ATTACHMENT 8: GREEN ADVISORY GUIDANCE
(For Green Fixed and Variable Significant Additions)

PAEs are encouraged to consider this advisory guidance when developing the recommendations for Green Fixed and Variable Significant Additions.

FIXED

1. **Shower Heads and High-Efficiency Toilets:** Consider a maximum 2.5 gallons per minute for shower heads. Consider high efficiency toilers (1.3 gallons per flush). Source: EPA's Watersense program (www.watersense.gov).

2. **Insulation:** For identified insulation upgrades and improvements, consider formaldehyde-free fiberglass batt insulation or 100% borate-based cellulose insulation (avoid ammonium sulfate–based products); install so that there are no gaps, voids, wind intrusion or compression of the insulation. The insulation and the air barrier (e.g. sheetrock) should be continuous and aligned. Consider insulation levels that meet or exceed IECC 2006 required R-values.

3. **Water Heaters:** Consider hot water heaters with a minimum Energy Factor of 0.61or a water heater with an EF of 0.58 with an insulating blanket of R12. Source: EnergyStar web site.

4. **Heating and Cooling Equipment:**
    a. Equipment should be appropriately sized using Air Conditioning Contractors of America's (ACCA's) Manual J or an equivalent protocol.
    b. ENERGY STAR labeled equipment should be installed if cost-effective.

VARIABLE

5. **Kitchen and Bath Exhausts:** Consider adequate ventilation by meeting minimum requirements in sections 4-7 of ASHRAE 62.1-2004.

6. **Flooring (other than carpet):** Consider natural linoleum for resilient flooring. Instead of conventional hardwood flooring, consider Forest Stewardship Council (FSC) certified, reclaimed or engineered wood, cork, or bamboo. Consider installing as a glueless floating floor or glue with a low- or no-VOC adhesive. Consider factory-applied finishes, or seal with a low- VOC product.

7. **Flooring (carpet):** In common areas, consider commercial-grade carpet with recycled content and low VOC emissions. In residential units, consider natural fiber carpet or recycled-content synthetic fiber carpet. If a carpet underlay is needed, consider a high recycled-content product with low VOC emissions.

8. **Roof:** Consider roofing materials that are durable, lasting 40-50 years that minimizes rooftop temperatures. For low-slope or flat-roof buildings located in urban areas or where air conditioning is necessary, cool roofing materials should be considered. Cool roof materials typically have a reflectance greater than 0.75 and emittance greater than 0.70. (An exception is concrete and clay tile roofing materials, where reflectance must be greater than 0.75, and emittance must be greater than 0.40, to qualify as 'cool roof' materials).

9. **Cabinet Boxes:** Consider medium-density fiberboard (MDF) with no added urea formaldehyde, or exterior grade plywood and totally seal all edges. For cabinet faces, consider solid wood, preferably reclaimed, reused or FSC-certified. Otherwise, consider seal the edges of the cabinets.

10. **Trim:** generally recommended if feasible at reasonable cost and if owner concurs; consider composite material with no added urea formaldehyde, consider recycled plastic or FSC-certified wood. Consider durable wainscoting, chair rails, and corner guards to protect walls from damage and to reduce maintenance requirements.

11. **Air and Thermal Barriers:** Consider the following advisory guidance -
    a. Attic hatches should be weatherstripped and insulated with foam or fiberglass batts.
    b. Any penetrations should be sealed and air pathways from the attic to conditioned spaces should be blocked.
    c. Shared walls and ceilings between attached garages and living spaces should be sealed.
    d. Consider using interior gypsum board, exterior sheathing, or both as a continuous air flow retarder. Exterior stucco may also serve as an air flow retarder.
    e. Caulk around window and door woodwork, sealing where the frame meets the wall and all other joints in the window woodwork with a clear sealant.
    f. Seal around all ceiling fixtures, heat registers, medicine cabinet, bath tub, kitchen cabinets, drain and water pipes where they enter the wall in the kitchen and bath, and any other interior or exterior wall penetrations.
    g. Weatherstrip windows and doors.
    h. Install storm windows on all single-glazed windows.
    i. Insulate ducts located in unconditioned spaces to at least R-6.
    j. Seal ducts so that duct leakage to outdoors is $\leq$ 4 CFM per 100 square feet.

12. **Blinds and Window Coverings:** Interior blinds or window coverings with exterior shading for all windows– either awnings or trees to block solar gain; consider exterior shading near windows, particularly east and west facing.

13. **Refrigerants:** Zero use of CFC-based refrigerants in new base building HVAC&R systems-recommended to reduce ozone depletion. When reusing existing base building HVAC equipment, consider completing a comprehensive CFC phase-out conversion prior to project completion.

14. **Buy Local:** Consider locally & regionally (less than 500 miles) manufactured, harvested, or assembled products to reduce transportation impact and improve local markets.

15. **Reclaimed/Reused Materials:** Consider using reclaimed & reused materials or materials with recycled content whenever possible, such as brick, framing lumber, recycled concrete and aggregates, recycled gypsum board, and fly ash concrete.