Date: 20 April 2020
Our reference: FOI14117
Email: foi@camden.gov.uk

Information and Records Management
Corporate Services
London Borough of Camden
Town Hall
Judd Street
London
WC1H 9JE

Phone: 020 7974 7857

camden.gov.uk

Dear Requester

Thank you for your request for information dated 03 April 2020 about our contract with Arqiva 2013. We have dealt with this under the Environmental Information Regulations 2004.

Response

The council holds the information requested and the answers to your questions are:-

Re: Contract with Arqiva 2013 (first released on 03/05/2019 - FOI12612)

On page 33 of the contract, there appears this:

"The Concessionaire shall ensure that all wireless equipment deployed under the Contract shall be located such that no occupational hazards in the form Of non-ionising radiation can arise when Authority staff and/or third party contractors are undertaking maintenance work on the street furniture. Please provide documentation."

Please provide the documentation supplied by Arqiva requested by this paragraph.

Please find the requested information enclosed.

Further Information:

Why not check our Portal Open Data Camden before making a new request as your question may already be answered by a previous FOI response or in one of our many useful and interesting datasets.

Your Rights

If you are not happy with how your response was handled you can request an Internal Review within 2 months of this letter by email to foireviews@camden.gov.uk or post: Information and Records Management Team, London Borough of Camden, Town Hall, Judd Street, London WC1H 9JE. Please quote your case reference number. If you are not satisfied with the Internal Review outcome you can complain to the Information Commissioner's Office at casework@ico.org.uk telephone 0303 123 1113, or post to Information Commissioner's Office, Wycliffe House, Water Lane, Wilmslow, Cheshire, SK9 5AF. The ICO website www.ico.org.uk may be useful.

Yours sincerely

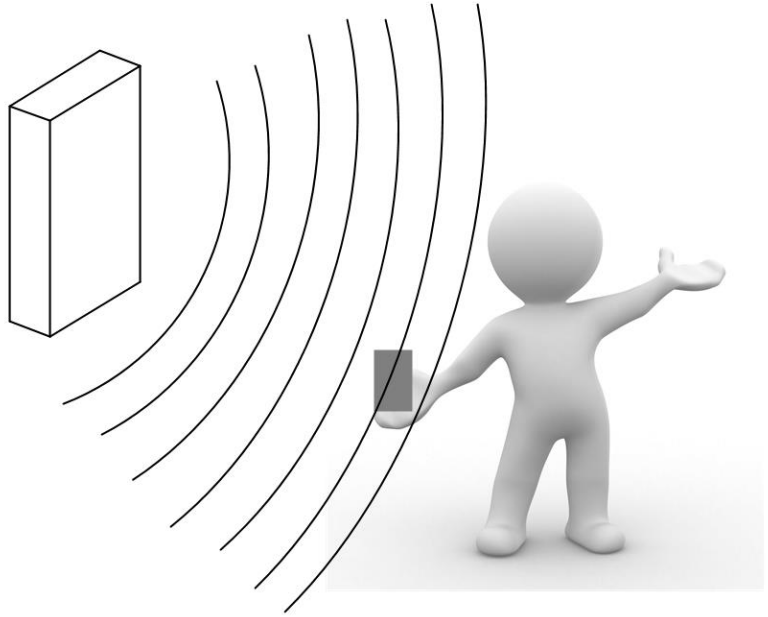
Peter Williams
Information Rights Officer

Overview of RF safety with Small Cells

ARQIVA

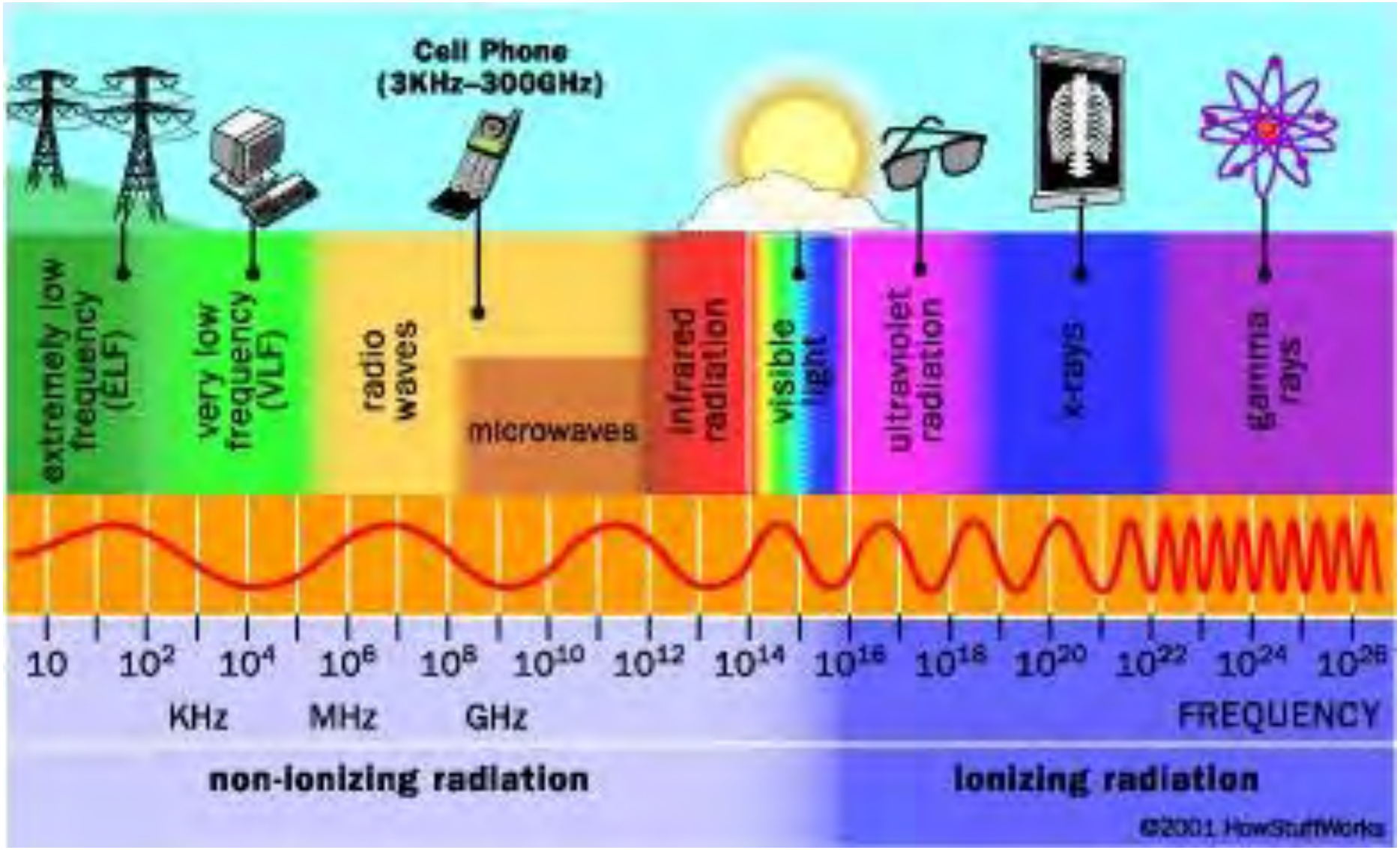
December 2019

Radio Waves



- Wireless equipment works by transmitting and receiving radio waves
- Radio waves are a type of electromagnetic field. RF stands for *Radio Frequency*
- RF waves can be potentially harmful and exposure to them has to be limited
- Main effect is heating
- Strength of waves described in terms of physical quantities – limits can then be set by medical experts which identifies the exclusion zone in which work can be safely undertaken

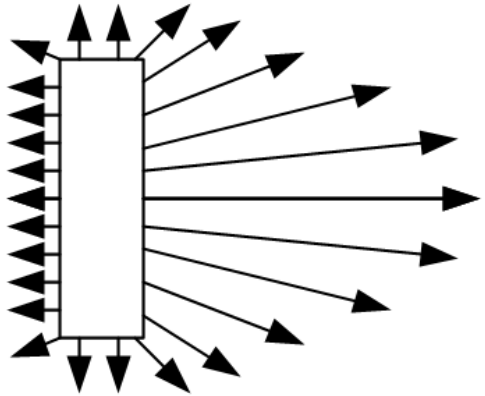
Frequencies



RF safety rules in EU and UK

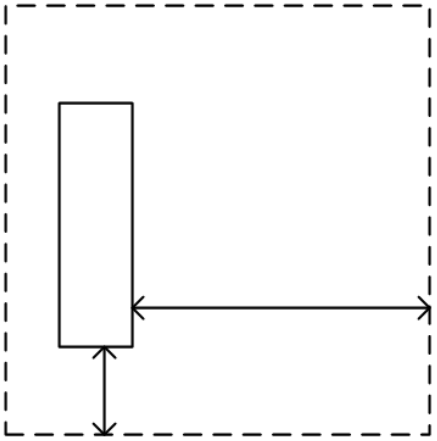
- Occupational – people *at work*
- Public - people not *at work* – higher limits than occupational
- ICNIRP is an international expert body which recommends limits on exposure and identified the exclusion zone in which work is undertaken
- In EU, ICNIRP public guidelines are the basis of EC Rec. 1999/519/EC
- In UK, ICNIRP occupational guidelines are the basis of CEMFAW Regs 2016
- Workers at particular risk
  - Passive implants, active implants, pregnant workers, working with explosives
  - Employers are responsible for risk-assessing the activities of any staff they have who fall into the category
  - Staying outside the occupational zone might not be enough to protect some of these workers
- Limits vary with frequency and power

RF safety – exclusion zones

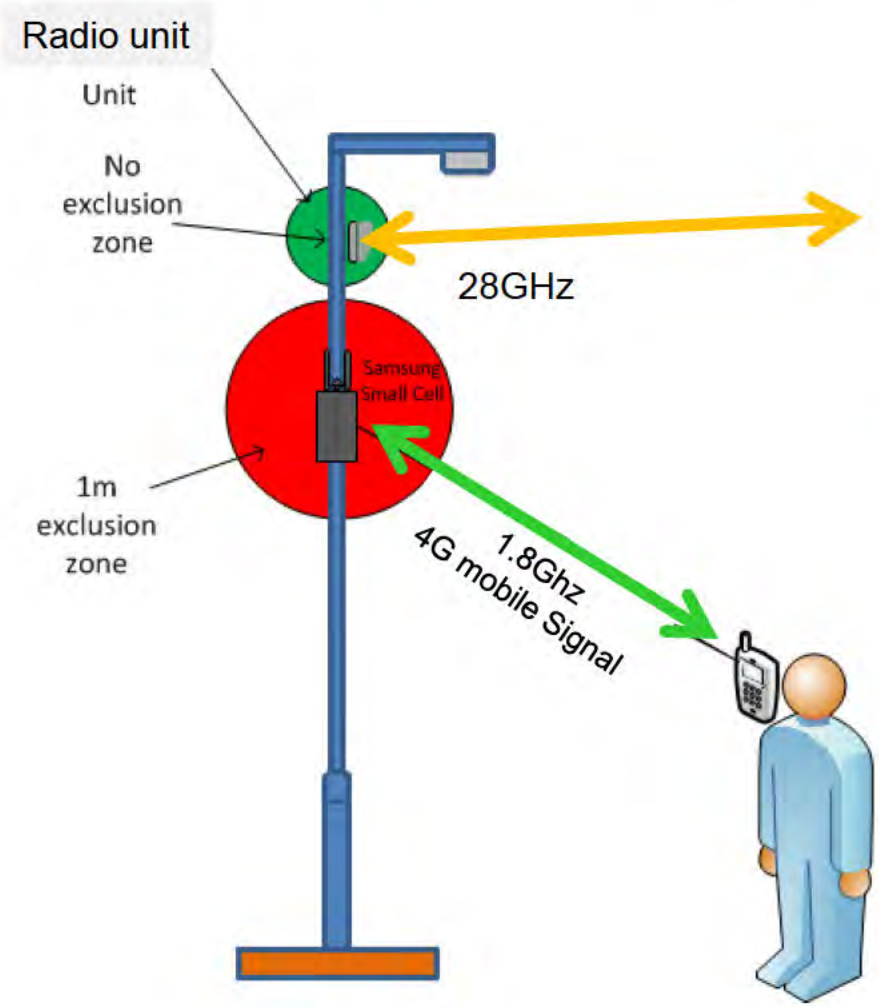


- An antenna is a device which transmits or receives radio waves
- Might transmit or receive more in some directions than others

- Strength of waves reduces with distance
- Safe distance is where strength has reduced to limit set by medical experts
- Exclusion zone is a volume around the antenna within which the strength of the waves exceed the safe limit



RF safety - small cells



- On this example there are two “wireless elements” on the column
  - Small cells should normally be electrically switched off before carrying out any work at height
  - Radio unit are lower powered and higher frequency so in theory can be left powered, though for ease it would make sense to turn off ALL the telecoms In this case the radio unit may still be carrying traffic so you should avoid blocking the line of sight to the next radio unit.
- The small cells are of higher power. So there is an exclusion zone of around the equipment:
  - occupational ≈1 m, in any direction
  - public ≈1.5 – 2 m horizontally, ≈1 m vertically
- When Arqiva are looking to deploy a small cell on the lamppost needs to be at least:
  - 1.5 – 2.5 m horizontally from face of building,
  - 1.5 – 3 m horizontally from a road, and 1 m vertically above - given a bus is 2.6m in height
  - We also consider Scaffolding and need 1 m horizontally from where the scaffolding is erected
    - Although this is normally a temporary sctructure and as such we would look to deploy once the work has completed and the scaffolding has been removed

Small cells In Situ

Radio unit

H3G small cell with antenna

TEF small Cell

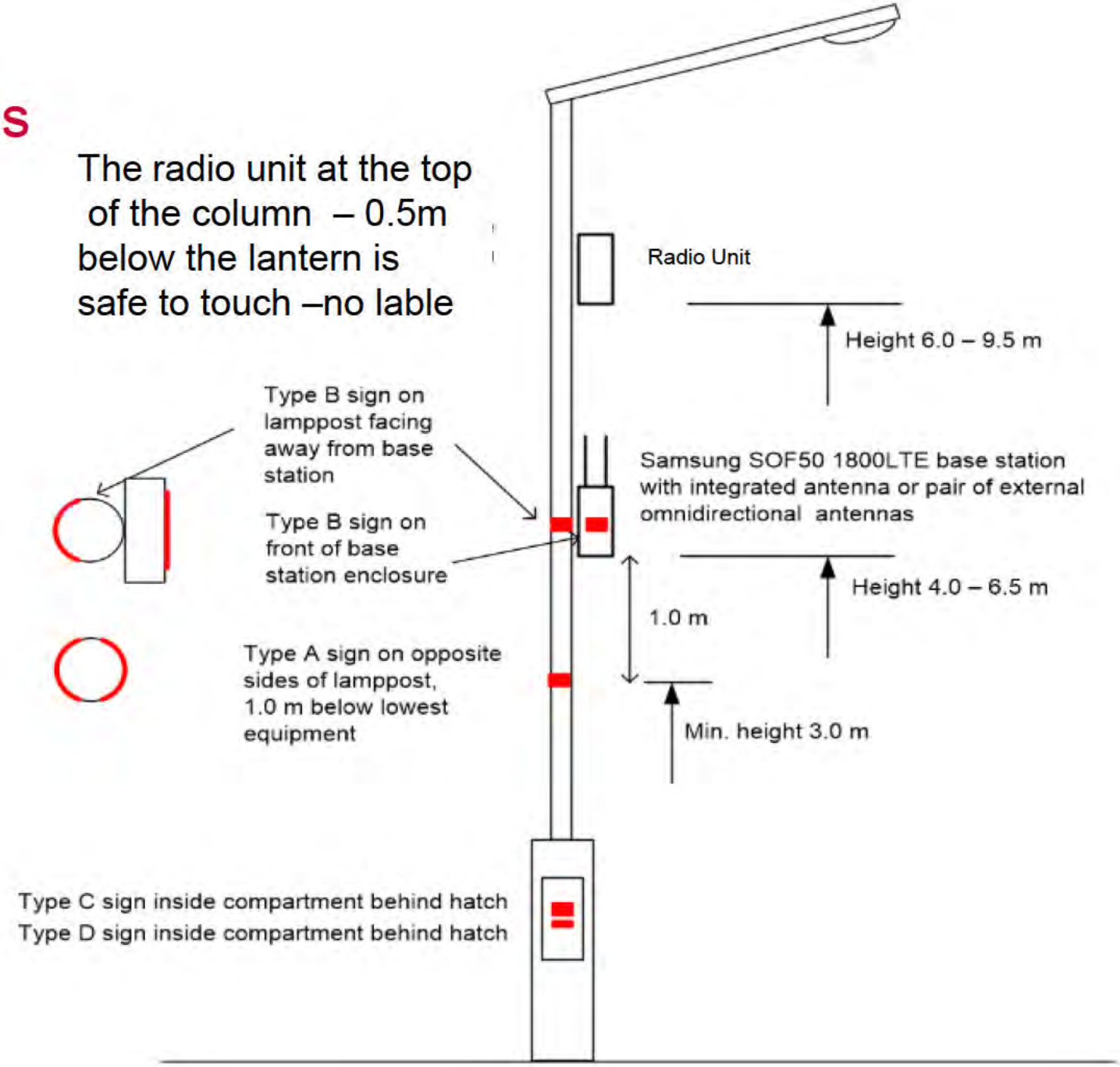
How do you know?

The radio unit will be approximately 0.5 m below the lantern

The small cell will be located a minimum of 4.5 m above ground level (usually ~5 m)

RF safety – signage positions

The radio unit at the top of the column – 0.5m below the lantern is safe to touch –no lable



RF safety – signage – sign types

Type A – below equipment

Type B – at equipment

Type C – inside hatch

Further pictures of install – close ups

Contact details for Arqiva –
Within 1 m of the Small Cell
Telecoms equipment on the column

Contact details for Arqiva –
Within the column door

Limiting access to the asset

- The equipment is radiating RF and we keep people safe by keeping them beyond a safe distance. If people need access within that distance they need to contact us for a shutdown.

- In order for non-Arqiva teams to access the assets. e.g. for lamp changes, signage activity, RTAs:
  - Will need to inform Arqiva PRIOR to any activity to allow controlled shut down of equipment
  - There will be separate isolator at lamppost for Telecoms equipment to prevent accidently switch off (labelled)
  - Assets need to be identified within Borough asset register/list;
    - E.G. using the “special engineering difficulties” (SED) lable to control access to the column via the permitting system

Power-off process

When you get to site
Call Arqiva - 0800 1383 416
Quote location & Site no.

Turn off power to small cell-

Undertake the work at height

Turn small cell isolator back on

Call Arqiva when finished

Questions?

Further reading - specific to 5G
You tube video;

https://www.youtube.com/watch?v=k2t1dUCyE0I