Point System

There are three different levels of green building available to builders wishing to use these guidelines to rate their projects – Bronze, Silver, and Gold[1]. At all levels, there are a minimum number of points required for each of the seven guiding principles in order to assure that all aspects of green building are addressed and that there is a balanced, whole-systems approach. After reaching the thresholds, an additional 100 points must be achieved by implementing any of the remaining line items. The table below outlines the various green building level thresholds.

Points Required for the Three Different Levels of Green Building

	BRONZE	SILVER	GOLD
Lot Design, Preparation, and Development	8	10	12
Resource Efficiency	44	60	77
Energy Efficiency	37	62	100
Water Efficiency	~~6~~ 12	~~13~~ 26	~~19~~ 38
Indoor Environmental Quality	32	54	72
Operation, Maintenance, and Homeowner Education	7	7	9
Global Impact	~~3~~ 9	~~5~~ 11	~~6~~ 15
Additional points from sections of your choice	100	100	100

[*] *If the home does not have a ducted distribution system for space heating and cooling, deduct 15 points from the number of points required in the Energy Efficiency section.*

[1] A local program has the option to change the titles of each level of green building.

Section 1
Lot Design, Preparation, and Development

	PTS	HOW TO VERIFY
1.1 Select the site		
Select the site to minimize environmental impact.		
~~1.1.1.~~ Avoid environmentally sensitive areas as identified through site foot-printing process or existing third party data. Already required	~~7~~	Any one of the following: • Comprehensive Plan • Wetland Institute • Local jurisdiction's guidelines • Site foot-printing process results • Set of site plans
1.1.2 Choose an infill site.	9	
1.1.3 Choose a Greyfield site.	7	
1.1.4 Choose an EPA-recognized Brownfield.	7	Confirmation from a federal, state, or local Brownfield's site inventory list or representative that the site is a Brownfield
1.1.5 Home site in a mixed-use zoning	10	
1.1.6 A. Public transit stop within ¼ mile of site.	10	
B. Public transit stop within ½ mile of site (cannot count both A and B).	5	
1.2 Identify goals with your team		
1.2.1 Establish a knowledgeable team.	6	Written project mission statement, goals, and team member roles
A. Identify team member roles and how they relate to various phases of green lot design, prep, and development.		
B. Create a mission statement that includes the project's goals and objectives.		
1.3 Design the site		
Minimize environmental impacts; protect, restore, and enhance the natural features and		

	PTS	HOW TO VERIFY
environmental quality of the site (points for each guideline are only rewarded upon implementation of these plans).		
1.3.1 Conserve natural resources. A. Complete a natural resources inventory used to drive/create the site plan. B. Create a protection and maintenance plan for priority natural resources/areas during construction. See Section 1.4 for guidance in forming the plan. C. Participate in a natural resources conservation program, e.g., Building *With* Trees. D. Provide basic training in tree and other natural resource protection to onsite supervisor.	6	Pre- and post-development natural resources inventory Protection and maintenance plan Certificate or letter indicating participation in a natural resources conservation program
1.3.2 Site the home and other built features to optimize solar resource (refer to Energy Efficiency module for guidance on solar resource optimization). (Note – do not include these points if you get points from 3.4.1.a or 3.4.1.b in the Energy Efficiency section)	6	House plans
1.3.3 Minimize slope disturbance. A. Limit development footprint on steep slopes (slopes greater than or equal to 25%). B. Complete a hydrological/soil stability study for steep slopes and use this study to guide the design of all structures onsite. C. Align road or extended driveway with natural topography to minimize its grade and reduce cut and fill. D. Reduce long-term erosion effects through the design and implementation of terracing, retaining walls, landscaping, and restabilization techniques.	5	Hydrological/soil stability study results Topographical map with contour lines
1.3.4 Minimize soil disturbance and erosion. See	6	Sediment and erosion

		PTS	HOW TO VERIFY
	Section 1.4 for further guidance. A. Schedule construction activities to minimize exposed soils. B. Use alternative means to install utilities, such as tunneling instead of trenching, use of smaller equipment, shared trenches or easements, and placement of utilities under streets instead of yards. C. Demarcate limits of clearing and grading.		control plans
1.3.5	Manage storm water using low impact development. A. Preserve and use natural water and drainage features. B. Develop and implement storm water management plans that minimize concentrated flows and seek to mimic natural hydrology. C. Minimize impervious surfaces and use permeable materials for driveways, parking areas, walkways, and patios.	8	Storm water management plan
1.3.6	Devise landscape plans to limit water and energy demand while preserving or enhancing the natural environment. A. Formulate a plan to restore or enhance natural vegetation that is cleared during development. Within this plan, phase landscaping to ensure denuded areas are quickly vegetated. B. Select turf grass and other vegetation that are native or regionally appropriate species. C. Limit turf areas of landscaped area, selecting native and regionally appropriate trees and vegetation in a way that complements the natural setting. D. Group plants with similar watering needs (hydrozoning). E. Specify planting of trees to increase site shading and moderate	8	Landscape plan

		PTS	HOW TO VERIFY
	temperatures (see also Energy Efficiency guideline 3.4.1.c specifying location of trees to reduce the energy consumption of the home). F. Design vegetative wind breaks or channels as appropriate to local conditions. G. Require onsite tree trimmings or waste of regionally appropriate trees to be used as protective mulch during construction or as a base for walking trails. H. Establish an integrated pest management plan to minimize chemical use of pesticides and fertilizers.		
1.3.7	Maintain wildlife habitat.	5	Set of site plans (Extra points) Present a certificate or letter indicating participation in a wildlife conservation program.
1.4	**Develop the site** Minimize environmental intrusion during onsite construction.		
1.4.1	Provide onsite supervision and coordination during clearing, grading, trenching, paving, and installation of utilities to ensure that targeted green development practices are implemented (see 1.3.4).	5	Protection and maintenance plan
1.4.2	Conserve existing onsite vegetation. A. Minimize disturbance of and damage to trees and other vegetation designated for protection through installation of fencing and avoidance of trenching, significant changes in grade, and compaction of soil and critical root zones. B. Prepare designated existing trees and vegetation for the impacts of construction through pruning, root	5	Protection and maintenance plan and/or set of site plans

	PTS	HOW TO VERIFY
pruning, fertilizing, and watering.		
1.4.3 Minimize onsite soil disturbance and erosion.	6	Sediment and erosion control plans
A. Demarcate limits of clearing and grading.		
B. Create construction "no disturbance" zones using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.		
C. Install and maintain sediment and erosion controls.		
D. Stockpile and cover good soil for later use.		
E. Reduce soil compaction from construction equipment through laying mulch, chipped wood, or plywood sheets.		
F. Stabilize disturbed areas within the EPA recommended 14-day period.		
G. Improve the soil with organic amendments and mulch.		
1.5 Innovative options		
Seek to obtain waivers or variances from local development regulations to enhance green building.		
1.5.1 Share driveways or parking.	6	Waiver or variance for the plan
1.5.2 Other (specify).		Waiver or variance for the item(s)
A. Provide an air compressor for tire inflation in subdivisions.	1	
B. Provide a clothesline in the yard.	2	

Section 2
Resource Efficiency

	PTS	HOW TO VERIFY
2.1 Reduce quantity of materials and waste		
2.1.1 Create an efficient home floor plan that maintains a home's functionality.	9	House plans
2.1.2 Use advanced framing techniques that reduce the amount of home building material while maintaining the structural integrity of the home (see User Guide for examples).	8	House plans
2.1.3 Use building dimensions and layouts that maximize the use of the resources by minimizing material cuts.	6	House plans
2.1.4 Create a detailed framing plan and detailed material takeoffs. Provide an onsite cut list for all framing and sheathing material.	7	Framing plan Cut list
2.1.5 Use building materials that require no additional finish resources to complete application onsite.	4	Product literature Installer, manufacturer, or builder certified
2.1.6 Use pre-cut or pre-assembled building systems or methods		Framing plan
A. Provide a pre-cut (joist) or pre-manufactured (truss) floor and roof framing package – points provided for a flooring or a roof framing package – additional points provided if both packages are used	3 per	
B. Provide a panelized wall framing system	6	
C. Provide a panelized roof system	6	
D. Provide modular construction for the entire house	7	
2.1.7 ~~Use a frost-protected shallow foundation (FPSF).~~		

	PTS	HOW TO VERIFY
2.2 Enhance durability and reduce maintenance Building design minimizes degradation and weathering of materials/enhances life expectancy. Features and details to be specified on architectural plans.		
2.2.1 Provide a covered entry (e.g., awning, covered porch) at exterior doors to prevent water intrusion and subsequent rotting of joists, sills, and finishes	6	House plans
2.2.2 Use recommended-sized roof overhangs for the climate	7	House plans
2.2.3 ~~Install perimeter drain for all basement footings sloped to discharge to daylight, dry well, or sump pit~~	~~7~~	House plans
2.2.4 ~~Install drip edge at eave and gable roof edges~~	~~6~~	House plans
2.2.5 ~~Install gutter and downspout system to divert water 5' away from foundation and from there into the overall onsite drainage area~~	~~6~~	
2.2.6 Divert surface water from all sides of building. Slope top of backfill to achieve settled slope of at least 6" of fall within 10 feet of the foundation walls	7	Set of site plans
2.2.7 Install continuous and physical foundation termite barrier in areas where subterranean termite infestation is locally problematic.	7	
2.2.8 Use termite-resistant materials for walls, floor joists, trusses, exterior decks, etc. in areas known to be termite infested.	7	
2.2.9 Provide a water-resistive barrier (WRB) or a drainage plane system behind the exterior veneer system or the exterior siding.	8	
2.2.10 ~~Install ice flashing at roof's edge~~	~~5~~	
2.2.11 ~~Install enhanced foundation waterproofing~~	~~7~~	House plans

	PTS	HOW TO VERIFY
2.2.12 Employ and show on plans the following flashing details: A. Around windows and doors B. Valleys C. Deck/house juncture D. Roof/wall junctures, chimneys step flashing E. Drip cap above windows and doors	~~9~~ 5	House plans
2.3 Reuse materials		
2.3.1 Disassemble existing buildings (deconstruction) instead of demolishing	6	
2.3.2 Reuse salvaged materials, where possible.	5	List of components
2.3.3 Dedicate and provide onsite bins and/or space to facilitate the sorting and reuse of scrap building materials.	6	C & D waste management plan
2.4 Use Recycled content materials		
2.4.1 Use recycled-content building materials	3	List of components used
2.5 Recycle waste materials during construction		
2.5.1 Develop and implement a construction and demolition (C & D) waste management plan that is posted at jobsite.	7	Copy of C & D waste management plan
2.5.2 Conduct onsite recycling efforts, e.g., use grinder and apply materials onsite, thus reducing transportation-related costs.	5	Copy of C & D waste management plan including information on what materials are going to be grinded for the project
2.5.3 Recycle construction waste offsite, e.g., wood, cardboard, metals, drywall, plastics, asphalt roofing shingles, concrete, block, other.	6	Contractual agreement between the recycling firm and the builder. Documentation on materials that have been recycled. List of components recycled

	PTS	HOW TO VERIFY
2.6 Use renewable materials		
2.6.1 Use materials manufactured from renewable resources or agricultural byproducts such as soy-based insulation; bamboo; wood-based products	3	List of components used
2.6.2 Use certified wood for wood and wood-based materials and products from all credible third party certified sources, including A. The Sustainable Forestry Initiative® Program B. The American Tree Farm System® C. The Canadian Standards Association's Sustainable Forest Management System Standards (CAN/CSA Z809) D. Forest Stewardship Council (FSC) E. Program for the Endorsement of Forest Certification Systems (PEFC), and F. Other such credible programs as they are developed and implemented.	4	Certification certificate – points given per component
2.7 Use resource-efficient materials		
2.7.1 Use products that contain fewer resources to meet the same end-use as traditional products	3	List of components used
2.8 Innovative options		
2.8.1 Use locally available, indigenous materials	5	List of components used
2.8.2 Use a life cycle assessment (LCA) tool to compare the environmental burden of building materials and, based on the analysis, use the most environmentally preferable product for that building component.	8	Provide BEES or ATHENA output to show use of an environmentally preferable product

Section 3
Energy Efficiency

3.1 Implement integrated and comprehensive approach to energy-efficient design of building site, building envelope, and mechanical space conditioning systems

REQUIREMENTS – The home must meet the following conditions listed in 3.1.1 through 3.1.3 below.

The home must also achieve the equivalent of at least 37 Points (Bronze Level) from the optional guidelines in the Performance Path (Section 3.2) or the Prescriptive Path (Section 3.3).

	GUIDELINE	PTS	HOW TO VERIFY
3.1.1	Home is equivalent to the IECC ~~2003~~ 2006 or local energy code whichever is more stringent. Conformance to this threshold shall be based on plan analysis using software such as ResCheck, Rem Rate, Energy Gauge or other as approved by green building program administrator.	Req.	ResCheck Analysis (only necessary if the local energy code does not at least meet the IECC ~~2003~~ 2006 requirements)
3.1.2	Size space heating and cooling system/equipment according to building heating and cooling loads calculated using ANSI/ACCA Manual J 8th Edition or equivalent. Computerized software recognized by ACCA as being in compliance with Manual J 8th Edition may be used.	Req.	Manual J load calculations
3.1.3	~~Conduct third party plan review to verify design and compliance with the Energy Efficiency section. When multiple homes of the same model are to be built by the same builder, a representative sample (15%) of homes may be reviewed subject to a sampling protocol.~~	Req.	Plan review may be completed by Green Building Program administrator, energy program administrators, architect/engineer, consultant, or other party outside of the Builder's company and acceptable to the Green Building Program administrator.

GUIDELINE	PTS	HOW TO VERIFY
3.2 Performance path		
An energy efficiency line item with a "**(PP)"** preceding it is a line item likely to be used to calculate X% above IECC ~~2003~~ 2006. If a builder chooses to use the performance path – line item 3.2.1 – to meet the guideline's energy efficiency requirements, then those measures with a "(PP)" cannot be used to obtain the 100 additional points from sections of your choice.		
3.2.1 Home is X% above IECC ~~2003~~ 2006		ResCheck Analysis
A. 15% (Bronze)	37	
B. 30% (Silver)	62	
C. 40% (Gold)	100	
D. City/County Sustainable Energy Standard	110	SES is demonstrated by meeting PP Gold plus adding the solar components required per the SES.
3.3 Prescriptive path		
Items included in the Energy Star Program	75	
Items included in TEP Guarantee Program	88	
3.3.1 Building envelope		Builder-certified
(PP)A. Increase effective R-value of building envelope using advanced framing techniques, continuous insulation, and/or, integrated structural insulating system. Measures may include but are not limited to:		Approved by local program administrator Builder spec sheet
• SIPS*, or	8	
• ICFS*, or	8	
• Advanced Framing, or	6	
- Insulated corners and interior/exterior wall intersections*		
- Insulated headers on exterior walls		
• Raised heel trusses	2	
• Continuous insulation on exterior wall .	4	

GUIDELINE	PTS	HOW TO VERIFY
• Continuous insulation on cathedral ceiling.	4	
• 6 sided air barrier per 2007 Energy Star.	6	
* This line item also has a resource-efficiency benefit.		
(PP)B. Incorporate air sealing package to reduce infiltration. *(All measures that apply to project must be performed.)*		Builder-certified
1. Sill sealer between foundation and sill plate.	1	
2. Caulk bottom plate of exterior walls.	1	
3. Air seal band joist cavities between floors.	1	
4. Ensure air barrier continuity at all framed cavities such as air chases, soffits, coffered or dropped ceilings, and behind tub/shower units on exterior walls. Utilize either an interior or exterior air barrier as per local practice.	1	
5. Caulk/foam all electrical, plumbing, heating penetrations between floors (including attic, basement, crawl space, and garage) and to exterior.	1	
6. Block and seal cantilevered floors and kneewalls.	1	
7. Weatherstrip attic hatches, kneewall doors.	1	
8. Insulate, caulk, or foam between window/door jambs and framing.	1	
9. If installing recessed lights in ceilings adjacent to unconditioned space, use rated, air-tight Type IC housings.	1	
10. Caulk/foam HVAC register boots that penetrate the building envelope to subfloor or drywall that penetrate the building envelope.	1	

GUIDELINE	PTS	HOW TO VERIFY
11. If a fireplace is installed, install a gas fireplace that is sealed combustion or a wood-burning fireplace with gasketed doors.	1	
(**PP**)C. Use ENERGY STAR® – rated windows or meet NFRC standards appropriate for local climate.	8	Recommendation for local climate by Energy Efficient Windows Collaborative, www.efficientwindows.org
3.3.2 HVAC design, equipment, and installation		
A. Size, design, and install duct system using ANSI/ACCA Manual D® or equivalent.	8	Manual D calculation
B. Design radiant or hydronic space heating systems using industry-approved guidelines, e.g., *Guidelines for the Design and Installation of Radiant Panel Heating and Snow/Ice Melting Systems* by the Radiant Panel Association, Heat Loss Guide (H-22), by the Hydronics Institute Division of GAMA or accredited design professionals and manufacturer's recommendations.	8	Documentation of design or design signed by professional
C. Use ANSI/ACCA Manual S® or equivalent to select heating and/or cooling equipment.	8	Manual S documentation
D. Verify performance of the heating/cooling system. HVAC contractor to perform the following: • Start-up procedure according to manufacturer's instructions • Refrigerant charge verified by super-heat and/or sub-cooling method • Burner set to fire at nameplate input • Air handler setting/fan speed • Total air flow within 10% of design flow • Total external system static should	8	Certification by HVAC contractor

GUIDELINE	PTS	HOW TO VERIFY
not exceed equipment capability at rated airflow.		
E. Use HVAC installer and service technician certified by a nationally or regionally recognized program such as NATE, BPI, RPA, or manufacturers' training.	6	HVAC certification
(PP) F. Fuel-fired space heating equipment efficiency (AFUE):		Certification by HVAC contractor
Gas Furnace ≥81%	4	
≥80% (ENERGY STAR)	6	
≥94%	8	
Oil Furnace: ≥80%	2	
Gas or Oil Boiler: ≥80%% (ENERGY STAR)	2	
≥90%	6	
(PP) G. Heat pump efficiency (cooling mode)		Certification by HVAC contractor
1. SEER over 13 (2 pts per SEER)	2+	
2. Staged air conditioning equipment	9	
Note: Split-systems must be ARI-tested as a matched set.		
Note: Add 3 points if Manual S and D and start-up procedures are followed when one of the ground source heat pumps noted above has been installed. Do not take these points again in 3.3.2.H.		
(PP) H. Heat pump efficiency (heating mode)		Certification by HVAC contractor
~~1. 2-7.9 HSPF~~	~~6~~	
2. 0-8.9 HSPF	~~7~~ 6	
3. 0-10.5 HSPF	~~9~~ 8	
4. >10.5 HSPF	10	
Note: Split-systems must be ARI-tested as a matched set.		
(PP) I. Ground source heat pump installed by a Certified Geothermal Service Contractor. (cooling mode)		Certification by HVAC contractor
1. EER = 13-14	5	The equipment supplier and the contractor shall furnish, in writing, a "geothermal
2. EER = 15-18	6	
3. EER = 19-24		

GUIDELINE	PTS	HOW TO VERIFY
4. EER = >25	8 10	loop performance guarantee" stating that the heat rejection and absorption of the equipment will not exceed the geothermal loop design submitted and will consistently perform at or above specified efficiencies (taking into account water flow, air flow and entering water temperature).
Note: Add 3 points if Manual S and D and start-up procedures are followed when one of the ground source heat pumps noted above has been installed. Do not take these points again in 3.3.2.J.		
J. **(PP)** Ground source heat pump installed by a Certified Geothermal Service Contractor. (heating mode).		Certification by HVAC contractor
1. COP 2.4 - 2.6	6	
2. COP 2.7 - 2.9	8	
3. COP ≥3.0	10	
K. Seal ducts, plenums, and equipment to reduce leakage. Use UL 181 foil tapes and/or mastic.	6	Certification by HVAC contractor
L. When installing ductwork:		Certification by HVAC contractor
1. No building cavities used as ductwork, e.g., panning joist or stud cavities.	~~8~~ 3	
2. Install all heating and cooling ducts and mechanical equipment within the conditioned building envelope.	3	
3. No ductwork installed in exterior walls.	3	
M. Install return ducts or transfer grilles in every room having a door except baths, kitchens, closets, pantries, and laundry rooms.	6	Certification by HVAC contractor
N. Install ENERGY STAR ceiling fans. (Points per fan.)	1	Builder-certified
O. Install whole-house fan with insulated louvers.	4	Builder-certified
P. Install ENERGY STAR labeled	8	Builder-certified

GUIDELINE	PTS	HOW TO VERIFY
mechanical exhaust from every bathroom ducted to the outside.		
3.3.3 Water heating design, equipment, and installation		
A. Water heater Energy Factor (EF) equal to or greater than those listed in the following table.	4	Installer-certified

Gas	
Size (gallons)	Energy Factor
30	0.64
40	0.62
50	0.60
65	0.58
75	0.56
Electric	
30	0.95
40	0.94
50	0.92
65	0.90
80	0.88
100	0.86
Oil	
30	0.59
50	0.55

B. Install whole house instantaneous (tankless) water heater. (Water heater complies with DOE Standard 10CFR430)	4	Installer-certified
C. Insulate all hot water lines with a minimum of 1" insulation.	4	Installer-certified
D. Install heat trap on cold and hot water lines to and from the water heater (if not integral to the water heater).	3	Installer-certified
E. Install manifold plumbing system with parallel piping configuration (aka "home run") using smallest diameter piping allowed by code.	5	Installer-certified

GUIDELINE	PTS	HOW TO VERIFY
3.3.4 Lighting and appliances		
A. Use an ENERGY STAR Advanced Lighting Package (ALP) in home.	7	Builder-certified
B. Install all recessed lighting fixtures within the conditioned envelope of the building, e.g., housing does not penetrate insulated ceiling.	7	Builder-certified
C. Install motion sensors and photocell on outdoor lighting (if not credited under 3.3.4.a).	7	Builder-certified
D. Install tubular skylights in rooms without windows.	2	Builder-certified
E. Install ENERGY STAR-labeled appliance:		Builder-certified
• Refrigerator	3	
• Dishwasher	3	
• Washing machine	5	
3.3.5 Renewable energy/solar heating and cooling		Builder spec sheet
3.3.5.1 Solar space heating and cooling	10	
A. Use sun-tempered design: building orientation, sizing of glazing, design of overhangs to provide shading are in accordance with guidelines below:		
• Long side of the home faces within 30° of south;		
• Glazing area < 7% of Finished Floor Area (FFA) on south face (Low-E);		
• Glazing area < 2% of FFA on west face (Low-E, Low SHGC);		
• Glazing area < 4% of FFA on east face (Low-E, Low SHGC);		
• Glazing area < 4% of FFA on north face (Low-E);		
• Skylights less than 2% of Finished Ceiling Area, with shades and		

GUIDELINE	PTS	HOW TO VERIFY
insulated wells; • Overhangs designed to provide shading on south-facing glass (at a minimum), or adjustable canopies or awnings. (See User Guide for charts that indicate length of overhang, amount and period of shading according to latitude.)		
B. Use passive solar design: sun-tempered design as above plus additional south-facing glazing, appropriately designed thermal mass to prevent overheating, and provision for air flow to adjoining rooms. • Sun-tempered design as outlined above except additional glazing permitted on south wall PLUS • For any room with south-facing glazing > 7% of FFA, properly sized thermal mass, and • Provision for forced air flow to adjoining areas as needed. • (SBIC Passive Solar Design Guidelines for your climate should be referenced to size thermal mass.) *Note: 3.3.5.1.A must also be done in order to receive points for 3.3.5.1.B.*	10	Builder spec sheet specifying passive solar design features Documentation of design process
C. Use passive cooling. • Exterior shading on east and west windows, e.g., shade trees, moveable awnings or louvers, covered porches • Overhangs designed to provide shading on south-facing glazing. (Use supplied charts that indicate length of overhang, amount and period of shading according to latitude.) (Not to be double-counted if credited in 3.3.5.1.A above.) • Windows located to facilitate cross ventilation.	8	Builder spec sheet Documentation of design process Builder-certified

GUIDELINE	PTS	HOW TO VERIFY
• Solar reflective roof or radiant barrier in hot climates. *Note: All of the above must be done in order to receive points for this line item.*		
3.3.5.2 Solar water heating		
A. Install solar water heating system. Must use SRCC rated system. Solar fraction:		Installer-certified Manufacturers' specifications
1. 0.3 2. ≥ 0.5	8 10	
3.3.5.3 Additional renewable energy options		
A. Supply electricity needs by onsite renewable energy source such as photovoltaics, wind or hydro whereby the system is estimated to produce the following kWh per year:		Installer-certified Manufacturers' specifications
2,000 to 3,999 4,000 to 5,999 6,000 + (Equipment should carry all applicable IEEE and UL certifications. Installation shall be in accordance with local utility and electrical code requirements.)	8 10 12	
B. Provide clear and unshaded roof area (+/-30°of south or flat) for future solar collector or photovoltaics. Minimum area of 200 sf. Provide a rough-in of piping from the roof to the utility area:		Builder-certified
• Conduit • Insulated piping	3 5	
C. Provide homeowner with information and enrollment materials about options to purchase green power from the local electric utility.	2	Builder-certified
(Not to duplicate points for Homeowner Manual in IEQ section below.)		
3.3.6 Verification		Inspection may be performed

GUIDELINE	PTS	HOW TO VERIFY
3.3.6.1 Conduct onsite third party inspection to verify installation of energy related features such as:		by Green Building Program Administrator, energy program administrator, architect, engineer, or other party outside of the Builder's company and acceptable to the Green Building Program administrator.
Approved sampling testing program = 1 point/item	~~8~~	
Testing of each home = 2 points/item		
A. Duct installation and sealing.	1/2	At least two onsite inspections should be done: one after insulation is installed and the second upon completion of the project.
B. Building envelope air sealing details.	1/2	
C. Proper installation of insulation including no gaps, voids, or compression.	1/2	
D. Insulation cut accurately to fit cavity.	1/2	
E. Windows and doors flashed, caulked, and sealed properly.	1/2	
~~(When at least 100 homes of the same model are to be built by the same builder, a representative sample (15%) of homes may be inspected.)~~		
3.3.6.2 Conduct third party testing to verify performance, e.g., blower door, duct leakage testing, flow hood testing, (per test).	~~8 per test~~	Report showing results of testing Examples of those who would be qualified to perform testing include but are not limited to energy program technicians, weatherization program technicians, HVAC contractors, and energy efficiency/ building science consultants.
Approved sampling testing program = 2 points/test		
Testing of each home = 8 points/test		
A. Building envelope leakage: blower door test results < 0.35 ACHnat.	2/8	
B. Central HVAC duct leakage: duct leakage test results: • Leakage to unconditioned space < 5% of rated blower capacity. • Total leakage < 10% of rated blower capacity.	2/8	
C. Balanced HVAC air flows: pressure balance testing or flow hood test results: • Measured flow at each supply and	2/8	

GUIDELINE	PTS	HOW TO VERIFY
return register within 25% of design flow. • Total air flow within 10% of design flow ~~(When multiple homes of the same model are to be built by the same builder, a representative sample of homes may be tested subject to the sampling protocol.)~~		
3.3.7 Innovative options		
A. Install drain water heat-recovery system.	2	Installer-certified
B. Install desuperheater in conjunction with ground source heat pump.	6	Installer-certified
C. Install heat pump water heater. Must be rated according to the current US DOE test standard and shall have an EF > 1.7.	6	Installer-certified
D. Install occupancy sensors for lighting control. (Points per sensor.)	4	Builder-certified
E. Install evaporative cooler with separate ductwork.	6	
F. Stub out for gas to dryer/stove/barbecue.	2	
G. Install programmable thermostats.	2	

Section 4
Water Efficiency

		PTS	HOW TO VERIFY
4.1 Indoor/Outdoor Water Use			
4.1.1	Hot water delivery to remote locations aided by installation of:	6	Installer-certified
	A. On-demand water heater at point of use served by cold water only. (Points per unit installed)		
	B. Control-activated recirculation system.		
4.1.2	Water heater located within 30 feet pipe run of all bathrooms and kitchen.	9	Installer-certified
4.1.3	ENERGY STAR® water-conserving appliances installed, e.g., dishwasher, washing machine.	7 per appl.	Installer-certified
4.1.4	Water efficient showerhead using conventional aerator or venturi technology for flow rate < ~~2.5~~ 1.8 gpm.	2 per fix-ture	Installer-certified
4.1.5	Water-efficient sink faucets/aerators < ~~2.2~~ 2.0 gallons/minute.	2 per fix-ture	Installer-certified
4.1.6	Ultra low flow (< ~~1.6~~ 1.4 gpm/flush) toilets installed:		Installer-certified
	A. Power-assist	4	
	B. Dual flush.	6	
4.1.7	Low-volume, non-spray irrigation system installed, e.g., drip irrigation, bubblers, drip emitters, soaker hose, stream-rotator spray heads.	7	Installer-certified
4.1.8	Irrigation system zoned separately for turf and bedding areas.	6	Installer-certified
4.1.9	Weather-based irrigation controllers, e.g., computer-based weather record.	7	Installer-certified
4.1.10	Collect and use rainwater as permitted by local code. (Additional credit for distribution system	9	Builder-certified

		PTS	HOW TO VERIFY
	that uses a renewable energy source or gravity.)		
4.1.11	Innovative wastewater technology as permitted by local code, e.g., constructed wetland, sand filter, and aerobic system.	7	Submit plan approved by local code or health department official
4.2	**Innovative options**		
4.2.1	Shut-off valve, motion sensor, or pedal-activated faucet to enable intermittent on/off operation.	6	Installer-certified
4.2.2	Separate and re-use greywater as permitted by local code.	6	Installer-certified
4.2.3	Composting or waterless toilet as permitted by local code.	6	Installer-certified
4.2.4	Reclaimed water	6	

Section 5
Indoor Environmental Quality

	PTS	HOW TO VERIFY
5.1 Minimize potential sources of pollutants		
Marked items Included in TEP Guarantee Program	26	
5.1.1 For vented space heating and water heating equipment: A. Install direct vent equipment. or B. Install induced/mechanical draft combustion equipment.	8	Builder spec sheet
5.1.2 Install gas space heating and water heating equipment in isolated mechanical room or closet with an outdoor source of combustion and ventilation air.	6	Builder spec sheet
5.1.3 Install direct-vent, sealed-combustion gas fireplace, sealed wood fireplace, or sealed woodstove. or No fireplace or woodstove installed.	6	Builder spec sheet
5.1.4 Ensure a tightly-sealed door in between the garage and living area and provide continuous air barrier between garage and living areas including air sealing penetrations, walls, ceilings, and floors.	9	Builder spec sheet
5.1.5 Ensure particleboard, medium density fiberboard (MDF) and hardwood plywood substrates are certified to low formaldehyde emission standards ANSI A208.1, ANSI A208.2 and ANSI/HPVA HP1, respectively. Composite wood/agrifiber panel products must either contain no added urea-formaldehyde resins or must be third party certified for low formaldehyde emissions.	6	Manufacturer's spec sheet Third-party listing
5.1.6 Install carpet, carpet pad, and floor covering adhesives that hold "Green Label" from Carpet and Rug Institute's indoor air quality testing program or meet equivalent thresholds verified by a third party.	6	Manufacturer's spec sheet Third-party listing
5.1.7 Mask HVAC outlets during construction and vacuum ducts, boots, and grilles before turning on central	5	

		PTS	HOW TO VERIFY
	heating/cooling system.		
5.1.8	Use low VOC emitting wallpaper.	3	Builder's spec sheet
5.2	**Manage potential pollutants generated in the home**		
5.2.1	Vent kitchen range exhaust to the outside.	7	Builder spec sheet Use Guidance in Homeowner's Manual
5.2.2	Provide mechanical ventilation at a rate of 7.5 cfm per bedroom + 7.5 cfm and controlled automatically or continuous with manual override. The ventilation equipment may be:		Builder spec sheet Use guidance in Homeowner's Manual
	A. Energy Star exhaust or supply fan(s), or	7	
	B. Balanced exhaust and supply fans, or	9	
	C. Heat-recovery ventilator, or	10	
	D. Energy-recovery ventilator	10	
	E. Passive side-air supply	4	
5.2.3	Install MERV 9 filters on central air or ventilation systems.	3	Use guidance in Homeowner's Manual
5.2.4	Install humidistat to control whole-house humidification system.	4	Use guidance in Homeowner's Manual
5.2.5	Install sub-slab de-pressurization system or infrastructure to facilitate future installation of radon mitigation system. *The more stringent requirement between a local building code and this provision shall apply.	6	Builder spec sheet
5.2.6	Verify all exhaust flows meet design specifications	9	
5.3	**Moisture management (vapor, rainwater, plumbing, HVAC)**		
5.3.1	Control bathroom exhaust fan with a timer or humidistat.	6	Builder spec sheet (Not to duplicate points from 5.2.b)
5.3.2	Install moisture resistant backerboard – not paper-faced	6	Builder spec sheet

		PTS	HOW TO VERIFY
	sheathing – under tiled surfaces in wet areas.		
5.3.3	Install vapor retarder directly under slab (6-mil) or on crawl space floor (8-mil). In crawl spaces, extend poly up wall and affix with glue and furring strips, or damp-proof wall below grade. Joints lapped 12 inches.	9	Builder spec sheet
5.3.4	Protect unused moisture-sensitive materials from water damage through just-in-time delivery, storing unused materials in a dry area, or tenting materials and storing on a raised platform.	6	Builder's moisture management practice or plan
5.3.5	Keep plumbing supply lines out of exterior walls.	5	
5.3.6	Insulate cold water pipes in unconditioned spaces with ½" insulation or other coating that comparably prevents condensation.	4	Builder's Specs
5.3.7	Insulate HVAC ducts, plenums, and trunks in unconditioned basements and crawl spaces to avoid condensation.	4	Builder's Specs
5.3.8	Check moisture content of wood before it is enclosed on both sides. Ensure moisture content of subfloor/substrate meets the appropriate industry standard for the finish flooring material to be installed.	4	Builder's moisture management practice or plan
5.4	**Innovative options**		
A.	Install central vacuum system.	2	
B.	No air handler or ductwork installed in garage.	3	
C.	Install CO detectors in habitable room above garage.	2	
D.	Install CO detectors near combustion appliances.	4	

Section 6
Operation, Maintenance, and Homeowner Education

	PTS	HOW TO VERIFY
6.1 Provide Home Manual to owners/occupants on the use and care of the home. Manual must include all items below (Note: this section is mandatory for all projects):		
A. Narrative detailing the importance of maintenance and operation to keep a green built home green	9	Copy of the home manual
B. Local Green Building Program certificate.		
C. Warranty, operation, and maintenance instructions for equipment and appliances		
D. Household recycling opportunities		
E. Information on how to enroll in a program so that the home receives energy from a renewable energy provider		
F. Explanation of the benefits of using compact fluorescent light bulbs in high usage areas		
G. A list of habits/actions to optimize water and energy use		
H. Local public transportation options (if applicable)		
I. Clearly labeled diagram showing safety valves and controls for major house systems.		
J. List of Green Home Building Guidelines items included in the home. (this section moved from section 6.2 below).		
6.2 Optional information to include in the Home Manual (Choose at least five)		
A. A list of local service providers that focus on regularly scheduled maintenance and proper operation of equipment and the structure (sealants, caulks, gutter and downspout system; shower/tub surrounds, irrigation systems, etc).	~~2~~ 11	

	PTS	HOW TO VERIFY
B. A photo record of framing with utilities installed. Photos should be taken prior to installing insulation, clearly marked, and provided in homeowner's manual.		
C. User-friendly maintenance checklist		
D. Instructions for proper handling and disposal of hazardous materials.		
E. Information on organic pest control, fertilizers, de-icers and cleaning products.		
F. Information about native or low-water landscape		
G. Information on how to keep a home's relative humidity in the range of 30-60%		
H. Instructions for checking crawlspace for termite tubes periodically		
I. Instructions for keeping gutters clean. Instructions should note that downspouts should divert water at least five feet away from foundation		
6.3 Provide education to owners/occupants in the use and care of their dwellings.		
A. Instruct homeowner/occupants about the building's goals and strategies and occupant's impacts on costs of operating the building.	3	
B. Provide on-site training to owners/occupants for all control systems in the house.	4	
6.4 Solid waste		
A. Encourage homeowners/occupants to recycle by providing built-in space in the home's design (e.g., kitchen, garage, covered outdoor space) for recycling containers.	~~1~~ 4	
6.5 Innovative options		
A. Turn over as-built plans to home owner.	4	

Section 7
Global Impact

	PTS	HOW TO VERIFY
7.1 Products		ISO 14001 certification
7.1.1 Product manufacturer's operations and business practices include environmental management system concepts (the product line, plant, or company must be ISO 14001 certified)	3	
7.1.2 Choose low- or no-VOC indoor paints. VOC concentrations (grams/liter) of interior paints should be equal to or less than those specified by the EPA's Environmentally Preferable Purchasing Program: • Interior latex coatings: Flat: 100 grams/liter; Non-flat: 150 grams/liter • Interior oil-based paints: 380 grams/liter	6	Builder's spec Manufacturer's spec or third-party listing
7.1.3 Use low VOC sealants. VOC concentrations for construction adhesives and sealants should meet the limits specified in the California Air Resources Board Regulation for Reducing Volatile Organic Compound Emissions from Consumer Products: • Construction adhesives: the greater of 15% by weight or 200 grams/liter • Sealants and caulks: the greater of 4% by weight or 60 grams/liter • Contact adhesives: the greater of 80% by weight or 650 grams/liter	5	Manufacturer's spec or third-party listing
7.2 Innovative options		
7.2.1 Builder's operations and business practices include environmental management system concepts (the builder must be ISO 14001 certified)	4	ISO 14001 certification
A. All mechanical systems use non-ozone depleting refrigerants.	2	