



6 July 2023

Pumula Lodge, Knysna – Eco friendly establishment;
GREENING OUR BUSINESS

Pumula Lodge was established in 1997. The Lodge is geared towards birders and lovers of nature, so a general awareness of the environment is an integral part of the ethos of the establishment.

How we contribute:

1) ENERGY

a) Lighting:

- All external security and garden lights use energy saving LED Lights. These are controlled by either timers or day/night switches.
- The lighting in the guest bedrooms and bathrooms use LEDs.
- A timer to switch off at midnight controls the pool light. This light is not used in low season.

b) Heating:

- Normal geysers are used for generating hot water. Four of the geysers have vacuum tubes which use solar energy to assist heating the water. The fifth geyser is heated using a very efficient heat pump. Timers are used to minimise any unnecessary heating of these geysers. The thermostats are turned down to a minimum acceptable temperature.

- The guestrooms are heated using under-carpet heating. These are controlled with thermostats and timers which optimise the heating of the rooms. No electric blankets are used but hot-water bottles are supplied.

c) **Thermal Insulation:**

- All the geysers are covered with insulated 'Geyser Blankets'. Exposed hot water pipes are also lagged with isotherm.
- The first floor ceiling is covered with 50mm isotherm.
- The lodge faces due west. During hot summer afternoons 80% shade-cloth dropline curtains are lowered along the entire ground and first floor thereby keeping the building cool and eliminating the need for air-conditioning. Ceiling fans are supplied in the rooms
- Roof surfaces are painted a light beige colour lead-free paint to reflect heat from the sun, thereby assisting in cooling the building in summer.

d) **Solar PV Cells, Inverters, Batteries:**

- Nine panels of 550Watt each (total 4,95kW) are installed on the roof.
- These panels are connected to 2 x 5kW inverters and 2 x 5kWh batteries.
- The Solar power generated by this system is used to power the first floor of the building and lights in guest rooms at all times. Plugs for appliances and cell phone charging available in central area. Also powered by this system is the laundry and pool. Hot water geysers are solar assisted using vacuum tubes heated directly from the sun.
- Heavy consumers such the stove are powered by the Municipal supply.
- This system has resulted in a substantial saving in electricity costs.
- The system was installed early September 2021.
- Wi-Fi available 24/7

e) **General:**

- During low season fridges not in use are switched off.
- Small kettles (2 cups) are supplied in the guest bedrooms thereby eliminating any unnecessary boiling of water.

2) WATER

a) **Harvesting:**

- All gutters and down-pipes are directed into storage tanks with a total storage capacity of 36500l of rainwater.
- A 3m deep well has been dug in the garden from which 'ground-water' is pumped to a dedicated tank. The water table varies but on average about 1300 litres of water is pumped daily from this well and used for irrigation purposes.
- The stored rain water is essentially used to water the garden, top-up the pool and act as a backup should there be a problem with the municipal supply.

b) **Showers:**

- All showerheads are fitted with low-flow devices.
 - Signs are posted in each bathroom encouraging guests to save water.
- c) **Grey Water:**
- It is not feasible to harvest the greywater.
- d) **Plants:**
- The majority of plants in the garden are indigenous to the area and therefore 'water-wise'.
 - The few non-indigenous plants are non-invasive, waterwise and comply strictly with the CARA legislation.(Conservation of Agricultural Resources Act, Act no. 32 of 1983).
 - A small herb garden supplies the needs of the kitchen.

3) **RECYCLING**

- a) **Glass/Paper/Tins:**
- All glass, paper, tins etc. are separated from the normal kitchen garbage and deposited in dedicated plastic bags for collection by the municipality.
 - Guests are also encouraged to separate their garbage accordingly.
- b) **Containers:**
- Containers for foodstuff such as fruit juice, yoghurt, cleaning material, toilet rolls, eggs etc. are returned to suppliers for re-use and also supplied to creches.
 - Containers for liquid handsoap and air fresheners are re-filled by the staff.
- c) **Compost:**
- Garden refuse such as grass and leaves is deposited on the compost heap.
- d) **Worm Farm:**
- All biodegradable kitchen waste (except meat) is liquidized and fed to the earthworms.
 - Partly decomposed garden refuse is also fed to the earthworms.
 - The worms produce pH-balanced compost for use in the garden.
 - It is not feasible to harvest the 'Worm Tea' as the crates containing the worms are exposed to rain.
- e) **Birds:**
- Three bird feeders (seed, nectar and fruit) are filled at regular intervals. However, care is taken that the birds do not become dependent on these feeders. A bird bath is also installed in the garden.

4) **WASTE DISPOSAL**

- a) **Garbage:**
- Any garbage, which cannot be re-cycled, is put in black plastic bags and collected by the municipality once a week.
 - Weeds are removed by hand.
- b) **Toxic Materials:**

- Any toxic materials such as batteries, energy saving bulbs, neon tubes, paint etc. is deposited in dedicated containers supplied by the municipality in town.
- Printer cartridges are returned to the supplier or deposited at dedicated shops.
- Expired medicine is deposited in dedicated containers at selected pharmacies.

5) POISON

a) Pesticides

- The use of pesticides is reduced to the absolute minimum and is almost non-existent.
- Weeds are removed by hand

b) Flyscreens

- At least one window per bedroom is fitted with a flyscreen thereby eliminating the need for mosquito repellent.

6) CARBON FOOTPRINT

- Our Carbon Footprint is calculated using the carbonfootprint.com website. It is by no means an 'absolute' figure as there are too many variables to take into consideration. Instead this figure is treated as 'relative' and we intend updating it regularly so that we can track our progress in reducing it.
- Total Carbon Footprint: 1st Mar 2014 – 28 Feb 2015 = 22.43 metric tons CO₂. This was before we installed the 4 x solar panels and changed most of the lighting to LEDs.
- Total Carbon Footprint: 1st Jan 2017 – 31 Dec 2017 = 14.15 metric tons CO₂ (average of 2.36 ton per person). Therefore it can be seen that the solar panels made a huge difference in reducing this figure.
- Total Carbon Footprint: 1st Jan 2018 – 31 Dec 2018 = 10.92 metric tons CO₂ (average of 1.6 ton per person).
- Our Carbon Footprint has not been done recently due to changes in occupancy (Covid) and the installation of our Solar System. So the consumption and supply of electricity has altered substantially. A new Carbon Footprint will be calculated once conditions return to normal.

7) GENERAL

- Local suppliers are supported as much as possible
- All soaps etc used are biodegradable.
- The pool uses a salt-chlorinator to generate the required chlorine.