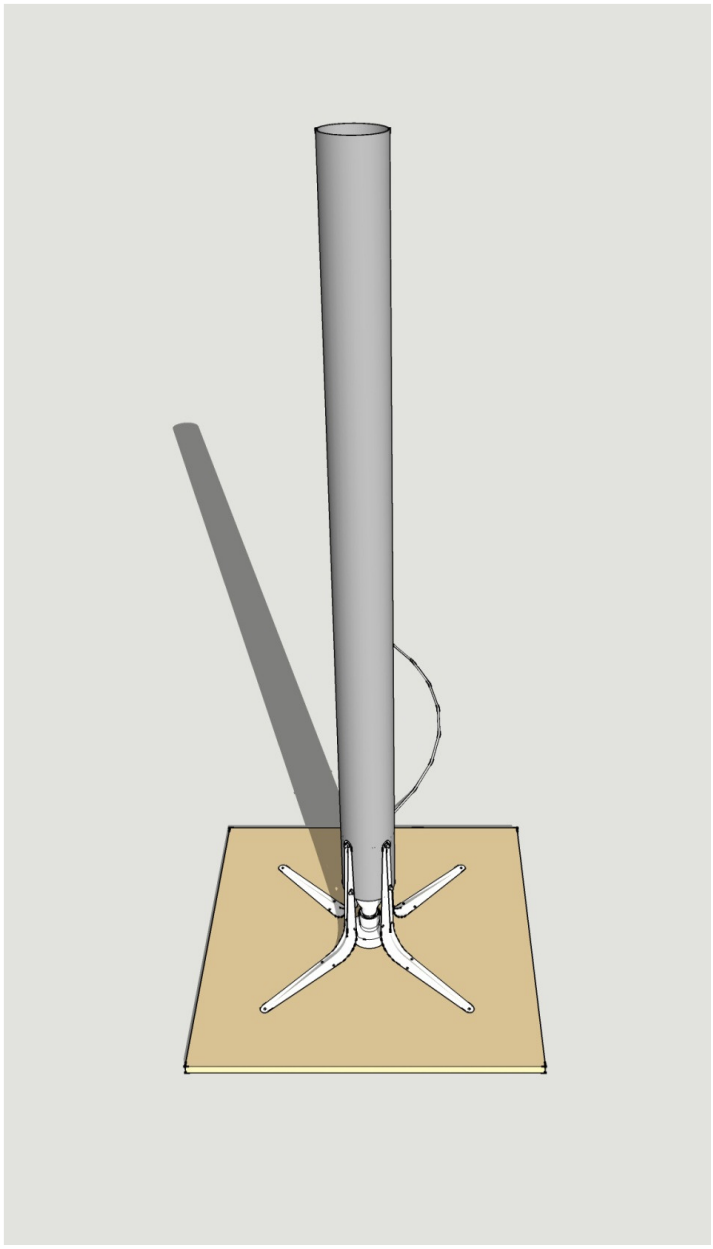

how to make a friendly rope end dryer

[*also known as* F.R.E.D.]

PARTS NEEDED

- 8no. M8 nuts and bolts
  [*not illustrated*]
- 16no. stainless steel washers (to suit nuts and bolts)
  [*not illustrated*]
- 12 screws (for attaching brackets to baseboard)
  [*not illustrated*]
- 1no. 13amp fused plug and 2amp fuse (please replace supplied 13 amp fuse in plug with 2amp fuse to ensure electrical safety – *refer to Appendix A for more detail*)
  [*not illustrated*]
- 1no. 1.5m long length of 110mm dia. uPVC drainage pipe
  [*no.1 in figure 1 below*]
- 1no. 700x700x18mm piece of water resistant MDF (or plywood)
  [*no.2 in figure 1 below*]
- 4no. 300x250mm London Brackets
  [*no.3 in figure 1 below*]
- 1no. Batten lampholder (please ensure earth point in the fitting, sometimes known as 'loop-in' type of batten lampholder – *refer to Appendix A for more detail*)
  [*no.4 in figure 1 below*]
- 1no. 40w bayonet Tungsten filament lightbulb or 40w rough service lamp to provide longevity (max. 40w - there is not enough heat from energy saving types and higher than 40w risks singeing the ropes) [*no.5 in figure 1 below*]
- Approx. 3m length of 3 core (240V) 0.5mm 3amp electrical flexible cable (or to suit distance from centre of ringing room to electrical socket)
  [*no.6 in figure 1 below*]
- 2-3 non-metallic cable clips for attaching cable to baseboard (these should be sized to suite the outside diameter of the electrical flex – *see Appendix A*
  [*not illustrated*]
- 150x150mm square of 13mm (1/2") galvanised chicken mesh
  [*no.7 in figure 1 below*]

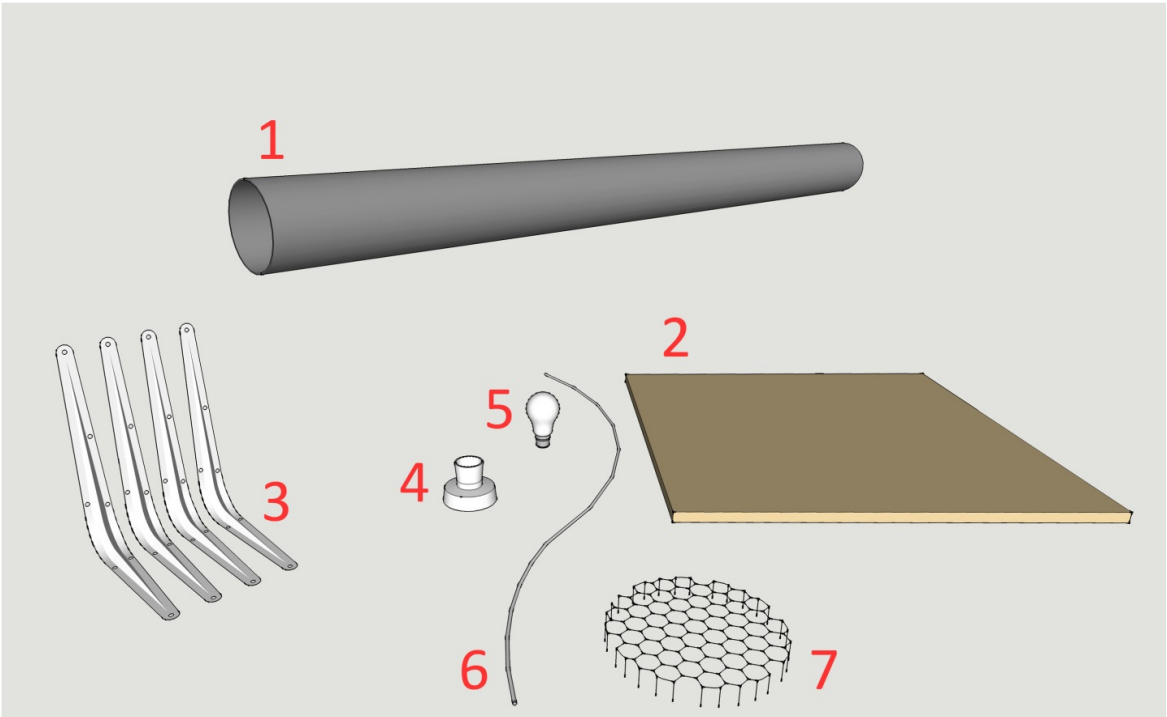

figure 1

TOOLS NEEDED

- Electric drill and bits (metal and wood)
- Screwdrivers (including stub type)
- Hammer (for fixing cable clips to baseboard)
- Pliers and/or small spanners
- Tin snips (for cutting chicken wire)
- Pencil
- Straight rule and T-square
  and …
- Willingness to tackle DIY jobs

INSTRUCTIONS

1. Take the square of chicken wire and bend it into shape to suit the internal diameter of the drainage pipe, ensuring the circular part is as flat as possible. The 'folds' around the circumference of the flat top will need to be clamped with the internal washers of the fixing brackets, so using tin snips, adjust if necessary – [*see figure 2*]

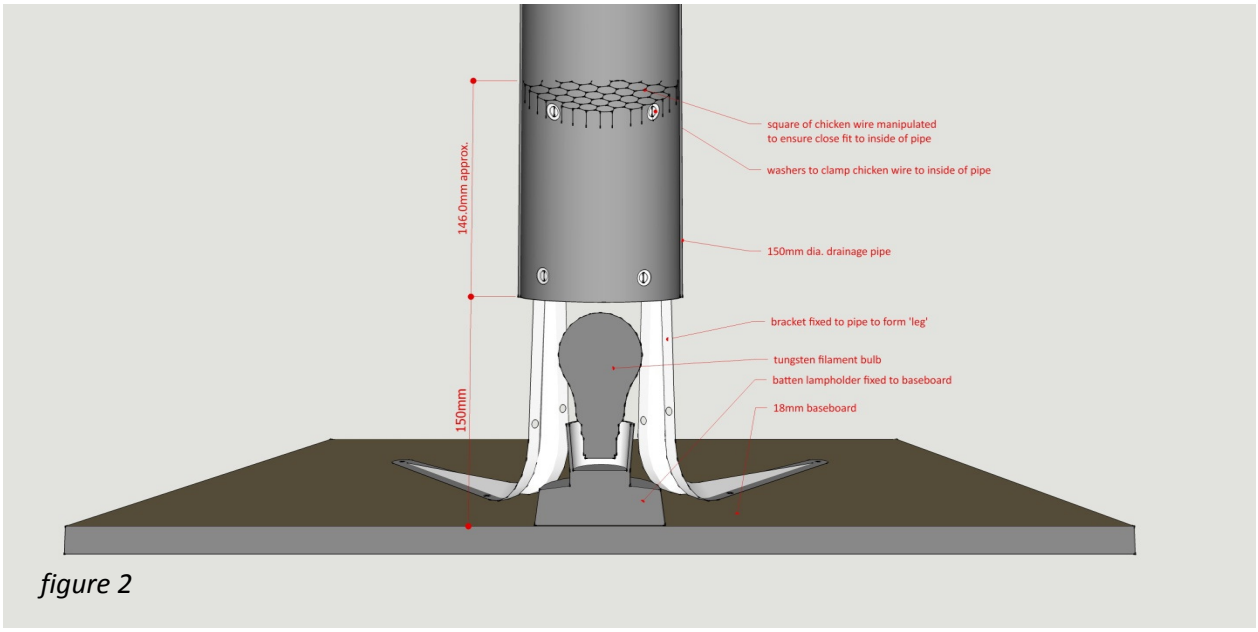

figure 2

2. Take a bracket and note that the shorter leg (250mm) will be fixed to the baseboard. On the longer leg (300mm) mark and drill a hole the same size as the pre-drilled hole at approx. 120mm down from the pre-drilled one. Repeat this process for the 3 remaining brackets – [*see figure 3*]

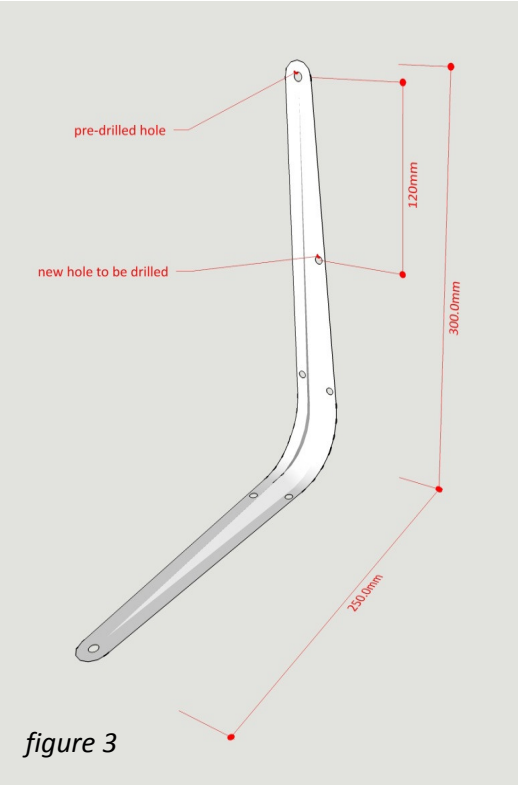

figure 3

3. Using one bracket line it up with the length of pipe and ensure that it overhangs the end by 150mm. mark the holes needing to be drilled and repeat 3 times around the circumference of the pipe. Drill the holes – [*see figure 4*]

4. Firstly fix the top brackets to the pipe with the nuts and bolts remembering to use the washers on the inside of the pipe and on the outside of the bracket. Use the top washers to clamp the chicken wire to the sides of the pipe. Once this fiddly job is completed fix the remaining nuts, bolts and washers through the new holes in the brackets to complete the 'legs' – [*see figure 2*]

5. Once this is completed you should be able to stand the pipe on the four 'legs'. As the bulb will need to be passed through one of the gaps in the 'legs' do ensure that you leave at least 57mm clearance between the 'legs'.

6. Make a pencil cross in the centre of the baseboard from corner to corner. This will mark the centre of the board and provide the fixing point for the batten light fitting. It will also give you a guide to fix the legs to the baseboard in an accurate manner – [*see figure 5*]

7. Dismantle the batten light fitting and screw the backing piece to the baseboard, ensuring the base plate is centred on the cross of your pencil marks.

8. Take your electrical flex and wire into the plug and wire the other end into the light fitting – *refer to Appendix A for more detail*. You may need to remove a piece of plastic from the side of the screw on cover to ensure the flex comes out level with the baseboard.

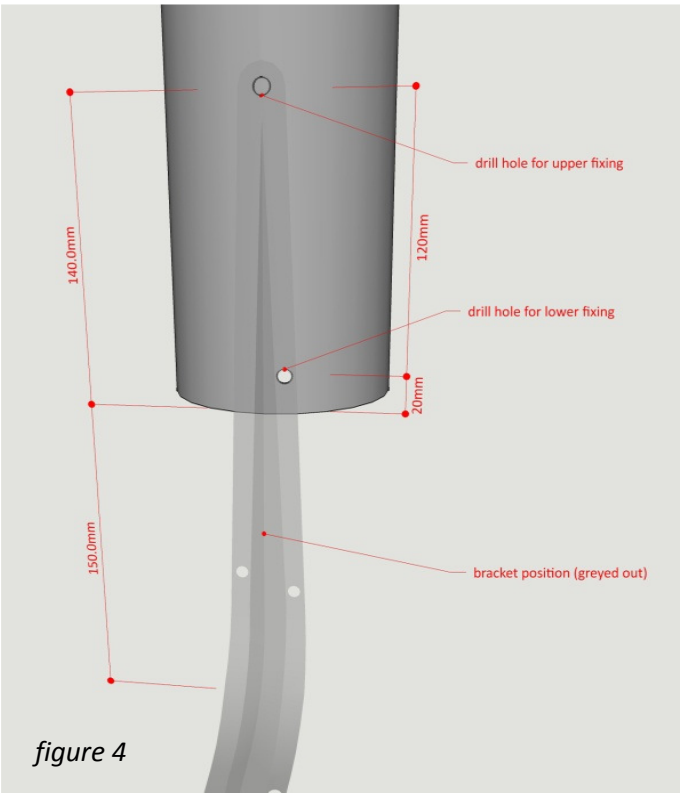

figure 4

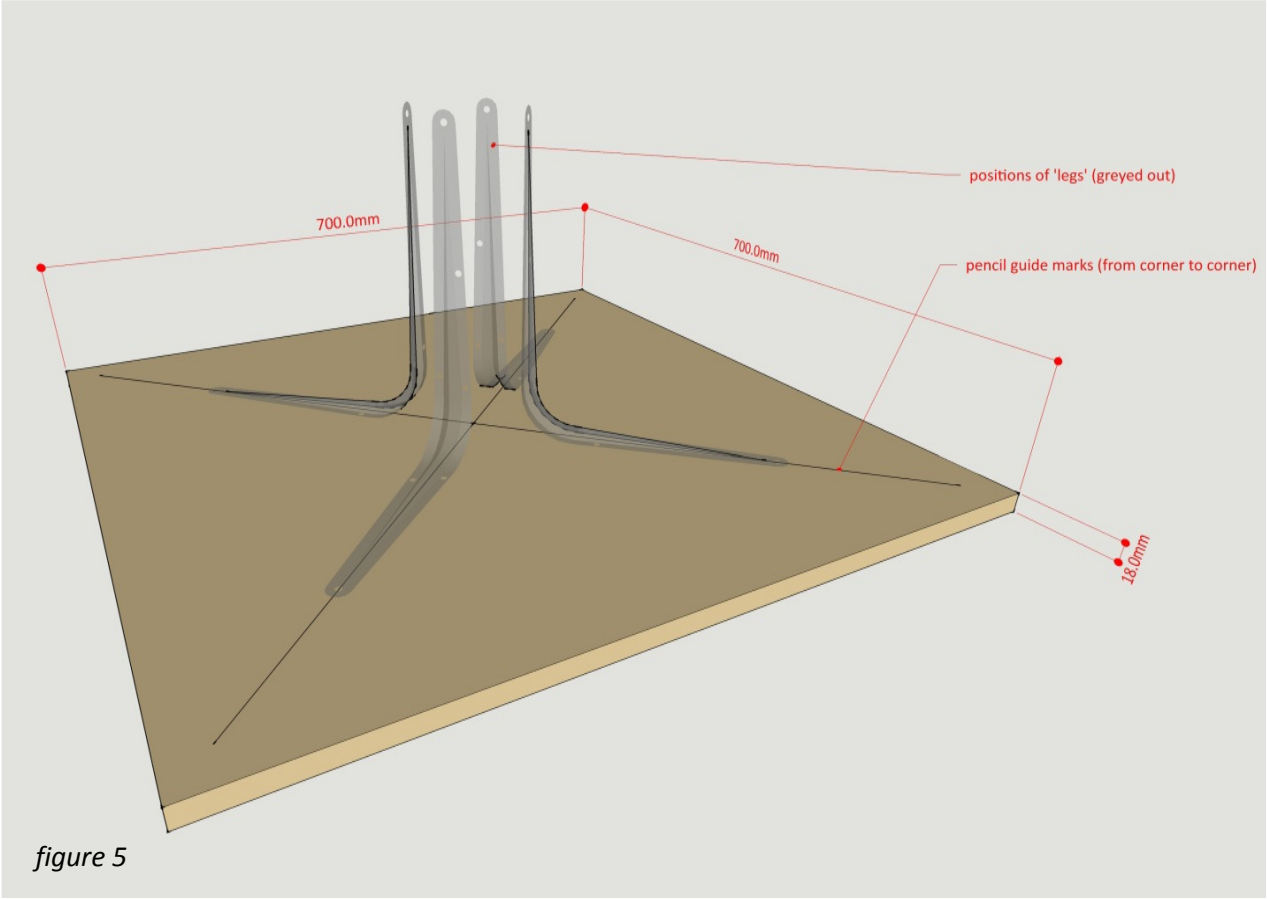

figure 5

9. Fit the cover and screw on the ferrule to cover the bayonet fitting.

10. Next position the completed pipe with ‘legs’ over the light fitting, ensuring that the centre of the pipe assembly is centred over the light fitting.

11. Drill pilot holes into the baseboard and screw the ‘legs’ to the baseboard.

12. Next fit the bulb into the whole assembly and plug the completed F.R.E.D. in a socket to ensure all is working – [*see figure 6*]

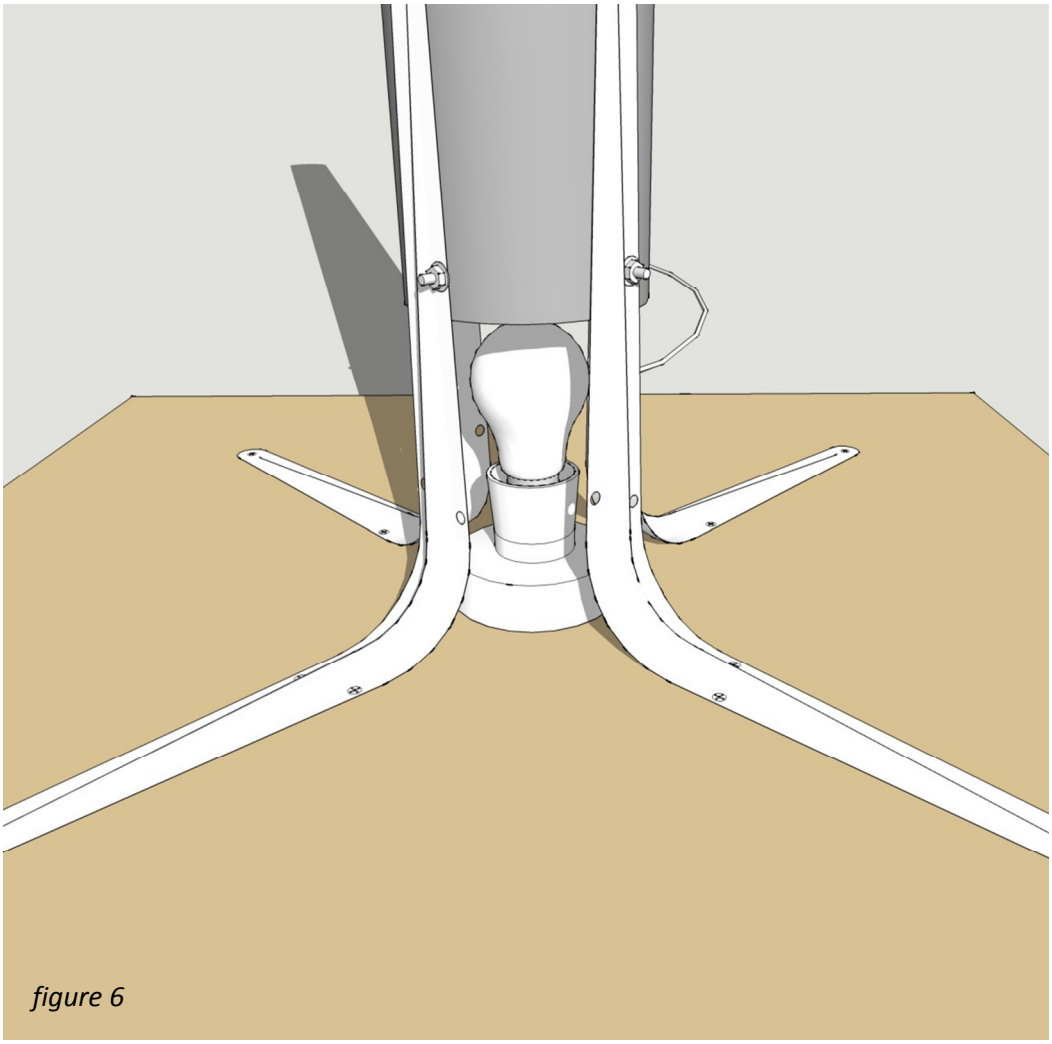

figure 6

13. Position F.R.E.D. in the centre of your ringing room, pop the tail ends in at the top and keep your ropes warm and dry!

Appendix A – ELECTRICAL SAFETY

Electrical flexible cable – similar to that used in table lamps or electrical tools, it will be round in section and all the conductors will be individually insulated (brown, blue and green/yellow (earth)). [*see figure 7 below*]

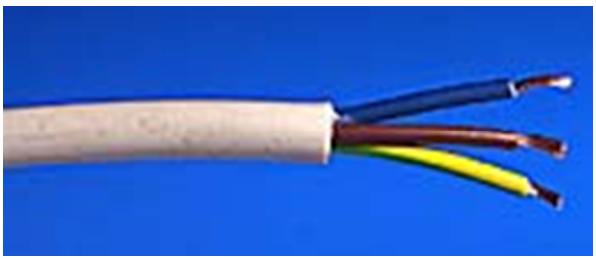

figure 7

Plug – Please ensure the plug is wired correctly; for the avoidance of doubt see *figure 8* below.

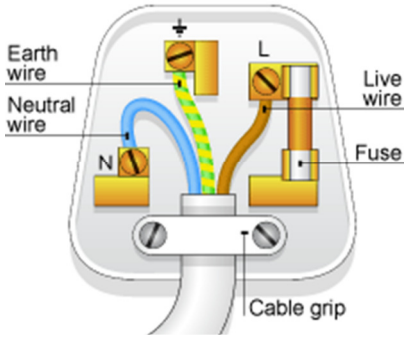

figure 8

It's really important that the standard 13amp fuse supplied in plugs is replaced with a 2amp fuse to protect the appliance. A 13amp fuse would allow 300% overload on the cable, which if sustained will melt and burst into flames.

Lampholder – Please ensure that the electrical flex leaving the lampholder is clamped to the baseboard with non-metallic cable clips. These should be sized to clamp the flex to the baseboard to ensure that the connectors are not under tension at their termination in the lampholder.

Earthing – as remarked above the batten lampholder should be of the 'loop-in' type, ie. have a brass earth point.

For additional electrical safety the 4 metal leg brackets should also be earthed to the earth point of the lampholder, called 'supplementary bonding of extraneous metal' as required by BS7671. If this additional level of electrical safety is required; this requirement should be checked with whoever carries out electrical safety checks in your tower, and could be retro-fitted if needed.

You will need additional lengths of insulated earth wiring. If necessary purchase an additional 1.5m of electrical flex and carefully strip out the earth core to use for this purpose. Use and additional nut

and bolt with a washer to clamp the earth wire to each bracket leg and feed the other ends into the earth point in the lampholder. It should be noted that a piece of emery paper will be needed to remove the plastic/paint coating on the bracket to ensure good earth connection. Please also ensure that the cables are fixed to the baseboard to prevent movement.

Finally

Please ensure that the completed appliance is regularly inspected for damage and tested as a portable appliance (PAT tested) annually to ensure it remains electrically safe.

document prepared by Allister Godfrey
with help and advice from Tony Crabtree
additional electrical safety guidance from Alan Marchbank
revision c – February 2013