



**VERMONT BUILDS GREENER
PROGRAM**

VERIFICATION FORM
Version 3.6 (03/2009)

**A PROJECT OF:
BUILDING FOR SOCIAL RESPONSIBILITY
P.O. Box 8882
Burlington, Vermont
www.bsr-vt.org**

Scorecard - Version 3.6

Category	Strategy	Approach	Points	Points Achieved	Deed	Town or State Map	Design Drawings or Specs	Contract or Receipts	Calculation	HERC &/or RBES	Photo (R-Req'd; X-Pick one)																
											Site	Foundation	Framing	Exterior Finish	Mechanical Rough-In	Insulation	Interior Finish	Mechanical Finish									
1. SITING AND LAND USE																											
Location: Choose location to reduce the dependence on automobiles																											
1	1	a	Locate site within 3 miles of public transport stop. (within 1 mile - 2 pts., 1/4 mile - 3 pts.)	1			X																				
1	1	b	Locate within 3 miles of public school. (1 mile - 2 pts., 1/4 mile - 3 pts.)	1			X																				
1	1	c	Locate within 3 miles of a food store. (1 mile - 2 pts., 1/4 mile - 3 pts.)	1			X																				
1	1	d	Provision for pedestrians, including pathways, bicycle routes and bicycle storage facilities.	2				X				X															
1	1	e	In-fill development – locate housing in empty lots in an existing neighborhood.	3			X	X				X															
1	1	f	Build on a brownfield site or previously built-on site. (Brownfield: previously occupied site where ecosystems are damaged, requiring at least some landscape restoration)	3			X																				
1	1	g	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD																							
Optimize land use to minimize damage to the environment and, where possible improve the environment.																											
1	2	a	For parcels greater than 2 acres, submit a site plan that shows the proposed layout and design of the parcel of land with soil delineations included. One or more of the following approaches must be incorporated when the homestead is located on primary or secondary agricultural soils. (A "homestead" is all that forms a person's residence, including the house, landscaped yard, driveway and other out-buildings.)	Req'd																							
1	2	a	i Homestead is located on the edge of the soils suitable for agriculture, thereby maximizing the contiguous land which remains available for future agricultural use.	3			X					X															
1	2	a	ii No more than 2 acres of plot is developed with the rest enrolled in the Current Use program. (information at 802/828-5861).	3			X					X															
1	2	a	iii No more than 2 acres of site is included in the homestead, and the remaining acreage is set aside for future farming under a perpetual agricultural easement to a land trust.	3			X					X															
1	2	a	iv USDA/NRCS soil maps are consulted to determine the soils least suitable for agricultural uses, and homestead is located in this area. (Maps available at each county USDA/NRCS office or on-line at www.vcgi.org .)	3			X					X															
1	2	b	Do not build on wetlands or sensitive wildlife habitat (as defined by the state of Vermont).	Req'd			X																				
1	2	c	Protect against erosion during construction and landscaping.	Req'd				X	X			R	R														
1	2	d	Do not build in the 100 year flood plain.	Req'd			X																				
1	2	e	i Provide and implement responsible storm water management plan for site, including: Avoid storm sewerage where possible; Minimize impervious ground coverings and reduce roadway widths & lengths; Provide vegetative swales for storm water infiltration.	Req'd				X	X			X															
1	2	e	ii Install or maintain permeable material for at least 65% of disturbed building lot area not including home's footprint or retain run-off water on site.	2				X	X			X															
1	2	e	iii Install a permanent storm water treatment onsite, ex. vegetated swale, on-site pond etc.	2																							
1	2	w	Landscape with no invasive plant species, as justified by local Agriculture Co-op Extension	Req'd			X	X																			
1	2	f	Preserve existing trees and vegetation, except within 30' of buildings, except for driveway, solar access, areas cleared for food production and as Req'd for grading for drainage requirements.	3				X	X			X															
1	2	g	Protect existing ecosystems during construction through the use of snow fencing and other access barriers.	2				X				X															
1	2	h	Design roadways and parking to not intrude upon open space.	2				X				X															

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12)	i	Restore damaged ecosystems.	3				X				X										
12)	j	Preserve topsoil on site. Restore after construction.	2					X			X										
12)	k	Use trees cut from site in house construction.	2					X			X										
12)	l	Grind stumps and limbs for mulch.	1					X			X										
12)	m	Cut and reserve non-millable hardwood for firewood.	1					X			X										
12)	n	No trenching, covering or compacting tree root zones in building and site-work areas.	1				X	X			X										
12)	o	Preserve wildlife habitat and wildlife corridors.	2			X	X				X										
12)	p	Permeable pavement driveway/parking.	2				X	X			X										
12)	q	Integrate public transportation access into site plan.	2			R	X														
12)	r	Mowed lawn and landscaping area total less than 1/4 acre.	2			X		R			X										
12)	s	Lawn species selected to minimize mowing/lawn maintenance.	2			X	X	X													
12)	t	Landscape with at least 75% native species. One additional point for 100%.	2			X	X	R													
12)	u	Landscape with northern hardy edible plants/trees.	2			X	X														
12)	v	Landscape with wildlife habitat enhancing species.	1			X	X														
12)	x	Create an integrated pest management plan to minimize chemical use of pesticides and fertilizers. If a development of 2 or more homes, all must achieve this point for one home to achieve.	1		X		X	X													
12)	y	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X														
Community: Promote community and security through site and building design.																					
13)	a	Creation of conservation and property sale restrictions to preserve sustainable intent.	3		X			X													
13)	b	Minimize visual impact of new structures from open fields, mountains and water bodies.	2				X				X										
13)	c	Developments of more than one home must utilize at least three (3) of the following approaches in order to receive these points:					X														
13)	c i	Porches oriented toward neighbors or public right of way.	2				X														
13)	c ii	Minimize front yard set-back.	2				X														
13)	c iii	Cluster buildings in order to preserve land or foster community.	3				X														
13)	c iv	Indoor spaces common to multiple units.	2				X														
13)	c v	Outdoor spaces common to multiple units.	2				X														
13)	c vi	Neighborhood parks.	2				X														
13)	c vii	Creation of deed-protected affordable housing lots.	2		R																
13)	d	Unit in co-housing development.	3				X														
13)	e	Unit in multifamily housing development.	3				X														
14)		Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X														
2. BUILDING DESIGN																					
Efficient building design																					
21)	a	Implement an integrated design approach by establishing a design and build team and incorporate a written project mission statement, project goals, team member roles and chain of communication.	Req'd					R													

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2.1)	b	i	Design and construct home that optimizes the use of interior space, adhering to the VBG House Size Score Chart for bedroom to squarefoot ratio. Bedrooms are 70 square feet or greater with egress window and closet. Rooms that have multi-uses (i.e den, office) and are applicable above, may count as a bedroom. Living rooms and foyers cannot.	Req'd																	
2.1)	b	ii	Incremental design (e.g. building only what is needed at the present with documented provisions to expand to meet growing needs).	2				X													
2.1)	c		Flexibility of design (e.g. adaptable for changing use in future such as stubbing plumbing for additional bathroom, running hardwood floors under partitions for changing room layout, etc.) Point per documented strategy, max of 3 points.	1				X													
2.1)	d		Multiple use areas. (e.g. desk area with provisions for computer center/sewing space/work space or great room area for living/dining/recreation) (Point per area, maximum of 3 pts.)	1				X													X
2.1)	e		Novel storage (e.g. using dead areas like knee walls for storage). (Point per area, maximum of 3 pts.)	1				X													X
2.1)	f		Cold storage room cooled by outside air (i.e., root cellar).	2				X													X
2.1)	g		Building without full basement, shallow frost protected slab on grade.	2				X				X		X							
2.1)	h		Earth-sheltered house (significant portion of walls and roof are earth sheltered).	3				X				X		X							
2.1)	i		Earth-bermed house (significant portion of walls are earth bermed).	2				X				X		X							
2.1)	j		Airlock at least 50% of exterior entrances. Additional point for 100%.	1				X													X
2.1)	k		Mudroom.	1				X													
2.1)	l		No garage	3				X													
2.1)	m		Location of unheated garage on the north and winter windward sides.	2				X													
2.1)	n		Location of utility spaces on the north and winter windward sides.	1				X													
2.1)	o		Building orientated within 15 degrees of true south, with the long axis of the building east to west.	3				X													
2.1)	p		Improve day lighting with more than 60% of all glass openings higher than mid-height of the average interior wall.	2				R		R											
2.1)	q		Restrict heat loss by limiting skylight/monitor area to no more than 6% of the total net floor area of the room in which it is located.	2				R		R											
2.1)	r		Unobstructed south facing roof for future PV or solar hot water. Pitch within 10% of latitude (35-45 degrees).	2				R		R											
2.1)	s		Automatically controlled high R-Value insulating window shades and shutters.	2				X	X												
2.1)	t		Chimney within building envelope.	1				X							X						X
2.1)	u		Inclusion of comprehensive green criteria in project construction document specifications.	3				R	R												
2.1)	v		Inclusion of green and energy conserving details and assembly instructions in project construction document drawings and/or specifications.	3				R	R												
2.1)	w		Efficient circulation design (circulation areas less than 10% of gross square footage).	2				R		R											
2.1)	x		Dedicated business office in home. (2 points per area, maximum 4 pts.)	2				R													
2.2)			Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X													

3. QUALITY/DURABILITY

3.1) Choose quality materials and details for minimum maintenance requirements.

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3 1)	a	Install materials with proper detailing to control degradation from sun, heat and moisture, including: Wood>8"above soil; Roof/wall flashing with siding cut 2" above roofing; minimum 10" overhang size at eaves with a sloped roof.	Req'd				X								X						
3 1)	b	Minimum 25-year expected lifetime roof warranty.	Req'd					X													
3 1)	c	10 year warranty on vertical insulated glass.	Req'd					X													
3 1)	d	Reduced ice dams: No non-airtight recessed light fixtures in insulated flat ceilings; no non-airtight recessed fixtures in insulated cathedral ceilings.	Req'd				X	X							X						
3 1)	e	Reduced ice dams: At least R-30 attic/roof-slope insulation R-value extending over outside of exterior walls.	Req'd				X									X					
3 1)	f	Effective flashing on all rough openings, including membrane flashing on bottom of all rough openings for windows and doors using adhesives compatible with drainage plane materials and window and door head casing flashing.	Req'd				X								X	X					
3 1)	g	Detail deck to house connection to shed water away from house.	Req'd				X								X						
3 1)	h	ii Avoiding waste from structural over-design. (Points for submitting engineer calculations showing beam and header sizing)	1				X		X												
3 1)	h	iii Space joists & studs greater than 16" oc	1				X														
3 1)	h	iv Eliminate jack studs in rough openings	1				X														
3 1)	h	v Use two-stud corners and ladder blocking / drywall clips	1				X														
3 1)	h	vi Job site framing plan in architectural plans	1				X														
3 1)	h	vii Cut list on site	1				X		X												
3 1)	i	20 year insulated glass warranty.	2				X	X													
3 1)	j	Install a self-adhered roofing underlayment along the first four feet of the eave's edge	1				X								X						
3 1)	k	Beyond 25 year roofing warranty. (an additional 1 point for each five year increase in warranty or expected life time)	1					X													
3 1)	l	Intall a fire resistant roofing material	1				X	X													
3 1)	m	Reduced ice dams: R-38 attic/roof-slope insulation R-value extending over outside of exterior walls.	1				X									X					
3 1)	n	Minimum 10" gable overhangs over wall siding.	1				X								X						
3 1)	o	Stainless steel fasteners. 1 point for each of the following applications:																			
3 1)	o	i Siding.	1				X	X							X						
3 1)	o	ii Trim.	1				X	X							X						
3 1)	o	iii Decking.	1				X	X							X						
3 1)	p	40 year siding warranty or expected life time.	1					X													
3 1)	q	50 year siding warranty or expected life time.	2					X													
3 1)	r	Brick or stone siding 90% (or more).	3				X	X	R												
3 1)	s	Exterior siding/vener built over vented drainage plane.	3				X	X							X						
3 1)	t	If wood, six sides of siding primed.	3				X	X							X						
3 1)	u	Crushed stone or other material below roof drip line to minimize splash on siding.	2				X	X							X						
3 1)	v	Provide detail drawing and/or photo documentation of roof assembly identifying materials used to ensure roof assembly sheds exterior moisture effectively and is protected from degradation due to interior heat and moisture migration.	3				X	X							X	X		X	X		
3 1)	w	Fiberglass composite framed windows.	3				X	X							X						

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3 1)	x	Clad windows.	1				X	X						X						
3 1)	y	Install a storm door on all exterior wood doors	1				X							X						
3 1)	z	Entryway protection by roof overhang (minimum 3 feet).	1				X							X	X					
3 1)	aa	Plan landscaping so that mature plantings will be at least 24" from house.	1				X	X			X									
3 1)	bb	Install all insulated, non-wood exterior doors.	1				X	X												
3 1)	cc	At grade stone, masonry or concrete patio in place of wood.	3				X	X			X									
3 1)	dd	Install hot water heater and washing machine in rooms with drains or catch pans, floor coverings that are not water sensitive and install easy to use shut off valves	1				X	X												X
3 1)	ee	Do not install water heaters or air handlers in attic	1				X													X
3 1)	ff	Step all decking down at least 6" from exterior doors	1				X							X						
3 1)	gg	Plumb for easy access to water shut off for entire house.	1				X													X
3 2)		Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X													

4. ENERGY USE

4 1)		Envelope and Systems: Implement a comprehensive approach to energy-efficient design.																			
4 1)	a i	Certified as ENERGY STAR® Home (Below 80 points on the Home Energy Rating System scale) for new construction.	Req'd							R											
4 1)	a ii	Design and install windows that at least meet requirements for ENERGY STAR labeled windows	Req'd			X	X						X								
4 1)	a iii	Install ENERGY STAR labeled programmable thermostat in all zones except those with radiant-floor heating	Req'd			X	X													X	
4 1)	b	Mechanical equipment must be accessible for service, including AC condensate drain pan and trap.	Req'd			X														X	
Ducted Heating and/or Cooling Systems:																					
4 1)	c	Third Party testing of duct leakage to < 6 cfm to outdoors / 100 sqft of conditional floor area	Req'd			X	X	R													
4 1)	d	Air conditioning equipment sized within 10% or next available size of ACCA Manual J.	Req'd			X	X	R													
4 1)	e	Forced air heating/cooling ductwork for primary space conditioning system complies with ACCA Manual D design criteria. System designed and sized to match room by room loads (submit sizing plan)	Req'd			X	X	R													
4 1)	f	If necessary, any ducts that run in outside walls must have at least R-7.5 between ducts and outside.	Req'd			X	X						X								
4 1)	g	Central air conditioning refrigerant charge and air flow documented to be within 10% of manufacturer recommendation.	Req'd			X	X	R													
4 1)	h	Air filter housings must be air-tight to prevent bypass or leakage.	Req'd				X													X	
4 1)	i	Air flow for each register measured and complies with Manual D design.	2				X	X													
4 1)	j	Returns OR transfer grill in each room with closeable door.	2			X															
4 1)	k	Use only Non - CFC AND Non-HCFC refrigerant	1			X	X														
4 1)	l	More than one return per zone.	1			X								X							
Hydronic Heating Systems:																					
4 1)	m	Hydronic distribution system located 100% within house envelope.	2			X	X										X				

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4 1)	n	Hydronic distribution system pipes insulated where they run through unconditioned (i.e. no thermostat) spaces (e.g. basements, crawlspaces, etc.).	1				X	X							X					
4 1)	o	Hydronic distribution system designed and sized to match room-by-room loads (submit sizing plan).	2				X	X	R											
4 1)	p	Hydronic boiler with less than 4 gallons water content and/or "low mass".	2				X	X												
4 1)	q	Boiler controls set up to "cold start" (i.e. does not maintain boiler water temperature 24/7, but allowed to drift down).	2				X	X												
4 1)	r	Modulating aquastat/outdoor temperature sensing controls to adjust circulating boiler water.	2				X	X												
Other Energy Saving Strategies:																				
4 1)	s	Install insulation to meet at least Grade II specifications (per RESNET National Home Energy Rating Standards) Provider's third party rater to verify by pre-drywall inspection	Req'd				X	X												
4 1)	t	Ensure heating and cooling systems are installed and operating per manufacturers specifications(dependant on which systems are installed, including radiant-floor heating):	Req'd				X	X												
	i	Provide documentation of proper refrigerant charge verified by super heat and/or sub-cooling method to within 15% of manufacturer's specifications.	Req'd				X	X	X											
	ii	Burner set to fire at nameplate input	Req'd				X													
	iii	Air handler setting/fan speed set to operate within manufacturer's specifications	Req'd				X													
	iv	Total air flow calibrated to operate within 10% of design flow	Req'd				X		X											
	v	Total external system static pressure not exceed equipment capability at rated airflow	Req'd				X													
4 1)	u	Points added for Home Energy Rating points between 49 and 0	0.5						X											
4 1)	v	Points added for Home Energy Rating points between 79 and 50	0.25						X											
4 1)	w	No air conditioning installed.	3				X	X												
4 1)	x	Points for each heating zone beyond one (excludes semi-conditioned basement).	1				X	X							X					
4 1)	y	Shade with trees at least 50% of all sidewalks, roadways, and parking areas within 50' of the house.	1				X					X								
4 1)	z	Planted (or building sited with) windbreak on north or northwest.	2				X					X								
4 1)	aa	Preserve or plant new shade trees and vegetation for shading west sides of building.	2				X					X								
4 1)	bb	Additional interior mass by adding second layer of (minimal 1/2") gypsum wall board.	3				X	X												
4 1)	cc	Trellises to shade west side glass.	1				X								X					
4 1)	dd	Low-solar admittance glass on west, whole window SHGC <.40.	2				X	X												
4 1)	ee	Awnings or overhang designed to reduce summer heat gain.	1				X	X							X					
4 1)	ff	Locate hot water heater within 20 feet pipe run of all showers/baths and kitchen.	2				X								X					
4 1)	gg	Whole house cooling/'night flushing' fan with tight insulated winter closure system.	2				X													X
4 1)	hh	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X													
Efficient Lighting + Appliances																				
Lighting:																				
4 2)	a	i	At least 10 (6 in homes <1,500 sq.ft) ENERGY STAR® or Vermont ENERGY STAR® Homes (VESH) qualified fluorescent light fixtures in VESH qualified high use locations [High Use = 2 or more hours/ average daily use].	Req'd						R										
4 2)	a	ii	Install ENERGY STAR Advanced Lighting Package (ALP)	3			X			X										

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4.2)	e	Per fixture of high-use ENERGY STAR® or equivalent lighting fixtures beyond Req'd fixtures (maximum 10 points).	2							R											
4.2)	f	Per hard-wired incandescent fixture with ENERGY STAR® screw-in bulbs installed (maximum 2 points).	1				X	X													
4.2)	g	Use a comprehensive approach to high-quality lighting design – points for lighting design submitted.	3				X	X													
4.2)	h	Light pollution minimized through avoiding no direct beam illumination beyond visible property lines.	1				X							X							
4.2)	i	Common spaces such as hallways that would otherwise require 24 hour lighting (e.g. multi-family) utilize day lighting and automatic lighting controls.	2				X														
4.2)	j	Interior motion sensor with photocell. (1 point per fixture, maximum 3 points)	1				X	X													
4.2)	k	Exterior motion sensor with photocell. (1 point per fixture, maximum 2 points)	1				X	X													
Appliances:																					
4.2)	b	ENERGY STAR® or equivalent Refrigerator. (See www.energystar.gov).	Req'd				X			X											
4.2)	c	ENERGY STAR® or equivalent Dishwasher, if dishwasher installed. (See www.energystar.gov).	Req'd				X			X											
4.2)	d	ENERGY STAR® or equivalent Clothes washing machine, if washing machine installed. (See www.energystar.gov).	Req'd				X			X											
4.2)	l	Other ENERGY STAR® appliances (See www.energystar.gov). (1 point per appliance)	1					X													
4.2)	m	Gas-fired clothes dryers with electronic ignition, if dryer hookup provided.	1							X											
4.2)	n	Install a clothesline – 2 points each for indoor and outdoor permanent clotheslines. (max. 4 points)	2				X					X							X		
4.2)	o	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X														
Sustainable Equipment + Renewable Energy																					
4.3)	a	No electric resistance space heat.	Req'd				X														
4.3)	b	No electric resistance domestic hot water systems except as solar back-up (electric back-up consumption may not exceed 2,000 kWh/yr).	Req'd				X			R											
4.3)	c	15% of home's total Annual Energy Requirements to be met by a renewable energy source, e.g Solar PV, Solar Therma, Biomass etc	Req'd				X	X	R												
4.3)	d	EPA, Canadian or MHA certified wood burning appliance as a primary heat source with an output capacity greater than 50% of Manual J or IBR heat load.	3				X	X	R												
4.3)	e	EPA, Canadian or MHA certified wood burning appliance as an auxiliary heat source with an output capacity less than 50% of Manual J or IBR heat load.	1				X	X	R												
4.3)	f	Drain heat-recovery system (I.e. "GFX" or "Drain Gain") 2 points per system.	2				X	X		X											
4.3)	g	Grey water heat recovery system.	2				X	X													
4.3)	h	Rough-in of plumbing and wiring and roof orientation for future solar hot water or photovoltaics.	2				X	X													
4.3)	i	Solar water heating. .02 pt per 100 BTU.day	0.02				X	X	R												
4.3)	j	Points per peak Watt photovoltaics and/or rated Watt of wind or hydro site generated power installed.	0.01				X	X	R												

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43)	k	Points per peak Watt photovoltaics and/or rated Watt of wind or hydro site generated power with grid connection (bonus).	0.02				X	X	R													
43)	l	Intake air solar preheating system (e.g. Solarwall, etc.).	2				X	X														
43)	m	On-site fuel cell.	3				X	X														
43)	n	On-site fuel cell powered by a renewable fuel source (additive with above).	3				X	X														
43)	o	On-site district heating system.	3				X	X														
43)	p	On-site district district heating system powered by a renewable fuel source (additive with above).	3				X	X														
43)	q	On-site co-generation.	3				X	X														
43)	r	On-site co-generation powered by a renewable fuel source (additive with above).	3				X	X														
43)	s	Electric vehicle recharging station.	2				X	X														X
44)	t	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X															

5. RESOURCE IMPACTS

Resource-efficient and environmentally responsible materials																						
51)	a	Only tropical wood that is third-party certified sustainably harvested (includes luan plywood).	Req'd				X	X														
51)	b	Use alternative to CCA (chromated copper arsenate) where treated wood is needed.	Req'd				X	X														
51)	d	No old-growth wood, (except reused) including clear redwood, Western cedar, Douglas Fir.	3				X	X														
51)	e	No CFCs or HCFCs in building materials or in manufacturing process (excluding refrigerants in refrigerators or air conditioning systems).	3				X	X														
51)	f	2 points for each 5% of total value of materials in the building products made with salvaged, recycled or waste-stream content. Examples include re-habilitation of a used house, used doors or cabinets, cellulose insulation, straw-based particle-board, fly-ash-content concrete, re-sawn salvaged wood, recycled plastic lumber, etc.	2				X		R													
51)	g	Per 10% of the value (\$) of solid structural wood that is third-party certified as sustainably harvested.	2						R	R												
51)	h	Per 10% of the value (\$) of non-solid structural wood that is third-party certified as sustainably harvested.	2						R	R												
51)	i	Per 5% fly ash type "C" or type "F" in concrete .	1						X	X												
51)	j	Non-petroleum concrete form release oil.	1						X				X									
51)	k	Engineered wood or steel beams (90% minimum).	1				X		R													
51)	l	Engineered wood headers (90% minimum).	1				X		R													
51)	m	Engineered floor framing (90% minimum).	2				X		R													
51)	n	Engineered roof framing (90% minimum).	2				X		R													
51)	o	Engineered wall framing (90% minimum).	2				X		R													
51)	p	Steel interior wall studs (90% minimum).	2				X		R													
51)	q	OSB (without added urea formaldehyde adhesive) roof decking .	1					X														
51)	r	OSB (without added urea formaldehyde adhesive) floor decking.	1					X														
51)	s	OSB (without added urea formaldehyde adhesive) wall sheathing.	1					X														
51)	t	Interior finger-jointed trim, minimum of 50%.	2					X	R													

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Category	Strategy	Approach	Points	Points Achieved	Deed	Town or State Map	Design Drawings or Specs	Contract or Receipts	Calculation	HERC &/or RBES	Photo (R-Req'd; X-Pick one)										
											Site	Foundation	Framing	Exterior Finish	Mechanical Rough-In	Insulation	Interior Finish	Mechanical Finish			
5 1)	u	Agricultural by-product based panels.	1					X													
5 1)	v	Straw bale, earth sheltered or other natural mass material system (not including log) construction: per 20% of component (i.e. walls) construction.	2				X	X	R												
5 1)	w	Cellulose insulation in walls.	3				X	X										X			
5 1)	x	Cellulose insulation in roof/ceilings.	3				X	X										X			
5 1)	y	Recycled mineral fiber insulation.	2				X	X										X			
5 1)	z	100% recycled fiberglass insulation with larger (less toxic) fibers.	2				X	X										X			
5 1)	aa	Structural Insulated Panel (SIP) construction: per 20% of component (i.e.. Walls/roof) construction.	1				X	X	R				X								
5 1)	bb	Tile - minimum 50% recycled content of tiles (1 point per 33% of total tiled area).	1				X	X	R												
5 1)	cc	Carpet - minimum 50% recycled content of carpet (1 point per 33% of total carpeted area).	1				X	X	R												
5 1)	dd	Carpet pad - minimum 50% recycled content of carpet pad (1 point per 33% of total carpeted area).	1				X	X	R												
5 1)	ee	Non-wood outdoor decking - minimum 50% (value) recycled content of non-wood decking (1 point per 33% of total decking area). OR 1 pt. if FSC Certified using same percents.	1				X	X	R												
5 1)	ff	Recycled content gypsum board.	3				X	X													
5 1)	gg	Natural-based product for finish siding (includes wood, masonry, fiber cement, stucco).	2				X	X													
5 1)	hh	Natural-based product for finish trim (includes wood, masonry, fiber cement, stucco).	2				X	X													
5 1)	ii	Exposed concrete floor with sealer and optional stain finish in living areas.	1				X	X											X		
5 1)	jj	Zero Ozone depleting spray foam insulation - all walls.	2				X	X													
5 1)	kk	Zero Ozone depleting spray foam insulation - all ceilings.	2				X	X													
5 1)	ll	No PVC piping.	2				X	X										X			
5 1)	mm	Use MDF or interior finger-jointed trim as alternative to solid wood	1				X	X													
Use of local or regional materials:																					
5 1)	nn	Points per 10% of value of solid structural wood that is regionally sourced (3 points within 200 miles, 2 points within 400 miles, 1 point within 800 miles), excluding concrete.	1				X	X	R												
5 1)	oo	Points per 20% of value of non-structural wood that is regionally sourced (3 points within 200 miles, 2 points within 400 miles, 1 point within 800 miles), excluding concrete.	1				X	X	R												
5 1)	oo	Points per 10% of value of non-wood materials that are regionally sourced (3 points within 200 miles, 2 points within 400 miles, 1 point within 800 miles), excluding concrete.	1				X	X	R												
Reduce, Re-Use and Recycle																					
Minimize waste and encourage diversion of waste for re-use and recycling during the construction process:																					
5 2)	a	Create and implement a plan for construction to provide for the efficient separation of materials which are reusable or recyclable, including separate containers, covered where Req'd, for the following: wood, cardboard, metal, drywall (grind or recycle on site) plastics, asphalt shingles, other materials for re-use for which local infrastructure exists (comply with your local solid waste management plan).	Req'd					X			X										
5 2)	b	Optimize material use by designing for standard ceiling heights, wall lengths and building dimensions in 2 foot increments.	3				X														
5 2)	c	Generate no more than half the national average of job-site waste. No more than 2.5 lbs per square foot of conditioned floor area may be sent to landfill and/or incinerators. ADD .5 pts for each additional 0.5 lbs per square foot reduction.	2					X	R												

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Use typical OVE (Optimal Value Engineering) framing details:																				
52)	d	24" center studs (OVE).	2				X						X							
52)	e	Eliminate jack studs in rough openings (OVE).	2				X						X							
52)	f	Non-structural headers in non-load-bearing walls (OVE).	2				X						X							
52)	g	Single top plate with stacked framing (OVE).	2				X						X							
52)	h	2-stud corners with drywall clips or plywood drywall nailers (OVE).	2				X						X							
52)	i	Job-site framing plan in architectural plan set and cut list on site.	3				X													
52)	j	Donate excess and re-usable materials for re-use.	2					X												
52)	k	Insulated concrete forms for foundation which stay in place or walls using at least 50% recycled content.	3				X	X				X	X							
Countertops:																				
52)	l	i	Install re-used countertops (minimum 75% of countertop area).	2				X	R											
52)	l	ii	Install countertops made from recycled materials (minimum 75% of countertop area).	1				X	R											
52)	l	iii	Install re-usable countertops (minimum 75% of countertop area).	1				X	R											
52)	l	iv	Install recyclable countertops (minimum 75% of countertop area).	1				X	R											
Encourage diversion of waste for recycling during occupancy																				
53)	a	Provide space for recycling containers at convenient location for storage of recyclables (Define space).	Req'd				X											X		
53)	b	Provide composting and/or worm bins on site.	1				X													
53)	c	Built-in kitchen recycling center.	1				X											X		
Water efficiency																				
54)	a	Landscaping that requires no irrigation system once mature.	3				X				X									
54)	b	Install 2.0 gpm shower heads (all).	1				X	X												
54)	c	Install 1.5 gpm shower heads (all).	2				X	X												
54)	d	Install high quality water-efficient toilet using 1.0 gallon or less per flush (all).	2				X	X												
54)	e	Separate and re-use gray water.	3				X	X												
54)	f	Install composting toilet.	3				X	X												X
54)	g	High-efficiency drip automatic irrigation system for gardens.	1				X	X			X									
54)	h	Collect and use rainwater for garden use.	1				X	X			X									
54)	i	Collect and use rainwater for potable use. Per all applicable state codes	3				X	X			X									
54)	j	Insulate hot and cold water pipes	1				X	X												X
54)	k	Install heat trap on cold and hot water lines to and from the water heater (if not integral to the water heater)	1				X	X							X					
54)	l	Innovative wastewater technology (constructed wetland, etc.).	3				X	X			X									
55)		Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X													
6. OCCUPANT HEALTH/INDOOR AIR QUALITY																				
<i>This includes using materials and systems that minimize pollutant introduction into the home as well as the use of ventilation to dilute and remove any pollutants that are introduced. It also includes health and safety of builders and workers that produce materials.</i>																				
Minimize sources of pollutants																				

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Category	Strategy	Approach	Points	Points Achieved	Deed	Town or State Map	Design Drawings or Specs	Contract or Receipts	Calculation	HERC &/or RBES	Photo (R-Req'd; X-Pick one)										
											Site	Foundation	Framing	Exterior Finish	Mechanical Rough-In	Insulation	Interior Finish	Mechanical Finish			
6.1	a	All combustion appliances (excluding gas ovens/ranges) must be vented to the outside and either sealed-combustion, direct vent, power-vented, induced draft, or aerodynamically de-coupled from the indoor air.	Req'd				X			X											
6.1	b	All solid fuel heating and water heating appliances (including fireplaces) must have tight-fitting doors and dedicated outside combustion air. Non-closed combustion systems must be aerodynamically de-coupled from the indoor air.	Req'd				X			X											
6.1	c	Garages to be 100% air sealed from adjacent living spaces.	Req'd				X			X											
6.1	d	Furnaces in garage must have completely sealed duct, cabinet and filter systems.	Req'd				X			X											
6.1	e	Provide smoke detectors per code (hardwired with battery backup).	Req'd				X	X													X
6.1	f	Install a CSA 6.19 listed CO monitor on each floor of home and in any occupied rooms adjacent to and/or above the garage.	Req'd				X	X													X
6.1	g	Non-mercury thermostats.	Req'd				X	X													
6.1	h	Foundation continuous footing drain with stone covered with filter fabric, drained to daylight or if necessary to drain to the interior, use a sealed sump pump system. (Drainage system not Req'd in pure sand.)	Req'd				X	X				X									
6.1	i	Basement foundation walls use porous backfill material.	Req'd				X	X				X									
6.1	j	Provide continuous crushed stone under footings or provide pipe through footing for drainage of any accumulated water under slab to drainage.	Req'd				X	X				X									
6.1	k	Vapor retarder (poly or rigid insulation) directly under slab.	Req'd				X	X				X									
6.1	l	Exterior of below grade foundation damp proofed.	Req'd																		
6.1	m	Crawlspaces not vented; crawlspace walls insulated; crawlspace floor with complete, continuous sealed vapor retarder, also sealed to walls. (Must complete all approaches.)	Req'd				X	X													X
6.1	n	Provide swales to divert surface water from hillsides.	Req'd				X				X										
6.1	o	No carpet in kitchens, bathrooms, spa areas, or within 3' of entry doors.	Req'd				X														X
6.1	p	Carpet installed on slab on grade or on concrete basement floor, must have: minimum R-10 continuous insulation under slab and minimum R-5 slab edge insulation break at foundation wall intersection and R-10 slab edge insulation outward of any walk-out slab edge.	Req'd				X	X													X
6.1	q	No adhesives for carpet attachments unless zero VOC (100 grams per liter or less).	Req'd				X	X													
6.1	r	Insulate and sheath using rigid draft stop, and air seal bathroom exterior walls behind showers and tubs before installing showers, tubs and spas.	Req'd				X	X						X							
6.1	s	Seal top of footing prior to pouring foundation wall OR provide continuous crushed stone base under footings.	1				X	X				X									
6.1	t	Exterior of below grade building envelope sealed with moisture barrier assembly system (e.g. Rub-R-Wall system, etc.).	3				X	X				X									
6.1	u	Slope top of backfill to achieve settled slope of 1" per foot to at least 3' from foundation. Pitch final grading to direct this water away from the building.	1				X	X			X										
6.1	v	Insulation over cold water pipes to avoid condensation on pipes in basements and crawlspaces.	2				X	X													X
6.1	w	Zero urea formaldehyde interior panel products or seal with water-based sealer.	2				X	X													
6.1	x	No petroleum-based flooring materials in house.	3				X	X													
6.1	y	Low VOC adhesives for sheet goods.	1				X	X													
6.1	z	No carpet in house.	3				X	X													X

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Category	Strategy	Approach	Points	Points Achieved	Deed	Town or State Map	Design Drawings or Specs	Contract or Receipts	Calculation	HERC &/or RBES	Photo (R-Req'd; X-Pick one)												
											Site	Foundation	Framing	Exterior Finish	Mechanical Rough-In	Insulation	Interior Finish	Mechanical Finish					
6 1)	aa	If Carpet is installed, must meet CRI low emission label standard.	1				X	X															
6 1)	bb	Carpet with no site-applied adhesives.	1				X	X															
Design and build foundations to minimize soil gas entry:																							
6 1)	ll	No paper faced gypsum under tiles in tubs, showers and spas.	Req'd				X	X															
6 1)	oo	Radon test after house is completed.	Req'd					X															
6 1)	qq	Heat detector (to automatically shut off heating system if fire).	Req'd					X															X
6 1)	tt	If home is located in EPA Radon Zone 1, design and install radon mitigation system	Req'd					X															R
6 1)	cc	Pipe all floor drains separate from footing drains; glue all floor drain joints.	1				X	X					X										
6 1)	dd	Provide above-grade cleanout of footing drains at high point of footing drains.	1				X	X				X	X										
6 1)	ee	Provide exhaust fan in attached garage automatically controlled to run for pre-set period of time when garage door closes.	1				X	X					X										
6 1)	ff	Provide exhaust fan in attached garage automatically controlled to run for pre-set period of time when garage door closes.	1				X	X															X
6 1)	gg	Provide storage space sealed and isolated from the living space for toxic materials such as paint, gasoline cans, etc.	1				X	X															X
6 1)	hh	Plumb/wire for central vacuum system.	1				X	X															X
6 1)	ii	Central vacuum system.	3				X	X															X
6 1)	jj	Non-chemical termite/carpenter ant barriers.	1				X	X															
6 1)	kk	Other non-chemical pest species resistant features.	1				X	X															
6 1)	mm	Built-in track-off mats or grates plus hard surface entry.	2				X	X															X
6 1)	nn	Rough-in for sub-slab radon exhaust stack, 4" sub-slab crushed stone installed.	2				X	X															X
6 1)	pp	Complete radon-exhaust system installed , if radon test is above 4 pCi/L	2					X															X
6 1)	rr	Non-radioactive smoke detector (per device).	1					X															
6 1)	ss	Low formaldehyde and low VOC-emission (250 grams per liter or less), including paints, solvents and adhesives.	3				X	X															
6 1)	uu	If home is not located in EPA Zone 1, then design and install radon mitigation system	1					X															R
6 1)	vv	Key footing and provide capillary break over footing with damp-proofing, low perm or elastomeric paint	1				X						X										
Provide ventilation to remove pollutants generated in the house																							
6 2)	a	Design and Install filtered exhaust ventilation in kitchen and all bathrooms per ASHRAE Standard 62.2 and use ENERGY STAR labeled exhaust fans.	Req'd				X	X															X
6 2)	b	Install an automatic, effective ventilation system which is quiet (less than 1.5 sones for surface-mounted equipment) and has low energy consumption (less than .5 watts/cfm for bath fan EOVS systems), providing at least 15 cfm per bedroom plus 15 cfm, such as one of the following:	Req'd							X													
6 2)	b i	Low-energy-use, quiet, durable bath fans with automatic control. As a minimum, the house must have an exhaust-only ventilation – EOVS system					X				X												
6 2)	b ii	Outside air ducted into furnace system return from outside, with fan-cycler control in conjunction with EOVS system (points - see below)					X	X															X
6 2)	b iii	Ducted heat recovery ventilation system (points – see below).					X				X												X
6 2)	b iv	Non-fan-powered ventilation system, if proven effective through performance testing.					X	X	X														
6 2)	c	Insulate all ventilation exchanging exhaust ductwork (minimum R-8) outside of the insulated envelope.	Req'd				X	X															X

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Category	Strategy	Approach	Points	Points Achieved	Deed	Town or State Map	Design Drawings or Specs	Contract or Receipts	Calculation	HERC &/or RBES	Photo (R-Req'd; X-Pick one)						
											Site	Foundation	Framing	Exterior Finish	Mechanical Rough-In	Insulation	Interior Finish
62)	d	Use rigid duct or other methods to keep fan back-pressure below 0.2" for EOVS systems.	Req'd				X	X						X			
62)	e	Air seal ventilation ductwork.	Req'd				X	X						X			
62)	f	Exhaust fan or duct to central system in every bathroom that has a shower, spa or bathtub.	Req'd				X			X							
62)	l	During Construction seal off all duct work AND clean all ductwork and coils before occupancy	Req'd				X	X						X			
62)	g	Install furnace fan cyclor control and automated damper fresh air inlet on return side of the distribution system with EOVS system for forced-air houses with ECM air handler.	2				X	X									X
62)	h	Install automatically controlled balanced heat recovery ventilation system with fresh air ducted to all occupied living spaces, and exhausted from all bathrooms and other moisture producing rooms. Recovery efficiency minimum 75%.	3				X	X									X
62)	i	Central air or ventilation system with minimum 30% dust spot efficiency filters.	2				X	X									
62)	j	Post-construction testing to meet minimum air flow requirements or IAQ performance standards (submit results).	2														
62)	k	Install all ventilation exchanging exhaust ductwork inside of the insulated envelope.	2				X	X		X							
62)	m	Protect unused moisture-sensitive materials from water damage through just-in-time delivery, storing unused materials on a raised platform, in a dry area or tenting materials	1				X	X									
62)	n	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.	1				X		X								
62)	o	After sheetrock is installed, vacuum house weekly	1				X	X									
62)	p	Perform third party testing of air flow rates for mechanical ventilation system	1				X	X		X							
63)		Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X										
7. KEEPING IT GREEN – OCCUPANT EDUCATION AND O&M																	
	Provide education for owners/occupants in the use and care of their dwellings																
71)	a	Educate occupants about the buildings' goals and strategies and impacts on costs of operating the building, while addressing obstacles to occupant education, such as language, literacy or elderly. Provide training of owners/occupants for all control systems in the house.	Req'd					R									
71)	b	Provide a "User's Manual" for the house, including written operation instructions for the house, maintenance schedule, maintenance instructions, equipment literature, equipment warranties.	Req'd					R									
71)	c	Provide "VBG Scorecard" to owners/occupants.	Req'd					R									
71)	d	Provide owner with information about local, state and federal incentive programs for renewable energy	Req'd					R									
71)	e	Provide wire and valve labeling, diagrams and descriptions of system controls adequate for future maintenance and repair by a professional.	2				X	X									X
71)	f	Provide photo record of framing with wiring and utilities installed, photos taken prior to installing insulation and interior sheathing/drywall. Photos keyed to location in or around home.	3											R			
72)	g	Install approach that meets the goal of this strategy not listed above (upon documentation and submission to VBG Program Committee).	TBD				X										