

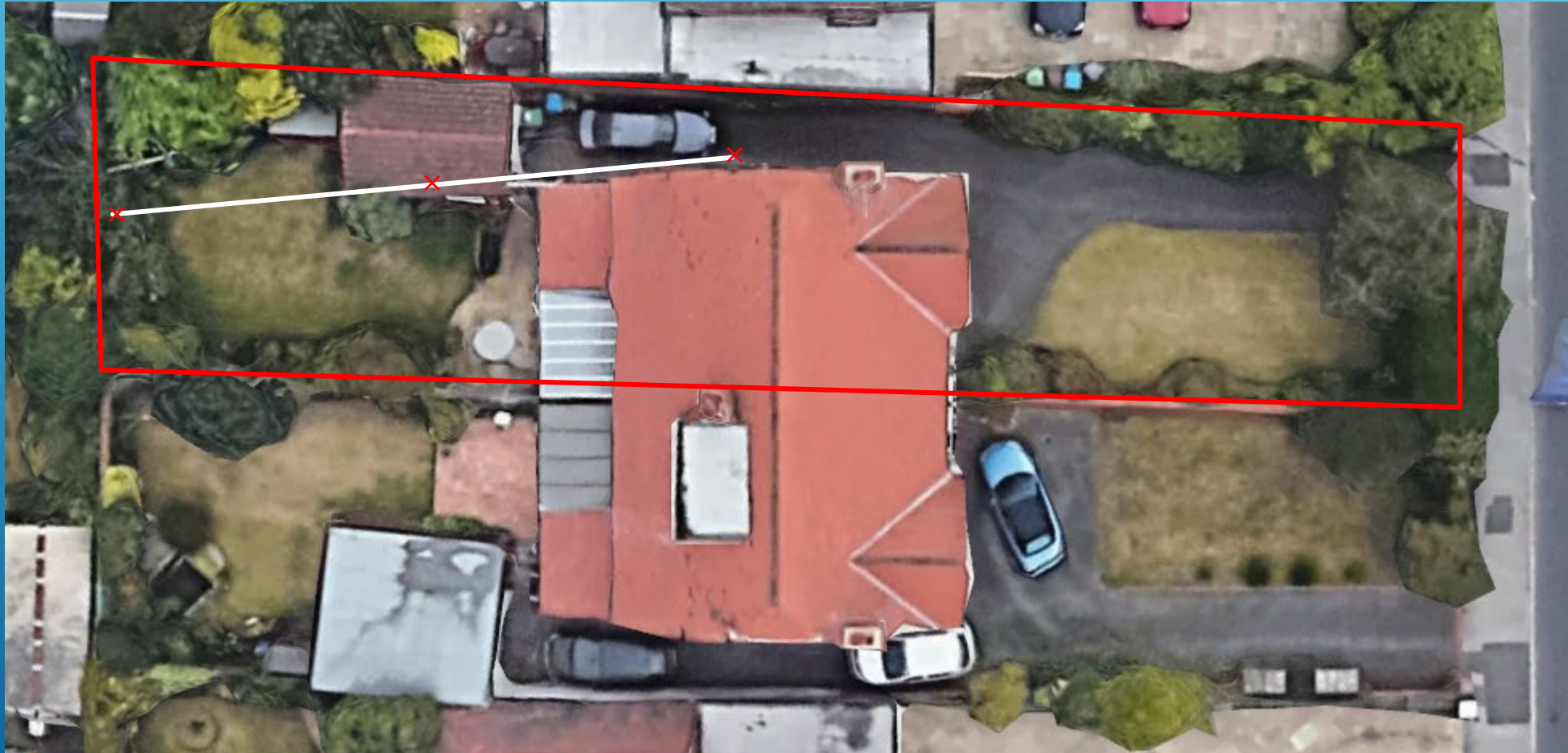
# THE EVOLUTION OF AN HF ANTENNA

In a moderately sized garden...

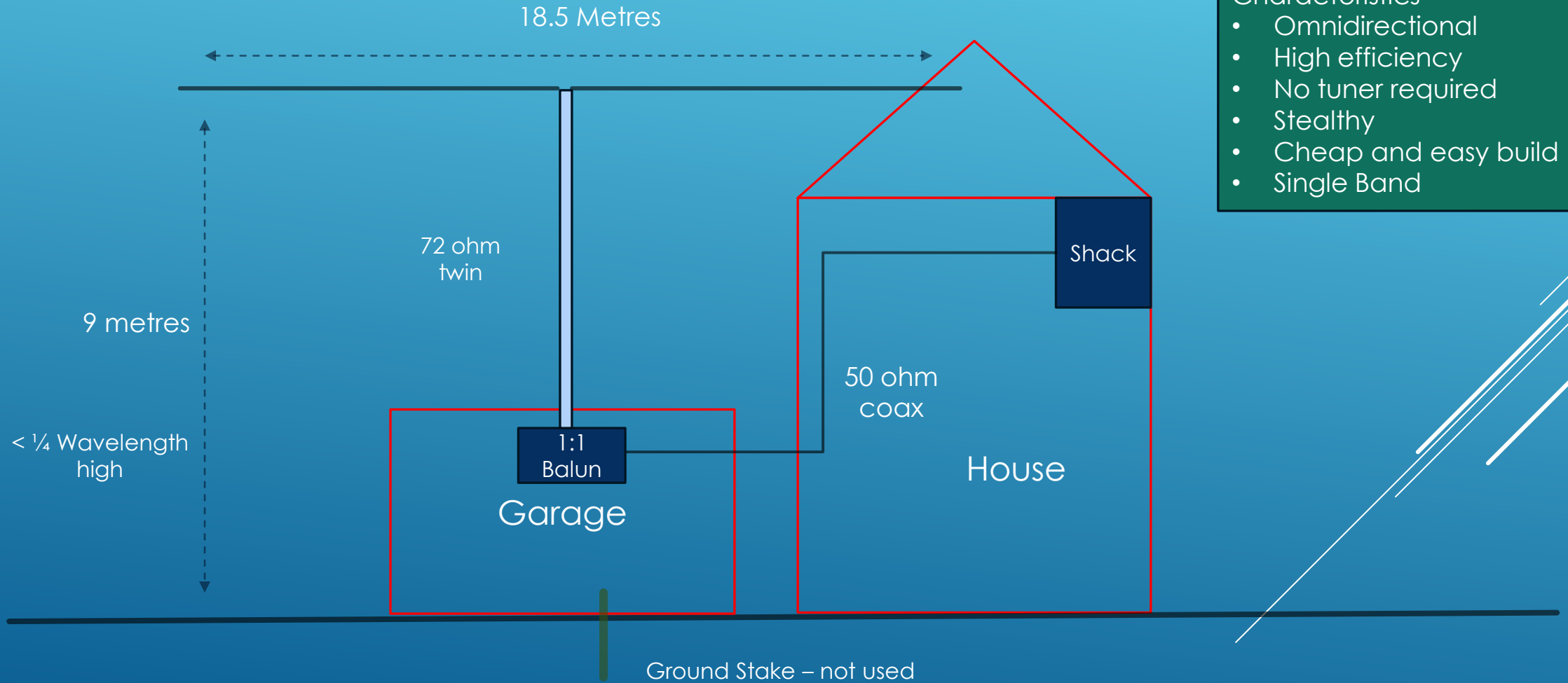
Steve Withnell  
G0AIN

12/12/2023

My plot – I can just squeeze in 19 metres of Antenna Wire  
Which is just enough for a  $\frac{1}{2}$  wave dipole on 40 metres!

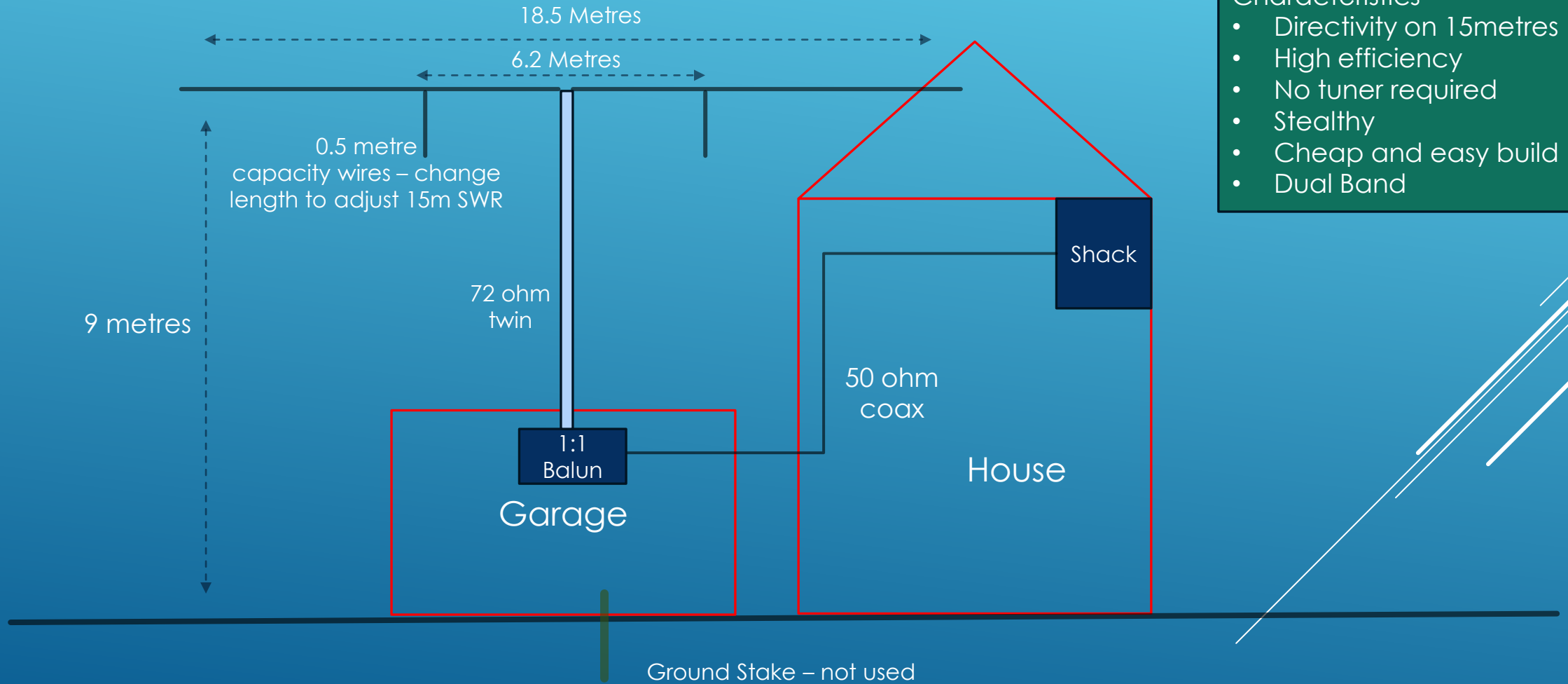


# Antenna No.1 – 40 metre dipole



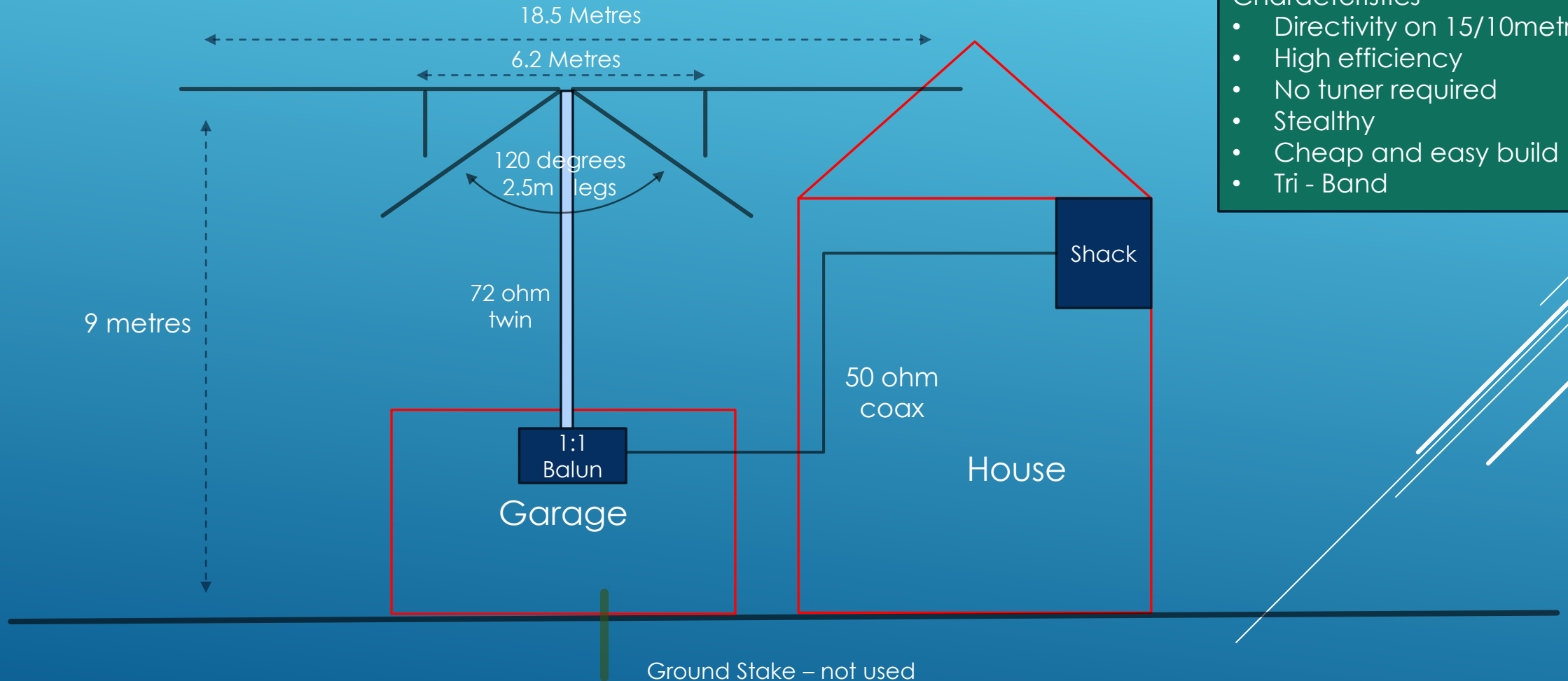
- Characteristics
- Omnidirectional
  - High efficiency
  - No tuner required
  - Stealthy
  - Cheap and easy build
  - Single Band

# Antenna No.2 – 40/15 metre dual band dipole



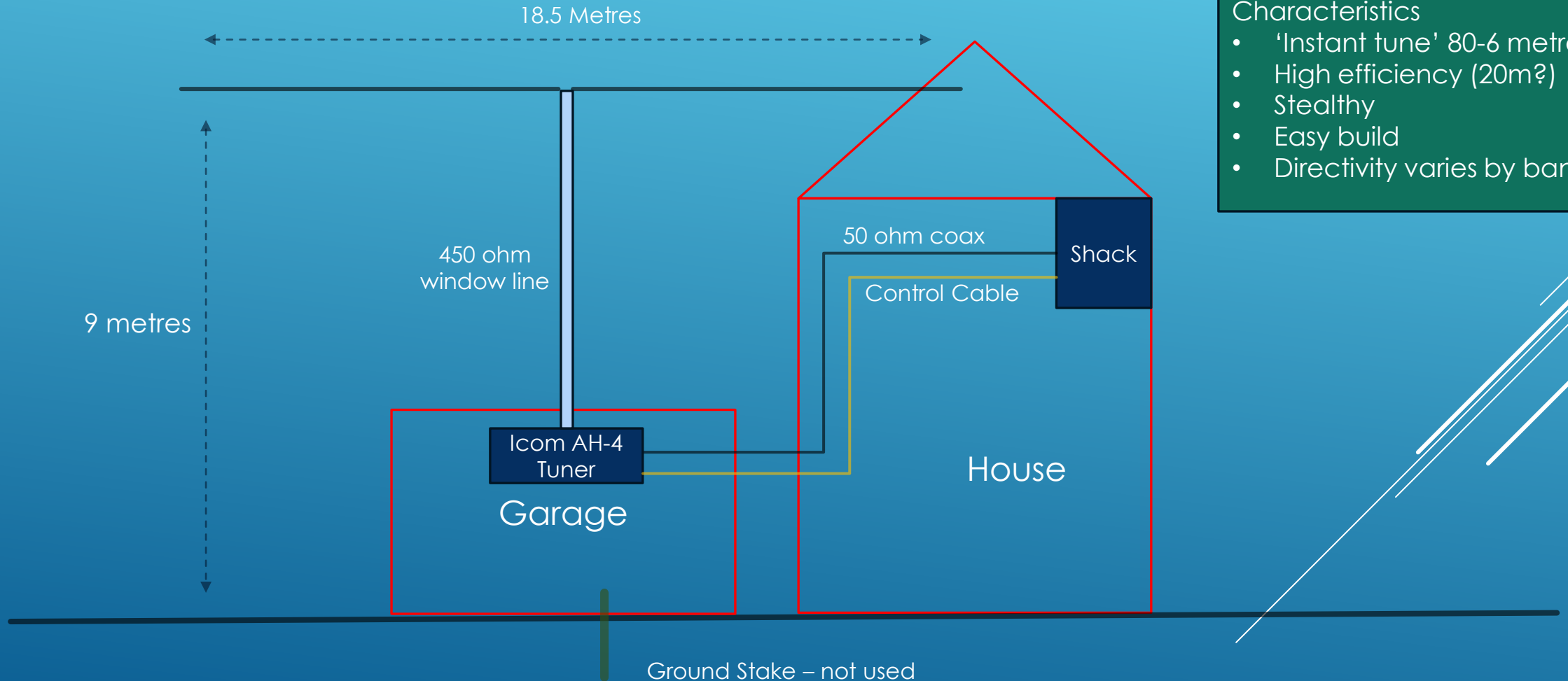
- Characteristics
- Directivity on 15metres
  - High efficiency
  - No tuner required
  - Stealthy
  - Cheap and easy build
  - Dual Band

# Antenna No.3 – 40/15/10 metre tri-band dipole



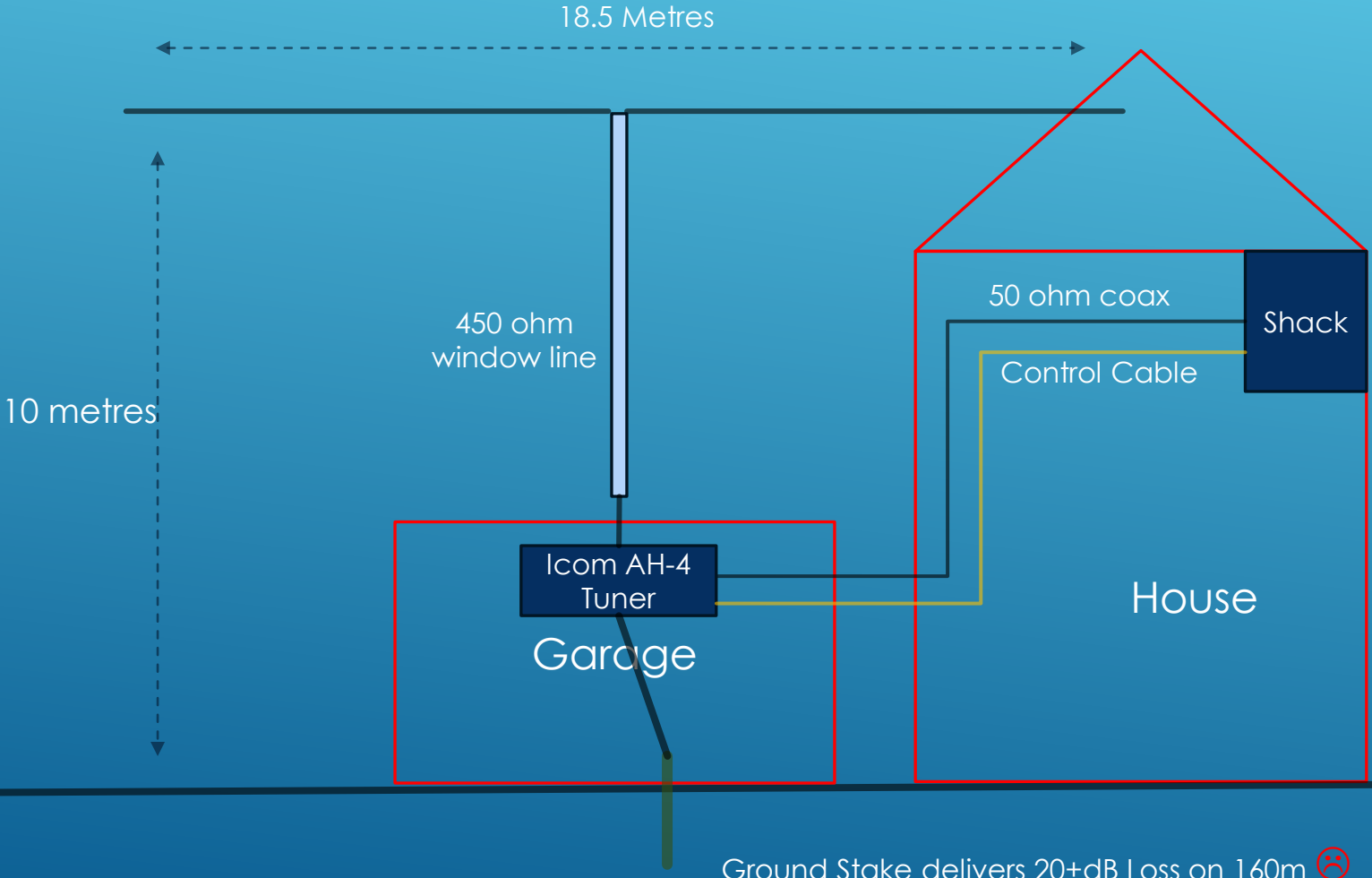
- Characteristics
- Directivity on 15/10metres
  - High efficiency
  - No tuner required
  - Stealthy
  - Cheap and easy build
  - Tri - Band

# Antenna No.4 – 80 to 6 metre multiband-band doublet



- Characteristics
- 'Instant tune' 80-6 metres
  - High efficiency (20m?)
  - Stealthy
  - Easy build
  - Directivity varies by band

# Antenna No.5 – 160 to 6 metre multiband-band top loaded Marconi (Easy to switch back to Antenna #4)



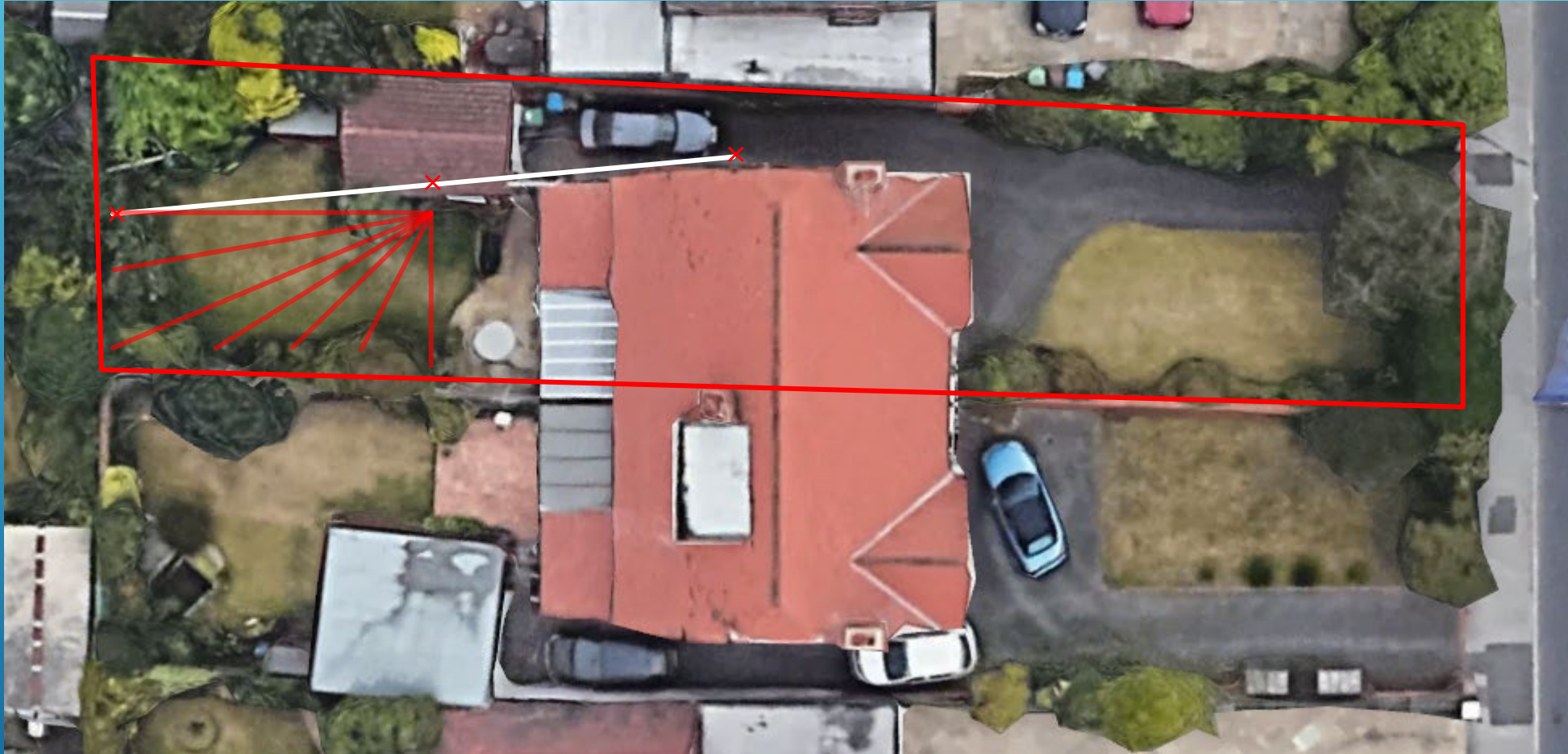
### Characteristics

- 'Instant tune' 160- 40 metres
- Vertical polarization for ground wave propagation.
- Omnidirectional
- Efficiency is poor

Ground Stake delivers 20+dB Loss on 160m ☹️



The Addition of Some Radials Reduces Losses by 10dB



So I now estimate the losses on Top Band to be about 10dB...



# Antenna No.7??? – 630m top loaded Marconi (A work in Progress)

