from the Department of Broadband, Communications and the Digital Economy (DBCDE), ARPANSA, the Australian Communications and Media Authority (ACMA) and the National Health and Medical Research Council (NHMRC).]

**Telstra**  
[www.telstra.com.au/ememanagement](http://www.telstra.com.au/ememanagement)  
[www.telstra.com.au/mobile/life/index.htm](http://www.telstra.com.au/mobile/life/index.htm)

You are also welcome to contact Telstra directly for further information about radiofrequency EME and Telstra’s environmental performance. Please contact Telstra EME Coordinator, at [EME.Enquiries@team.telstra.com](mailto:EME.Enquiries@team.telstra.com).

## The Industry Code for the Deployment of Mobile Phone Network Infrastructure (ACIF Code)

### What does the Code do?

The industry Code was introduced in 2003 in response to calls for greater council and community involvement, and more information when telecommunications facilities are installed.

The Code is designed to complement the existing regulatory and legislative regime for telecommunications deployment. It provides a framework for local councils and communities to respond to proposed Low Impact Facilities which do not require planning consent from local council, and have their responses considered by the network carrier. In particular, the Code requires carriers to:

- provide specific information about a proposed facility;
- undertake consultation with the council and local community according to a specific timeframe;
- obtain council feedback about the adequacy of its consultation plan;
- have regard to all community and council feedback when making a decision about a proposed facility; and,
- submit a report to council on the outcomes of the consultation program.

Additionally, the Code requires carriers to adopt a precautionary approach to the design and operation of facilities, directing carriers to minimise the impact of radiofrequency signals from a proposed facility.

### Who does the Code affect?

When a new facility is being proposed, a carrier must identify and consult the relevant local council, the owners and occupiers of the subject site, adjoining neighbours, and "interested and affected parties". They may include surrounding properties in the immediate vicinity, nearby schools, sports clubs etc...

### Further Information

If you have any queries about the ACIF Code, or our compliance with the requirements of the Code, you may wish to contact the Australian Communications and Media Authority (ACMA), which is the federal government regulator of telecommunications and radio communications.

The Projects Section of the ACMA can be contacted on (02) 6219 5555, or via the web at [www.acma.gov.au](http://www.acma.gov.au).

## Consultation

In keeping with the *Industry Code for the Deployment of Mobile Phone Network Infrastructure* (ACIF Code), Telstra is required to consult with the community about the proposed new facility at Bardon. We have attached information for your consideration about the proposed facility, including a detailed description, and environmental report.

The proposal does not require planning approval from Brisbane City Council because the proposed facility is a Low Impact Facility under federal legislation, the *Telecommunications Act 1997* and the proposed screening of the facility is considered to be authorised under Schedule 3, Section 6 (2) of the *Telecommunications Act 1997* (please see Attachment A for an analysis).

Telstra is required to follow the process set out in the ACIF Code, which involves:

- a) Preparing a consultation plan and providing Council with the opportunity to comment on the consultation plan
- b) Consulting with interested and affected parties in accordance with the consultation plan
- c) Reporting to Council on the submissions received, Telstra's consideration of the submissions received, and Telstra's intended actions

**You are welcome to make a written submission regarding the proposal addressed to:**

**Heidi Minto  
Telstra c/- Aurecon Australia Pty Ltd  
Locked Bag 331  
BRISBANE QLD 4000**

**Or you may email your submission to: [mintoh@ap.aurecongroup.com](mailto:mintoh@ap.aurecongroup.com)**

The closing date for receipt of submissions is **Tuesday 22 September 2009**. Telstra will take all feedback into consideration before making a decision to proceed with the proposed facility.

## Contacts

Any further questions in relation to the proposed facility should be directed to Heidi Minto on 3173 8731 or by email at [mintoh@ap.aurecongroup.com](mailto:mintoh@ap.aurecongroup.com)

## Attachment B – Contact Details and Legislative Compliance

Description of proposed installation	The proposed works involve the installation of six panel antennas, 2.12m in length, at an approximate height of 10.31m above ground level (to the centre-line of the antennas). The six antennas will be mounted on the building support frame, set behind the edge of the building parapet at 27 Gerler Street, Bardon. Equipment associated with the proposed facility will be located within an existing room on the ground floor of the building. Screening will also be provided to minimise the visual impact of the proposed facility.	
Telephone contact details for development and/or construction issues	Heidi Minto Phone 07 3173 8731 Email: mintoh@ap.aurecongroup.com	
Telephone contact details for references to EMR information		
Proposed installation classification	Telstra regards the proposed installation as a Low Impact Facility under the <i>Telecommunications (Low-impact Facilities) Determination 1997</i> ("The Determination").	
	The reasons for this conclusion are based on the classification of the following components of the facility in relation to the Determination. With reference to Part 2 of "The Determination", the site is considered to be within a Residential Area.	
	Associated Maintenance works are authorised through Schedule 3 Division 4 of the Telecommunications Act 1997, as amended.	
	<b>Facility</b>	<b>Complies with item in the Determination.</b>
	Antenna – The installation of six panel antennas, approximately 2.12m in length; protruding from the building rooftop by less than 3.0m; in a colour to match its surrounds; and within a residential area.	Schedule Part 1 - Radio Facilities Item 3 Panel, yagi or other like antenna:  (a) not more than 2.8 metres long; and (b) if the antenna is attached to a structure – protruding from the structure by not more than 3 metres; and (c) either: i) colour matched to its background; or ii) in a colour agreed in writing between the carrier and the relevant local authority  And within a residential, commercial, industrial or rural area.
EMR compliance	The proposed installation will comply with the Australian Communications and Media Authority regulatory arrangements with respect to electromagnetic radiation exposure levels.	
Ancillary works	The installation of any ancillary equipment relating to the proposed installation (i.e. cabling, antenna mounts, electrical mains, hand railing etc.) is undertaken pursuant to: - Schedule 3, Division 3, Section 6, of the <i>Telecommunications Act 1997</i>	
Other works	The proposed installation of screening around the proposed antennas is carried out under: - Schedule 3, Division 3, Section 6 (2) (b) (i) of the <i>Telecommunications Act 1997</i>	



# Summary of Estimated RF EME Levels around the Proposed Mobile Phone Base Station at 27 Gerler Street, Bardon, QLD 4065

**Introduction:**

Date 7/8/2009

**NSA Site No (4065006)**

This report summarises the estimated maximum cumulative radiofrequency (RF) electromagnetic energy (EME) levels at ground level emitted from the proposed Mobile Phone Base Station antennas at 27 Gerler Street Bardon, QLD 4065. Maximum EME levels are estimated in 360° circular bands out to 500m from the base station. The procedures for making the estimates have been developed by the Australian Radiation Protection And Nuclear Safety Agency (ARPANSA)<sup>1</sup>. These are documented in the ARPANSA Technical Report; "Radio Frequency EME Exposure Levels - Prediction Methodologies" which is available at <http://www.arpansa.gov.au>

## EME Health Standard

ARPANSA, an Australian Government agency in the Health and Ageing portfolio has established a Radiation Protection Standard<sup>2</sup> specifying limits for continuous exposure of the general public to RF transmissions at frequencies used by mobile phone base stations. Further information can be gained from the ARPANSA web site.

The Australian Communications and Media Authority (ACMA)<sup>3</sup> mandates exposure limits for continuous exposure of the general public to RF EME from mobile phone base stations. Further information can be found at the ACMA website <http://emr.acma.gov.au>

## Proposed Site Radio Systems

Telstra WCDMA850	Telstra GSM900		

## Table of Predicted EME Levels – Proposed

Distance from the antennas at 27 Gerler Street in 360° circular bands	Maximum Cumulative EME Level – All carriers at this site  (% of ARPANSA exposure limits <sup>2</sup> ) Public exposure limit = 100%
0m to 50m	5.54%
50m to 100m	3.95%
100m to 200m	1.014%
200m to 300m	0.0%
300m to 400m	0.0%
400m to 500m	0.0%
<b>Maximum EME level</b> 37.54 m, from the antennas at 27 Gerler Street	5.54%

**Table:** Estimation for the maximum level of RF EME at 1.5m above the ground from the proposed antennas assuming level ground. The estimated levels have been calculated on the maximum mobile phone call capacity anticipated for this site. This estimation does not include possible radio signal attenuation due to buildings and the general environment. The actual EME levels will generally be significantly less than predicted due to path losses and the base station automatically minimising transmitter power to only serve established phone calls<sup>5</sup>. Where applicable, particular locations of interest in the area surrounding the base station, including topographical variations, are assessed in Appendix A "Other areas of Interest" table on the last page.

## Summary – Proposed Radio Systems

RF EME levels have been estimated from the proposed antennas at **27 Gerler Street** Bardon, QLD 4065. The maximum cumulative EME level at 1.5 m above ground level is estimated to be **5.54 %** of the ARPANSA public exposure limits.

## Existing Site Radio Systems

There are currently no existing radio systems for this site.

### Reference Notes:

1. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) is a Federal Government agency incorporated under the Health and Ageing portfolio. ARPANSA is charged with responsibility for protecting the health and safety of people, and the environment, from the harmful effects of radiation (ionising and non-ionising).
2. Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), 2002, 'Radiation Protection Standard: Maximum Exposure Levels to Radiofrequency Fields — 3 kHz to 300 GHz', Radiation Protection Series Publication No. 3, ARPANSA, Yallambie Australia. [Printed version: ISBN 0-642-79400-6 ISSN 1445-9760] [Web version: ISBN 0-642-79402-2 ISSN 1445-9760]
3. The Australian Communications and Media Authority (ACMA) is responsible for the regulation of broadcasting, radiocommunications, telecommunications and online content. Information on EME is available at <http://emr.acma.gov.au/>
4. The EME predictions in this report assume a near worst-case scenario including:
  - base station transmitters operating at maximum power (no automatic power reduction)
  - simultaneous telephone calls on all channels
  - an unobstructed line of sight view to the antennas.In practice a worst-case scenario is rarely the case. There are often trees and buildings in the immediate vicinity, and cellular networks automatically adjust transmit power to suit the actual telephone traffic. The level of EME may also be affected where significant landscape features are present and predicted EME levels might not be the absolute maximum at all locations.
5. Further explanation of this report may be found in "Understanding the ARPANSA Environmental EME Report" and other documents on the ARPANSA web site, <http://www.arpansa.gov.au>

Issued by: **Carrier**, Data reference file – Bardon, QLD 4065 - 20090807175019

## Appendix A

### Table of Other Areas of Interest

Additional Locations	Height / Scan relative to location ground level	Maximum Cumulative EME Level All Carriers at this site  (% of ARPANSA exposure limits <sup>2</sup> ) Public exposure limit = 100%
Residential - 25 Gerler St	0m to 10m	9.14%
Residential - 33 Gerler St	0m to 7m	2.014%
Residential - 32-34 Gerler St	0m to 4m	2.33%
Residential - 28-30 Hebe St	0m to 7m	0.22%
Residential - 45 Hebe St	0m to 7m	0.041%

**Table:** Estimation for the maximum EME levels at selected areas of interest over a height range relative to the specific ground level at the area of interest. This table includes any existing and proposed radio systems.

#### Estimation Notes / Assumptions – Other Areas of Interest

Variable ground topography has been included in the assessment of the "Other Areas of Interest" as per ARPANSA methodology  
*Insert other data / notes as required*