

## OUTLINE FOR GREEN CONSTRUCTION

What do you want out of your home or what do you want it to do for you?

Rate 1-10 with  
10 most important

### 1. In what part of green are you interested?

- Are you concerned about your pocketbook? \_\_\_\_\_
- Are you concerned about the cost of green efficiency? \_\_\_\_\_
- Are you concerned about your posterity's pocketbook? \_\_\_\_\_
- Are you concerned about the environment (Global warming or just pollution)? \_\_\_\_\_
- Are you concerned about relying on enemy nations for energy? \_\_\_\_\_
- Are you concerned the environment will not replenish itself? \_\_\_\_\_
- Are you interested in a more comfortable home? \_\_\_\_\_
- Are you concerned about an electrical power shortage? \_\_\_\_\_
- Are you concerned about a water shortage? \_\_\_\_\_
- Other \_\_\_\_\_

### 2. Who provides which part of a quality Green Design?

There are many aspects, visions and interpretations of Green.  
There are a number of players involved to effect a Green Environment.  
There are many combinations of "Green" Elements of a Green Design (i.e. Heat Pump A/C unit combined with Geo-thermal). Not all items work well with a given home and site.

For some, dollars are primary consideration, for some ego, for some genuine concern for posterity. Whatever your reason, the purpose must be defined in order for the designer to develop the optimum product for the home owner.

- THP Home Designer (Architect)  
Black & White Structure \_?\_ glazing
- THP Interior designer (Finishes)  
Appliances, fixtures, plumbing, lighting --- Execution!!
- Home Builder HVAC Contractor Plumbing Contractor
- Landscape Designer (inc. irrigation)

Practical (Impractical or deceptive)

### 3. NAHB Green Building Certification:

National Association of Home Builders - Standard for Green Certification  
Which level, if any, might you wish to achieve:

- Bronze
- Silver
- Platinum
- Emerald (highest)

## 4. Energy Options:

- Electricity (Secondary Fuel)
  - Provided by Fossil Fuel (Coal, gas)
  - Energy Company
  - Generator
  - Solar
  - Hydro (Geo Thermal)
  - Nuclear
  - Wind
- Fossils Fuels:
  - Natural Gas
  - Propane
- Solar
- Wind
- Hydro
- Combinations \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_

Depends on Availability and Operation of Energy Source (Shipping, maintenance, etc.)

## 5. Air conditioning: (Fuel options-typically available)

- Electricity
- Electricity combined with Geo-thermal
- Gas (Natural or Propane)
- Passive solar

## 6. Means of Reducing Energy Demand – Cooling:

- Less usage (Consumer minimization)
  - Smaller volume of home (i.e. lower ceilings)
  - (however, a cathedral ceiling can be good if we use outside air w/ceiling fans)
- Combine with ceiling fans
- Combine with Geo-thermal
- Increase insulation factor
- Decrease air infiltration
- Minimize glazing, especially south and west (house south of \_\_\_\_\_ latitude)
- Protect south and west glazing from sun
- Home orientation consideration is important
- Landscaping (especially deciduous trees)
- Ventilate attic (in south) is significant
- Minimal penetration into ventilated attic
- Ventilate roof (metal roofs) (space between roof metal and deck)
- Ventilate wall (space between veneer and sheathing)
- Encapsulate A/C system within Air-conditioned space, however, continuing combining the use of a ventilated attic.
- Minimize number of light fixtures where appropriate and use LED bulbs

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- Use A/C system which is energy efficient: Heat pump, high seer, split system (two speed compressor); zoned where appropriate.
- More efficient appliances (don't give off as much heat)

### 7. Reduction of Energy Usage Heating

- Less usage (Consumer minimization)
  - Smaller volume of home (lower ceilings)
- Combine with ceiling fans
- Combine with Geo-thermal
- Increase insulation factor
- Decrease air infiltration
- Home orientation
- Zero penetration into ventilated attic
- Encapsulate Heating system within Air-conditioned space but not in an attic
- Use Heating system which is energy efficient: Heat pump, high seer, split system (two speed compressor); zoned where appropriate, gas fuel.
- Where possible and if possible, utilize solar heat gain with glazing on south and west. (however, usually not practical [doesn't work] in South). The Solar Storage (radiant material) cannot charge quickly enough. Weather in the south changes too fast during the day --- cold in evening & morning and hot in daytime

### 8. Water Conservation

#### Water catchment systems

- Entire water usage (Drinking, irrigation & sanitary service)
- Irrigation only
- Grey water utilization for irrigation only
- Grey water utilization (take washing machine, showers and lavatories & use for commodes) [Not yet practical for residential usage]
- Irrigation & waste water

#### Plumbing Fixture Usage

- 1.28 gallons commode
- Low usage shower heads
- Energy star dishwasher
- Energy star clothes washing machine
- Water heater
  - Solar
  - Hybrid (Heat pump)
  - Marathon
  - Heat recovery

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Landscape Design & Materials (including irrigation system)

Maintaining & operating:

Some systems are very difficult to operate and maintain.

Water catchment system including drinking water and cleaning water require substantial care taking.

Passive Solar in the South require adjustments

Wind Generator repairs are expensive

Appliances:

- Use energy star low water consumption washing machine
- Same for other appliances (Refrigerator, ovens, ranges, clothes driers, etc.)

9. Renewable Products:

One must weigh the trade-off of the environmental effect of its production against the installation effects when using a renewable product. For example, the installation of a "green" product might be more harmful to the environment than the effect of using a non-renewable product.

Products (Material vs. energy and labor to produce – shipping)

Installation [materials (i.e. petroleum based adhesives), labor]

Comfort

Appearance

10. Appliances:

- Energy star rating, typically is a reliable guideline toward energy conservation.