

# Lighting needs of houses in newbold crossing

[Life](#)



## LIGHTING NEEDS OF THE HOUSE Glare problems; snowor bare ground

Newbold is situated in the rural north-west sector of NSW, with Clarence River been the main body of water that passes directly through the area. According to results conducted by the Department of the Environment, Water, Heritage and the Arts (2009) the turbidity of this large body of water appears to be fair to poor. Turbidity takes into account suspended solids in the water and measures the clarity, absorption of light and the amount of light which gets scattered causing little to no glare to houses on the banks of the river.

The topography of Newbold is mainly flat with a couple of gentle slopes, which consists of grass land, bare ground and the remainder of the area been surrounded by trees. As the majority of the days throughout the year are sunny with little or no overcast shadows. This means that there is an abundant amount of sunlight which hits the pasture and bare ground with the majority of the amount of sunlight been absorbed with small amounts uv-rays that bounce off and create minimal to no discomfort to the eyes.

Pretoria in South Africa is geographically the same in essence as Newbold Crossing in NSW as the same phenomena with glare occurs there. Clarence Way, Newbold NSW 2460 <http://maps.google.com.au/maps?hl=en&tab=wl> Natural and artificial methods of lighting Ndebele houses in Pretoria, South Africa only had one opening which was the entrance into the house. As displayed in the picture below the entrance was typically facing the south, this meant that minimal amount of light entered the building. The source of light came from a fire which was set in the middle of the hut.

Image 1 Ndebele traditional huts Traditional houses in Pretoria, South Africa have always aimed at eliminating the maximum amount of sunlight that could penetrate their huts. But through the years their huts have evolved and changed due to the influences that they had from the Sotho and Pedi neighbours. In respect to the dimensions of the entrance of their huts, they have gotten bigger meaning that further light could enter the building. This concept is similar to houses first built in Newbold Crossing.

Initially they had small window dimensions, as they thought this would minimise the amount of heat that would enter the building, but they suffered from cold nights and low levels of lighting in houses. Soon they developed a new concept where they would have larger window dimensions to allow light into a house so that rooms would be illuminated, and so that relatively low amount of heat would be retained within the household for the cold night, making houses thermally more comfortable. This same concept led to the idea of large windows being incorporated into Newbold Crossing.

The concept has developed as houses in this region have solar passive design. The houses constructed have specific eave dimensions to counteract the amount of sunlight the building takes in. In the winter the sun has a low angle in respect to the horizon of the earth, and the maximum amount of sunlight is absorbed to maintain the building warm and well lit up. But in the summer the angle at which the sun is in respect to the horizon to the earth is greater, this is where the eaves are used to counteract the effect of direct sunlight by the building.

To further avoid the abundant amount of direct sunlight, properties in Newbold have trees located in-front of large windows. In the centre and other areas of a house that sunlight does not reach, a skylight is put in place to aid with natural lighting and avoid carbon footprints. The artificial method of lighting in Newbold is through incandescent light bulbs and some of the newer houses use halogen downlights. But the Clarence Valley Council (corresponding council of Newbold) has set up initiatives and emphasised the use of compact fluorescent lights which have less wattage over but in turn does not require the same amount of energy to run, therefore it uses less electricity and minimises carbon footprints. Taking in mind that there is plenty of sunlight throughout the whole year into households, so artificial lighting should only be used during the evening or for tasks that are complex and require good lighting. REFERENCE Australian Governement, 2009, Department of the Environment, Water, Heritage and the Arts, viewed 9 May 2010, Dalton, J 1808, A new system of chemicalphilosophy, Deansgate, London.