SILENT AIRE™ COOLING AND VENTILATING SYSTEM

At the heart of our system is major reduction of the largest most energy intensive component of a dwellings carbon footprint in the Southwestern U.S.- **AIR CONDITIONING**

This component is first addressed though mitigation of thermal loading though walls, windows, skylights, and trapped heat in attics.

In new construction through design in remodel, retrofit situations though shading, active and passive, venting active and passive, insulation, etc. In coastal and mountain zones we use nature's diurnal swing between day and night to night cool the home with our unique patent pending Silent Aire™ Horizontal Axis Ventilation System which provides induced air at a high volume, low rpm. The system is quiet and does double duty cooling for the home and attic.

The Silent Aire™ Horizontal Axis Ventilation System flushes the home with 50° to 60° air at night while you sleep. This system converts your home into a passive cooling system during the daytime you will sleep with blankets during the summer at night.

In new construction we integrated passive thermal absorptive materials, rock, tile, marble, etc. In desert zones, we use a combination of the Silent Aire™ Horizontal Axis Ventilation System and another unique patented system Core Cool™.

This is an evaporative indirect-direct pre-cooler that is installed as a surround around an air conditioner raising its seer level by 25 to 50%. Modulating between systems according to temperatures at night, the Core Cool ™ pre-cooler and Silent Aire™ tandem reduces air-conditioning loads from 60% to 80% in the summer season in the coastal, valley, and mountain zones to 50% to 75% in the desert zone. In coastal and mountain zones, the Silent Aire™ alone can provide 80% to 100% of the cooling. See www.marksnyderelectric.com for additional product information.

A Case Study

It is always best to try to block as much of the UV as possible. We prefer green shade in existing residences with deciduous trees that block the sun in

summer and provide sun in the winter when the leaves fall. The absolute best is planning your home for maximum efficiency.

We are able to get in on the ground floor with many of our clients when they remodel or build a new home. We recently did a shop video of the John and Judy Johnston residence, 4,000 square feet on 7 acres in Valley Center, CA where we did an entire energy efficiency and Solar PV program: http://www.marksnyderelectric.com/johnstonresidence.htm

They have long patio overhangs that shade in the summer and still provide winter sun to compliment an energy efficiency lighting package. They have all Energy Star appliances.

In Valley Center, California, it can get to be 110-115 degrees in the summer. I have a 20-acre organic farm at the southeast end of the valley (in Valley Center). The Johnston's are on the northwest side where it is 5 to 10 degrees warmer than me due to the west winds that I get. The Johnston's also irrigate with a well. I calculated their use and we figured extra capacity for a future pool and more lighting for landscaping. We installed a 6 kWh tracking Solar PV system, which provides 50% more power seasonally than a fixed rooftop or ground mount system. We are producing 1,350 kWh of power per month.

We used two (2) of our Silent Aire ™ Night ventilation systems and we vented the attic very well. Our ventilation system uses the diurnal swing of the night temperature in Valley Center our days can be 100 to 110 and the (summer) nights drop into the high 50"s or low 60's this chills the house at night automatically with an outdoor sensor and an indoor thermostat. They sleep at night with blankets in the summer and their home has tile, marble and wood floors like yours, absorbs the stored cool energy all night long. During the daytime, this stored cool energy "radiates" out, keeping the house in the mid 70°s. We had record high temperatures this summer and they used their AC ten times. After one full year they had zero (0) electric bills and we produced an excess of $200.00 in power. All their neighbors spent $1,500.00 to $1,800.00 every month for three months to air condition.

The electric rates are presently 0.28¢ per kWh in San Diego County with San Diego Gas and Electric. We figured a six-year pay back for their Solar PV and Ventilation System based on current rates. Our rates are going up to 0.47¢ per kW for top tier in January (see notice attached). With this price hike the system payback will be 3.45 years.

The off gassing process from new construction was a concern of the Johnston's. They used as low VOC stains and paints as possible. Judy has allergies. With Silent Aire ™ the air quality was greatly improved in their home and she did not suffer from toxic fumes like most new homeowners after construction.

Indoor air quality is much worse that outside air even in Los Angeles. We filter the air with two layers of filtration a pleated filter for larger particles and dust, and an electrostatic washable filter for allergens and microbials. Many of our clients use the Silent Aire ™ System year around to clean their air during the daytime or nighttime. You can use the system during parties even in the winter to flush out perfumes and cooking odors or change air during periods of illness so bad air is not re-circulated by your heating system.