Residential "*Tropical Green Building*" Certification Program

The Island Green Living Association (IGLA) in its continuing effort to promote sustainable and environmentally responsible development and construction in the U. S. Virgin Islands has developed a residential *Tropical Green Building*" Certification Program.

The intent of this program is to recognize and reward homeowners, builders and construction professionals who have demonstrated excellence in the construction of residential buildings or structures which promote the protection and preservation of the spectacular natural beauty and environment of the U. S. Virgin Islands.

IGLA "TROPICAL GREEN BUILDING" **CERTIFICATION of EXCELLENCE AWARDS** will be given annually at an awards function. The application and inspection process can be anytime during the year. Award winners will receive a bronze plaque, suitable for mounting on the certified structure and Certificates Of Excellence for the entities involved; Owner, Architect or Designer, Contractor, Earth Works Sub Contractor, Plumbing, Electrical & Air Conditioning Sub Contractors.

CERTIFICATION LEVELS:

IGLA AWARDS THREE LEVELS OF GREEN BUILDING CERTIFICATION

5 STAR TROPICAL GREEN BUILDING: 90% of Checklist Items.

4 STAR TROPICAL GREEN BUILDING: 80% of Checklist Items.

3 STAR TROPICAL GREEN BUILDING: 70% of Checklist Items.

BUILDING TYPE	Total Points	3 Star 70%	4 Star 80%	5 Star 90%
Natural ventilation	60	**42**	**48**	**54**
Natural ventilation w/ pool (Pool adds 2 points)	62	**44**	**50**	**56**
AC building (AC adds 4 points)	64	**46**	**52**	**58**
AC building w/pool (AC building/ pool adds 6 points)	66	**48**	**54**	**60**

IGLA Residential *"Tropical Green Building"* Certification Checklist

1. Site Planning and Design.

Site Planning and Design achieves the functional requirements of the development with minimum site disturbance and maximum environmental protection.

- ❑ 1.1 A native/natural vegetation greenbelt is retained along public or estate roadway, except for a 20' maximum driveway right of way.
- ❑ 1.2 A native/natural vegetation greenbelt is retained around all sides of property in areas required for building setbacks. (80% of property line)
- ❑ 1.3 Surfaced (concrete, pavers or gravel) onsite driveway and parking areas to minimize erosion from storm water runoff.
- ❑ 1.4 Permeable surface used to filter runoff back into the ground.
- ❑ 1.5 Storm Water Drainage and Erosion Control measures implemented to minimize site run off and pollution of the environment.
- ❑ 1.6 Collection and retention of storm water on the property through the use of berms, swales, and settlement terraces.
- ❑ 1.7 Vegetation cleared on construction site recycled and used for down slope cleared brush diversion berms during construction rather than burned or taken off site.
- ❑ 1.8 Permanent compost area established on site for landscape trimmings and organic kitchen waste.
- ❑ 1.9 Driveway and onsite parking areas are well integrated into the site plan to minimum site excavation.
- ❑ 1.10 Adequate onsite parking areas sited or screened from public or estate roadways.

2. Building Structure.

The building or structure has been designed to be responsive to and reflective of tropical architectural design considerations, including trade winds and sun paths.

- ❑ 2.1 Building and site planning are in harmony and balance with the natural environment.
- ❑ 2.2 Building structure is well integrated into the natural landscape so as to require minimum site excavation and cuts into the hillside.
- ❑ 2.3 Building is sited to take advantage of natural breezes and or trade winds and maximizes the use of natural ventilation within the structure.
- ❑ 2.4 Building design incorporates "passive solar design features". Masonry walls facing south, southeast or southwest are shaded with natural vegetation, porches, galleries, trellis's or other design features to minimize heat gain on the walls and within the structure from the sun during the day.
- ❑ 2.5 *Building roof is insulated.
- ❑ 2.6 *Non Air conditioned buildings have either an insulated roof or a radiant barrier installed in the roof substrate.
- ❑ 2.7 *Recycled materials used in the structure.
- ❑ 2.8 Low on no VOC paints, primers and wall coverings used as specified by greenseal.org/standards/paints.htm.
- ❑ 2.9 *FSC (Forest Stewardship Council) Certified, sustainably harvested lumber is used with the structure. Tropical hardwoods must be FSC certified.
- ❑ 2.10 Building integrated hurricane protection system installed (or readily available to easily install) on all openings.
- ❑ 2.11 Tropical vernacular (particular to a region) architectural design elements such as hip roofs, porches and galleries to shade the walls, lack of cantilevered overhangs, used in the design.

(* Submission requested)

3. Water Management.

A Water Management & Conservation Plan for each building or structure has been developed.

- ❑ 3.1 Use an ecologically balanced On Site Sewage Disposal System 'OSDS' (where not connected to a municipal sewer system). Mechanical treatment system, rock/plant filter, subsurface flow constructed wetland or a composting toilet. Traditional Septic/leach field systems are not approved for use.
- ❑ 3.2 Use a zero energy treatment system. (Non-mechanical system) or Composting Toilet.

- ❑ 3.3 Gray water collection system to collect rainwater from surfaced areas, (driveways, parking areas, decks, porches and patios) for reuse on the property (landscape irrigation system).
- ❑ 3.4 Dual flush water conserving toilets installed.
- ❑ 3.5 Low flow shower heads installed. (2 GPM)
- ❑ 3.6 *Energy Star dishwasher. (Appliance Name & Model #) or no dishwasher used.
- ❑ 3.7 * Energy Star washing machine (Appliance Name & Model #), or no washing machine.
- ❑ 3.8 Building does not have a swimming pool. (If building does have a pool, see 4.15)

4. Energy Conservation & Management .

Design an Energy System that maximizes the use of energy conservation techniques and the use of renewable energy.

- ❑ 4.1 Solar hot water heating or demand system (tankless electric or gas).
- ❑ 4.2 Hot water plumbing lines are insulated.
- ❑ 4.3 *On demand hot water re-circulating system is installed, eliminating water wastage when the hot water tap is turned on.
- ❑ 4.4 2 kW or larger renewable energy systems used. Photovoltaic (PV, solar) and/or wind energy systems. (Off grid, back up, net metering)
- ❑ 4.5 *Grid tie, (PV or Wind), net metering system installed reducing average utility consumption by 25%.
- ❑ 4.6 Renewable energy monitoring system installed.
- ❑ 4.7 Clothes drying yard or area, with clotheslines for solar drying.
- ❑ 4.8 Gas or induction stove is used instead of electric.
- ❑ 4.9 Low voltage or solar (landscape) lighting is used.
- ❑ 4.10 50% of lighting is LED or Compact fluorescent.
- ❑ 4.11 * Energy Star refrigerator is used. (Mfg. name & Model #) www.energystar.gov/index.cfm?fuseaction=find_a_product.
- ❑ 4.12 *Energy Star ceiling fans are used. (Mfg. name & Model #) www.energystar.gov/index.cfm?c=ceiling_fans.pr_ceiling_fans
- □ 4.13 Building design and orientation does not require air conditioning.

4.14 Air Conditioned Buildings.

Air Conditioned buildings **should be Energy Star compliant.**
Reference: www.energystar.gov/index.cfm?c=new_homes.nh_features

- ❑ 4.14.1 *Air Conditioned buildings are sealed and the roof is well insulated.
- ❑ 4.14.2 *Building has an Energy Star approved energy efficient AC system, with a high SEER or EER Rating. (Submission required describing system including Mfg.

name & Model #'s.)
www.energystar.gov/index.cfm?c=cac.pr_central_ac

- ❑ 4.14.3 *Air-conditioned buildings windows and doors are Energy Star approved or equivalent.

ENERGY STAR Qualified Windows, Doors and Skylights Eligibility To be eligible for the ENERGY STAR, products must be rated, certified, and labeled for both U-Factor and Solar Heat Gain Coefficient (SHGC) in accordance with the procedures of the National Fenestration Rating Council (NFRC) http://www.nfrc.org/participantlist.aspx at levels which meet ENERGY STAR qualification criteria in the Southern Climate Zone.

Manufacturer search database:http://www.energystar.gov/index.cfm?fuseaction=windows_doors.search_windows

Energy Star qualified products database:
http://www.energystar.gov/index.cfm?c=products.pr_find_es_products

- ❑ 4.14.4 *Checklist item #2.4 is checked or the building walls are insulated. (Submit insulation specifications)

4.15 Swimming pools:

Residences with swimming pools **must be able to check both items below to be eligible for certification.**

- ❑ 4.15.1 Pool does not have an electric heater or is heated with solar panels or a heat transfer system.
- ❑ 4.15.2 Pool area does not exceed 800 square feet or if larger than 800 square feet has a pool cover installed.

***** (Submission requested)

5. Waste Minimization & Recycling.

Develop a process to minimize waste during the Construction phase and on-going Building Operations.

- ❑ 5.1 *Contractor has developed a definable waste minimization plan during construction.
- ❑ 5.2 *Building was demonstrably designed for efficient use of materials during construction.
- ❑ 5.3 Reuse of onsite fill material and stone for landscaping.
- ❑ 5.4 Contractor established and maintained a designated, contained, concrete truck wash out basin on site during construction.

***** (Submission requested)

6. Light Pollution.

Design an Exterior Lighting System that minimizes the amount of ambient light visible from outside the property.

- 6.1 No use of outwardly shining lights on buildings, patios and decks.
- 6.2 Use downward facing light fixtures on decks, pools and patios.
- 6.3 Use ground level fixtures for driveways, paths and landscape lighting.

7. Visual Impacts.

Ensure that the visual impact of the building is in harmony with the surrounding Community.

- 7.1 Vistas on owner's property respect adjacent property vistas.
- 7.2 Site design preserves the visual privacy of the property and adjacent properties.
- 7.3 Site is neat, clean and litter free.

8 Landscaping, Green Belts & Native/Natural Vegetation

The preservation of the existing natural vegetation of a site is the simplest and most cost effective form of landscaping. This vegetation is already well established on site and will survive in our extreme environment without constant irrigation. A considerate and effective landscape plan has been developed for the property to include:

- 8.1 *Rare native plant inventory and protection efforts established within property boundaries. (Submission requested)
- 8.2 Use of locally grown native plants within the landscape plan that are appropriate for the local micro-climate.
- 8.3 Use of non-invasive plants within the landscape plan.
- 8.4 Use of native/natural xeriscopic landscaping (plants that will survive in a dry climate) appropriate for the local micro climate.
- 8.5 Imported tropicals used in landscaping are concentrated around buildings for ease of watering and where the most environmental disruption has taken place during construction. As landscaping progresses outward from the habitable spaces it will transition from exotic to native.
- 8.6 *Natural and/or organic fertilizers, herbicides and pesticides are used in landscape maintaince. Check OMRI-Organic Materials Review Institute. www.omri.org
- 8.7 Fruit trees are planted on the property.
- 8.8 A organic vegetable garden is on the property

(* Submission requested)

9. Innovation in advanced Green Building Design and/or Technology. Bonus Points.

To encourage innovation in and implementation of tropical green building design and/or technology, Bonus Points are offered for specific

green buildings items incorporated in the residence, but not listed in Sections 1 through 8. In order for an Applicant to qualify for Bonus Points, the Residence must meet the minimum Three Star Certification Standards. Acceptance of items as Bonus Points is solely at the discretion of the IGLA Board of Directors. Three items are the maximum number of Bonus Points allowed. Approved Bonus Points will be added to the total number of checklist items scored. * Detailed Submission required.

- 9.1 _____
- 9.2 _____
- 9.3 _____
- 9.4 10 kW or larger renewable Energy System is installed.

End of Checklist

APPLICATION PROCESS: Applications may be submitted by any of the above referenced entities or jointly for residential buildings and or structures. Individual buildings will be inspected after an application for a Certification Inspection has submitted. Application forms are available on line at www.IGLAVI.org.

Application Fee: $700.* The application fee covers the cost of a professional building inspection and administrative expenses. Application Fee is payable in two payments. 50% with the initial application and 50% upon approval of Green Building certification after inspection.

Procedure to Apply for Certification: Please review the **IGLA Residential *"Tropical Green Building"* Certification Checklist** to determine if the structure in question may be eligible for certification.

File an Application for IGLA Certification Review.

IGLA Inspection and determination of eligibility and level of Certification.

IGLA Annual Certified Residential "Tropical Green Building" Awards Presentation.