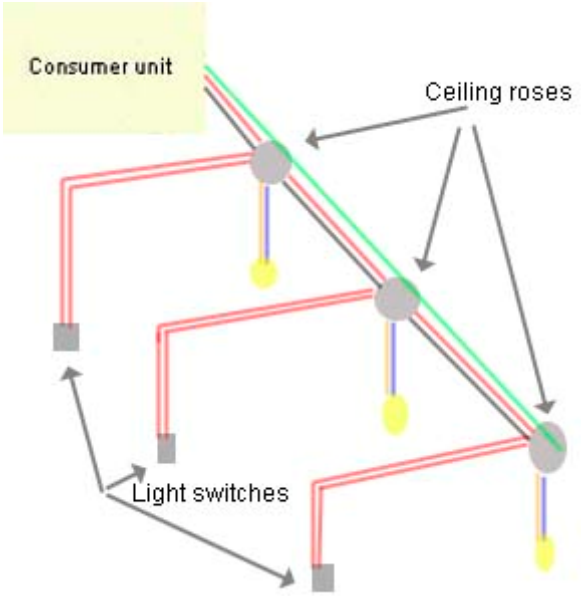
HOW A LIGHTING CIRCUIT WORKS

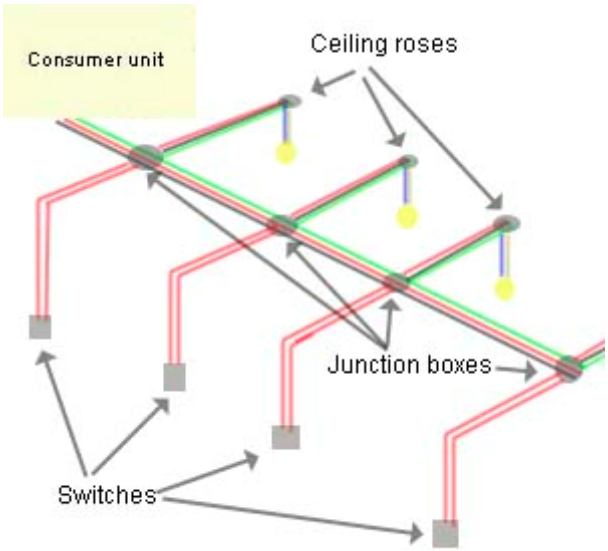
Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.

To understand fully how a lighting circuit works you need to understand about the principle of switching. This can be seen in our **lights and switches project**. Light switches, sockets, cables and tools can be bought by clicking on any of the images.

There are two types of popular lighting circuit. The first one, shown below, takes power from the **consumer unit** to the first ceiling rose. It is then taken from the ceiling rose, through the switch and back to the ceiling rose where it then carries on to the next ceiling rose. This carries on until it is looped all round the house and is called the loop circuit or system. You can understand more about the ceiling rose and switch connections in our **lights and switches project**.



The second system in popular use is the **junction box** circuit or system. Power is taken from the consumer unit to the first junction box. The live is interrupted by the switch wiring and the circuit is carried on to the next junction box. A cable is run from the junction box to the light, usually via a ceiling rose.



Usually 1mm sq. cable will be used for lighting. A lighting circuit can serve up to 12 x 100W bulbs. Using 1mm cable is allowed for up to 95meters of circuit length. This does not include the switches which should be wired in switch wire which contains 2 red cores. If you have longer lengths to cover, 1.5mm squared cable can be used and the maximum length allowed using this is 110m.

To avoid the house being in total darkness if a fuse should blow or trip, lighting circuits are split into upstairs and downstairs. If a cartridge fuse is used it should be rated at 5amps, if an MCB is used it should be rated at 6amps.

Please also check the rules very carefully for ring mains and radial circuits. You are limited in the length of cable you are allowed to use in both circuits and long spurs could make you exceed the limit. If this is the case you are asking the circuit to use much more energy than the circuit is designed for. More energy = more heat and cables can catch fire. Part P of the new building regulations could involve a check on any additional circuitry by qualified electricians when you sell your home. This can affect your sale, you could be breaking the law and your house insurance may not be valid. Please be absolutely sure you know what you are doing and get all of your work checked by a qualified electrician.