

## **RPM Environmental Stewardship**

While the RPM houses on Big Pine Key have been built to provide the most comfortable, fully equipped, and cost effective get-away possible, we have gone to great lengths to consider our environmental impact on this fragile Keys community. We have built into our houses environmental details to help support low energy consumption.

### **Some of the environmentally friendly features of these homes include:**

- Each home includes 1200 gallons of **underground cistern storage**. These cisterns accumulate rain water from roof run-off which is available for use at the docks via yellow hose bibs.
- A **heat recovery** system is tied into each air conditioning condenser unit. Heat from refrigerant condensing coils is absorbed by circulating water used for domestic hot water within the house. This system not only reduces the amount of run time for the conventional electric heating coils, but also increases the efficiency of the air conditioning process.
- **Closed cell foam insulation** was sprayed under the deck and roof trusses in each building. This process provides comparable insulating values to conventional fiberglass systems. The tremendous benefits of this process lie in the sealing and humidity control available by enclosing the attic space and under decking. In Florida, humidity typically accounts for over 40% of an air conditioner's work in a typical home. By sealing the house with this foam system, infiltration of humid air is reduced to the extent that we are able to provide lower relative humidity, and better temperature control with an air conditioner that is 2/3 the size of one typically designed for a home of this size.
- The A/C system includes a **high efficient condenser unit (outside section) and a variable speed drive air handling unit (inside section)**. The combination of these systems uses less energy while maintaining the desired temperature more closely. Benefits include less on-off noise, more consistent temperature control, and lower electric consumption.
- Each building has been configured to take advantage of overhang and natural landscape **shading**. By shading from the high heat loads of direct sun with native foliage along the southern exposed building surfaces, we are able to increase thermal and visual comfort while significantly reducing air conditioning loads.
- We have attempted to provide a visually pleasing environment while retaining patches of the **natural vegetation landscaping** found in the Florida Keys. Unique to Big Pine Key are areas of hardwood hammocks and the presence of the endangered Key Deer. Natural habitat is tolerant to the salt, wind, rain, ground conditions, and heat found in this tropical environment. By maintaining as much natural vegetation

as possible, we are able to eliminate the need for water and fertilizer as well as support the Key Deer habitat.

- High efficient lighting systems used in our homes include **compact fluorescent technologies**. CFs typically use a quarter of the energy of a standard incandescent light and lasts 5 to 10 times as long... reducing waste. We have also minimized “light pollution”, light sources directed such that lighting capacity is wasted and other people, animals, and our own view of the beautiful Keys sky at night is diminished.
- The two bedroom guest house includes an **on-demand, tankless hot water heater**. This technology, perfect for occasional use hot water needs, allows for instantaneous hot water without the need to maintain a tank filled with 140 degree water at all times.

### **Interesting factoids from resources available through the USDOE and BP on the web:**

- A typical US family produces approx. 18.4 Tons of CO2 per year... based on the emissions from energy consuming products and services.<sup>1</sup> This is equivalent to the amount required to fill 4.5 olympic-sized swimming pools.
- An average car driven in the US produces 11,760 lbs of CO2 per year.<sup>2</sup>
- One kW of demand savings (100% load factor) can save 10,162 lbs of CO2 per year (nearly one American car!).<sup>3</sup>
- One fully grown forest tree consumes approx. 636 lbs of CO2 per year.
- The State of Florida is responsible for emitting nearly 300 million Tons of CO2 last year.<sup>4</sup>

### **Consider your impact...:**

- **Recycle** as much waste as possible... note the pick-up schedule available on property. We have extra bins / cans available for recycling to help prioritize.
- **Capitalize on the A/C efficiency**... keep doors and windows closed when A/C is on. Maintain set point temperatures at 65 degrees in the winter and 78 in the summer. Remember, the A/C system is designed to reduce humidity in the air... dry 78 degrees feels cooler than moist 78 degrees. In addition, we have ceiling and portable fans throughout the houses.
- **Walk / bike / kayak**... The opportunity to get close and personal with Key Deer, Iguanas, birds, water, and the wild residents and visitors are an awesome advantage of vacationing on Big Pine and No Name Keys. Bikes and kayaks are available.
- **Purchase locally produced products**. Products grown or made locally and sold to end users use less resources to package, ship, and distribute.

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<sup>1</sup> British Petroleum (www.bp.com)

<sup>2</sup> www.climatecrisis.org

<sup>3</sup> FPL

<sup>4</sup> US Dept of Energy

- Use only the water you need. Minimize shower time (or take one with a friend!) and don't forget the outdoor showers during warmer months... very refreshing after a day on the boat! Remember the cistern water is available through the yellow hose bibs at the docks.