CHAPTER 1

SCOPE AND ADMINISTRATION

101 Title. The title of this document is the National Green Building Standard™, hereinafter referred to as "this Standard."

102 Scope. This Standard provides criteria for rating the environmental impact of construction practices to achieve conformance with specified performance levels for green residential buildings.

103 Intent. This Standard shall establish practices for the design and construction of green residential buildings. This Standard is intended to provide flexibility to permit the use of innovative approaches and techniques. This Standard is not intended to abridge safety, health or environmental requirements contained in other applicable laws, codes, or ordinances.

104 Applicability. The provisions of this Standard shall apply to construction of the residential portion(s) of any building not classified as an institutional use in all climate zones within the United States. This Standard shall also be used for alterations and remodels, mixed-use residential buildings, and historic buildings where applicable.

105 Referenced Documents. The codes, standards and other documents referenced in this Standard shall be considered part of the requirements of this Standard to the prescribed extent of each such reference.

106 Appendices. The provisions in the appendices of this Standard shall not apply unless specifically adopted.

107 Alternative Compliance Methods. This Standard is not intended to prevent the implementation of green building practices that are not specifically included herein.

108 Documentation. Verification of conformance to green building practices shall be the appropriate construction document, architectural plans, site plans, specifications, builder certification and sign-off, or other data that demonstrates conformance as determined by the adopting entity.

108.1 Alternate Methods of Documentation. Alternate methods of documentation shall be acceptable where the adopting entity finds that the proposed documentation demonstrates conformance with the intent of the proposed green building practice.

109 Conformance Language. The green building provisions are written in a mandatory language by way of using the verb "to be", "is", "are", etc. The intent of the language is to require the user to conform with a particular practice in order to qualify for the number of points assigned to that practice. Where the term "shall" is used, or the Points are designated as "Mandatory, the provision or practice is mandatory.

110 Mandatory Practices. This Standard does not require compliance with any specific practice except those noted as mandatory.

111 Administration. The adopting entity shall specify performance level(s) to be achieved as identified in Chapter 3; and shall provide a process to ensure compliance with this Standard.

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111.1 Alternate Points Certification. A licensed professional on the site design team, or other qualified professional acceptable to the adopting entity, shall be permitted to certify the points earned in this Standard. The certification of points shall be in writing.

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CHAPTER 2

DEFINITIONS

SECTION 201 - GENERAL

201.1 Scope. Unless otherwise expressly stated, the following words and terms shall, for the purposes of this Standard, have the meanings shown in this chapter.

201.2 Interchangeability. Words used in the present tense include the future; words stated in the masculine gender include the feminine and neuter; the singular number includes the plural and the plural, the singular.

201.3 Terms defined in other documents. Where terms are not defined in this Standard and are defined in other referenced documents, such terms shall have the meanings ascribed to them as in those documents.

201.4 Terms not defined. Where terms are not defined through the methods authorized by this section, such terms shall have ordinarily accepted meanings such as the context implies.

SECTION 202 – DEFINITIONS

ADAPTIVE REUSE. The adaptation of an existing structure for a use different from its original or previous use, e.g. the conversion of an office building into apartment units.

ADDITION. (IBC/IRC) An extension or increase in floor area or height of a building or structure.

ADOPTING ENTITY. The governmental jurisdiction, model green building program, or other entity that adopts this Standard, and is responsible for implementation and administration of the practices herein.

ADVANCED FRAMING. Code compliant layout, framing and engineering techniques that minimize the amount of framing products used and waste generated to construct a building while maintaining the structural integrity of the building.

AFUE. Annual Fuel Utilization Efficiency – The ratio of annual output energy to annual input energy which includes any non-heating season pilot input loss, and for gas or oil-fired furnaces or boilers, does not include electrical energy.

AIR BARRIER. A layer of material designed to minimize the movement of air through the building envelope.

AIR HANDLER. A blower or fan used for the purpose of distributing supply air to a room, space, or area.

ARCHITECTURAL COATINGS. A coating (paint or stain) recommended for field application to stationary structures and their appurtenances, to portable buildings, to pavements, or to curbs. The definition of architectural coating excludes: adhesives and coatings recommended by the manufacturer or importer solely for shop applications or solely for application to non-stationary structures, such as airplanes, ships, boats, and railcars.

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BIOBASED PRODUCT. A commercial or industrial product (other than food or feed) that is composed, in whole or in significant part, of biological products or renewable agricultural materials (including plant, animal, and marine materials) or forestry materials.

BROWNFIELD (also EPA-Recognized Brownfield). Real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant, and also includes Brownfield Site as defined in Public Law 107-118 (H.R. 2869) - "Small Business Liability Relief and Brownfields Revitalization Act" signed into law January 11, 2002.

BUILDING, EXISTING. Building erected prior to the adoption of this standard, or one for which a legal building permit has been issued. (IBC)

CERTIFIED GEOTHERMAL SERVICE CONTRACTOR. A person who has a current certification from the International Ground Source Heat Pump Association as an installer of Ground Source Heat Pump systems or as otherwise approved by the adopting entity.

COP (Coefficient of Performance). A measure of the heating efficiency of ground and air source heat pumps defined as the ratio of the rate of heat provided by the heat pump to the rate of energy input, in consistent units, for a complete heat pump under defined operating conditions. (See EER as a measure of the cooling efficiency of heat pumps.)

CONDITIONED SPACE. An area or room within a building being heated or cooled, containing uninsulated ducts, or with a fixed opening directly into an adjacent conditioned space. (IECC)

CONSTRUCTION WASTE MANAGEMENT PLAN. A system of measures designed to reduce, reuse, and recycle the waste generated during construction.

CONTINUOUS, PHYSICAL FOUNDATION TERMITE BARRIER. An uninterrupted, non-chemical method of preventing ground termite infestation, e.g., aggregate barriers, stainless steel mesh, flashing, or plastic barriers.

DEMAND CONTROLLED LOOPS. A hot water circulation (supply and return) loop with a pump that runs "on demand" when triggered by a user activated switch or motion activated sensor.

DESUPERHEATER. An auxiliary heat exchanger that uses superheated gases from an air-conditioner's or heat pump's vapor-compression cycle, to heat water.

DIRECT VENT APPLIANCE. A fuel-burning appliance with a sealed combustion system that draws all air for combustion from the outside atmosphere and discharges all flue gases to the outside atmosphere. (ICC)

DRAIN-WATER HEAT RECOVERY (DWHR). A system to re-capture the heat energy in drain-water and use it to preheat cold water entering the water heater or other water fixtures.

DURABILITY. The ability of a building or any of its components to perform its required functions in its service environment over a period of time without unforeseen cost for maintenance or repair. (CSA)

DWELLING UNIT. A single unit providing complete, independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. (IRC)

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EER (Energy Efficiency Ratio). A measure of the instantaneous energy efficiency of electric air conditioning defined as the ratio of net equipment cooling capacity in Btu/h to total rate of electric input in watts under designated operating conditions. When consistent units are used, this ratio becomes equal to COP. (See also Coefficient of Performance.)

ENVIRONMENTAL IMPACT. "See Life Cycle Environmental Impact."

EROSION CONTROLS. Measures that prevent soil from being removed by wind, water, ice, or other disturbance.

FROST-PROTECTED SHALLOW FOUNDATION. An insulated foundation system with a footing depth above the local frost heave depth.

GREYFIELD SITE. A previously developed site with abandoned or underutilized structures, and little or no contamination or perceived contamination.

GRAY WATER. Waste discharged from lavatories, bathtubs, showers, clothes washers and laundry trays. (IPC)

GROUND SOURCE HEAT PUMP. Space conditioning and/or water heating systems that employs a geothermal resource such as the ground, groundwater, or surface water as both a heat source and a heat sink and use a reversible refrigeration cycle to provide both heating and cooling.

HSPF (**Heating Seasonal Performance Factor).** The total seasonal heating output of a heat pump, in Btu, divided by the total electric energy input during the same period, in watt-hours using a defined test methodology

HARDSCAPE. Inanimate objects including stone, masonry, concrete and asphalt surfaces.

HEAT PUMP. An appliance having heating or heating/cooling capability and that uses refrigerants to extract heat from air, liquid or other sources. (IRC)

HYDROZONING. Groupings of planted flora that have similar watering needs. .

IMPERVIOUS SURFACE. Hard-covered ground area that prevents/retards the entry of water into the soil at that location causing water to run off.

INDIRECT FIRED WATER HEATER. Water Storage Tank with no internal heating elements or burners connected by piping to an external heating source such as a gas or oil fired boiler.

INTEGRATED PEST MANAGEMENT. A sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks.

INFILL SITE. Vacant or underutilized land that includes two or more of the following: road, electrical power, sewer, or water.

INFILTRATION. The uncontrolled inward air leakage into a building caused by the pressure effects of wind or the effect of differences in the indoor and outdoor air density or both. (IECC)

LAVATORY FAUCETS. A valve for dispensing hot and/or cold water to a basin used for washing hands and face, but not for food preparation.

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LIFE CYCLE ANALYSIS/ASSESSMENT (LCA). An accounting and evaluation of the environmental aspects and potential impacts of materials, products, assemblies, or buildings throughout their life—from raw material acquisition through manufacturing, construction, use, operation, demolition, and disposal.

LOW-IMPACT DEVELOPMENT (LID). A storm water management approach that attempts to recreate the predevelopment hydrology of a site by using lot level topography and landscape to deter storm water runoff and promote soil infiltration and recharge.

LOW-VOC. Because they lower the emissions of potentially harmful pollutants, low- or no-VOC products can improve indoor and outdoor environmental quality and human health.

MASS WALLS. Mass walls are constructed of concrete block, concrete, insulated concrete form (ICF), masonry cavity, brick, earth (adobe, compressed earth block, rammed earth) and solid timber/logs, with at least 50% of the required R-value on the exterior of the wall (in accordance with IECC 402.2.3.

MERV (Minimum Efficiency Reporting Value). The Minimum Efficiency Reporting Value for filters in accordance with criteria contained in ASHRAE Standard 52.2-1999.

MIXED-USE DEVELOPMENT. A project that incorporates a mixture of uses (i.e. residential, retail, commercial, etc.) in a single structure or on the same site.

MODULAR HOME CONSTRUCTION. Finished 3-dimensional sections of the complete building or dwelling unit built in a factory and transported to the jobsite to be joined together on a permanent foundation.

MULTI-UNIT BUILDING. A building containing multiple dwelling units.

PANELIZED ~~HOME~~ ASSEMBLIES. Factory assembled wall panels, roof trusses, and or other components installed on site.

PERFORMANCE PATH. An alternative set of standards (to the Prescriptive) with defined performance metrics.

PERMEABLE MATERIAL. A material that permits the passage of water vapor and/or liquid.

POST-CONSUMER RECYCLED CONTENT. Proportion of recycled material in a product generated by households or by commercial, industrial and institutional facilities in their role as end-users of the product, which can no longer be used for its intended purpose. This includes returns of material from the distribution chain.

PRE-ASSEMBLED. Systems-built components of a building including, but not limited to, floor systems, roof systems, wall systems (or a combination of) that are designed, engineered, and assembled to specification using repeatable processes.

PRE-CONSUMER (POST-INDUSTRIAL) RECYCLED CONTENT. Proportion of recycled material in a product diverted from the waste stream during the manufacturing process. Content that shall not be considered pre-consumer recycled includes the re-utilization of materials such as rework, regrind or scrap generated in a process and capable of being reclaimed within the same process that generated it.

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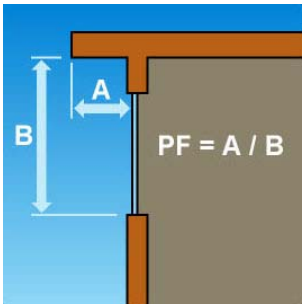
PRE-CUT. Systems-built components of a building including, but not limited to, elements of floor systems, roof systems, wall systems (or a combination of) that are designed, engineered, and cut to specification using repeatable processes.

PRESCRIPTIVE PATH. A set of provisions in a Code or Standard that are required to be complied with as written.

PRESERVATION. The process of applying measures to maintain and sustain the existing materials, integrity, and/or form of a building, including its structure and building artifacts.

PROJECTION FACTOR. The ratio of the overhang width to the overhang height above the door threshold or window sill.



R-VALUE (THERMAL RESISTANCE). The inverse of the time rate of heat flow through a body from one of its bounding surfaces to the other surface for a unit temperature difference between the two surfaces, under steady state conditions, per unit area (h × ft^2 × °F/Btu) [(m^2 × K)/W]. (IECC)

RECYCLED-CONTENT MATERIALS. Resources containing post-consumer or pre-consumer (post-industrial) recycled content.

RENEWABLE ENERGY. Energy that is derived from sources that are regenerative or cannot be depleted.

RENEWABLE ENERGY SOURCE. Source of energy (excluding minerals) derived from incoming solar radiation, including natural solar radiation itself, photosynthetic processes; from phenomenon resulting therefrom, including wind, hydropower, waves and tides, lake or pond thermal differences; from decomposition of waste material, including methane from landfills; from processes that use regenerated materials, including wood and bio-based products; and from the internal heat of the earth, including nocturnal thermal exchanges.

RENOVATION. The process of restoring or improving a structure, including outdoor living spaces.

REPLACEMENT. The act or process of replacing material or systems in-kind.

SEDIMENT CONTROLS. Practices used on building sites to prevent sand, soil, and particulates or dust from construction from reaching waterways.

SEER (Seasonal Energy Efficiency Ratio). The total cooling output of an electric air conditioner (or heat pump) during its normal annual usage period for cooling, in Btu divided by the total electric energy input during the same period, in watt-hours (Wh) expressed as Btu/Wh. SEER is the cooling performance equivalent measurement of HSPF.

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SOLAR HEAT GAIN COEFFICIENT (SHGC). The ratio of the solar heat gain entering the space through the fenestration assembly to the incident solar radiation. Solar heat gain includes directly transmitted solar heat and absorbed solar radiation which is then released into the space. A lower SHGC lowers the amount of transmitted solar energy into the space. (IECC)

STEEP SLOPES. Slopes equal to or greater than 25% (≥ 25%).

STRUCTURED PLUMBING SYSTEM. An Engineered plumbing piping layout, which is specifically designed and installed as designed, which minimizes the volume of water in the hot water supply lines between the hot water heater and each shower, tub, kitchen or lavatory sink outlet. Such systems can be the traditional trunk-branch-twig designs, or use "home run," "manifold," or "parallel piping" systems, in which separate lines are run from a manifold located at the water heater to each outlet site, or a hybrid in which trunks run to manifolds centrally located among clusters of outlet locations at different ends of the residence.

UA. The total U-factor times Area for a component or building.

***U*-FACTOR, THERMAL TRANSMITTANCE.** The coefficient of heat transmission (air to air) through a building envelope component or assembly, equal to the time rate of heat flow per unit area and unit temperature difference between the warm side and cold side air films (Btu/h • ft^2 • °F). (IRC)

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from a space. (IRC)

VOC (Volatile Organic Compounds). A class of chemicals containing carbon and hydrogen that emit gases from solids or liquids.

WATER FACTOR (Water Consumption Factor). The quotient of the total weighted per-cycle water consumption divided by the capacity of the clothes washer.

WATER-RESISTIVE BARRIER. A material behind an exterior wall covering that is intended to resist liquid water that has penetrated behind the exterior covering from further intruding into the exterior wall assembly. (IRC)

WETLANDS. Areas that are saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands are further defined by the EPA in the *Code of Federal Regulations*.

WOOD BASED PRODUCT. Any material which consist of a majority of wood or constituents derived from wood (e.g. wood fiber) as measured by either weight or volume.

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CHAPTER 3

COMPLIANCE METHOD

301 Environmental Performance Levels. The building, project, site, and/or development's environmental performance level shall consist of all mandatory requirements, plus points assessed using the point system specified within this Chapter. The level of performance will be based on the points achieved in accordance with Table 303.1, 303.2, or 303.3 as applicable.

302 Awarding of Points. Points shall be awarded as follows:

(1) The maximum number of points that can be awarded for each practice is noted with that practice.

(2) Point allocation for multi-unit buildings shall be as prescribed in Section 304.

(3) The Adopting Entity shall allow new products and practices to be added where deemed to meet the intent of this Standard.

303 Threshold Performance Levels.

303.1 Green Subdivisions. The threshold points required for the environmental performance levels for a green subdivision shall be in accordance with Table 303.1.

Table 303.1
Threshold Point Ratings for Green Subdivisions

Green Subdivision Category		Performance Level Points			
		One Star	Two Stars	Three Stars	Four Stars
Chapter 4	Green Subdivisions	**79**	**104**	**134**	**175**

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303.2 Green Buildings. The threshold points required for the environmental performance levels for a green building shall be in accordance with Table 303.2. To qualify for one of these performance levels, all of the following shall be satisfied:

(1) The threshold number of points, in accordance with Table 303.2, shall be achieved as prescribed in Categories 1 through 6. The lowest level achieved in any category shall ~~be~~ determine the overall performance level achieved for the building.

(2) In addition to the threshold number of points in each category, all mandatory provisions of each category shall be implemented.

(3) In addition to Section 701, either Section 702 (the Performance Analysis) or Section 703 (the Prescriptive Method) shall be used to establish the threshold Performance Level under Category 3 (Energy Efficiency).

(4) In addition to the threshold number of points prescribed in Categories 1 through 6, 100 points from Category 7 shall be achieved from any of the Categories. Where deemed appropriate by the adopting entity, ~~s~~ additional points (Category 7) may be assigned to another category (or categories) to increase the threshold points required for that category (or categories). Points shall not be reduced by the adopting entity in any of the seven other categories.

Table 303.2
Threshold Point Ratings for Green Buildings

Green Building Categories			Performance Level Points*			
			BRONZE	SILVER	GOLD	EMERALD
1.	Chapter 5	Lot Design, Preparation, and Development	37	59	85	114
2.	Chapter 6	Resource Efficiency	31	66	101	136
3.	Chapter 7	Energy Efficiency	30	70	100	120
4.	Chapter 8	Water Efficiency	20	25	30	40
5.	Chapter 9	Indoor Environmental Quality	53	63	78	103
6.	Chapter 10	Operation, Maintenance and Building Owner Education	8	10	11	12
7.		Additional Points from any category	100	100	100	100
		Total Points:	279	393	505	625

* In addition to the threshold number of points in each category, all mandatory provisions of each category shall be implemented.

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303.3 Green Remodel. The threshold points required for the environmental performance levels for a green remodel shall be in accordance with Table 303.3.

Table 303.3
Threshold Point Ratings for Green Remodels

Green Remodel Practice	Performance Level			
	BRONZE	SILVER	GOLD	EMERALD
Increase in efficiency per Section 305.3.1.2 (d)*	25%	50%	75%	100%

* See Sections 305.3.1.2(a), (b), and (c) for mandatory compliance

304 Point Allocation for Multi-Unit Buildings. For multi-unit buildings, points for the green building practices that apply to multiple units shall be credited once for the entire building. Where points are credited, practices shall be implemented in all units as applicable. Where application of a prescribed practice allows for a different number of points for different units in a multi-unit building, the fewer number of points shall be awarded.

305 Point Allocations for Renovations and Additions. This section sets threshold and requirements for renovations and additions of less than 50 percent of the aggregate area of existing construction.

305.1 Intent. This section is intended to:

A. Provide guidance on applying this Standard to additions and renovations.

B. Provide thresholds for specific practices as applicable to renovations and additions.

305.2 How to Apply this Standard to an Addition or Renovation

305.2.1. Use Section 305.3 to meet a threshold environmental performance level as applicable.

305.2.2. Criteria listed in Chapters 4 through 10 may include specific criteria or point modifications applicable to additions and renovations.

305.2.3. If there are specific renovation and/or addition criteria included in a practice, the item is intended to be modified as indicated.

305.2.4. If there are no renovation or addition criteria included in a practice, the practice is intended to apply the same as for new construction.

305.2.5 A project that includes both Addition and Renovation scope should use either the Addition Note or both notes, as appropriate. Projects that include only Addition or Renovation elements should use the note appropriate to the scope of work included in project.

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305.3 Threshold Environmental Performance for Renovations/ Additions

305.3.1 The building or dwelling unit shall comply with either Section 305.3.1.1 (Path One) or Section 305.3.1.2 (Path Two) as applicable. The mandatory provisions required by Section 303 do not apply to the renovation/addition threshold performance requirements of Section 305.3.

305.3.1.1 Path One. Path One is applicable to all buildings and dwelling units constructed during or after 1980. Buildings or dwelling units constructed prior to 1980 may choose Path One or Path Two in Section 305.3.1.2.

(a) Complete the mandatory renovation/addition practices required by Table 305.3.1.1 for the entire existing building or dwelling unit, including any renovation/addition.

Table 305.3.1.1 - Mandatory Renovation/Addition Practices		
(1)	Chapter 5	
(2)	605.1	Construction Waste Management Plan
(3)	701.2	Minimum Energy Efficiency Requirements
(4)	701.4.1	Space heating and cooling system sizing
(5)	701.4.2	Duct System sizing
(6)	702 OR 703	Building Energy Efficiency (Performance or Prescriptive Path)
(7)	801.1	Water Efficiency
(8)	901.1.1	Natural draft equipment separated from conditioned air
(9)	901.2	Masonry Fireplaces
(10)	901.5	No Carpet in Bathrooms
(11)	902.1	Minimum ventilation for bathrooms and kitchens
(12)	902.9	Separation of HVAC System During Construction
(13)	903.5.1	Materials with no visible mold*
(14)	903.5.2	Walls not enclosed with high moisture insulation*
(15)	903.7.1	Plumbing distribution lines not installed in exterior wall (new distribution lines)
(16)	904.2.1	Replace unsealed combustion gas dryer vent (if existing)
(17)	904.3	Eliminate unvented heater (if existing)
(18)	1001.1	Building Owner's Manual

* New, reused and salvaged materials only. Excludes undisturbed existing materials.

(b) Achieve the threshold number of points per Table 303(2) for the desired performance level. Points associated with the mandatory renovation/addition practices required by Table 305.3.1.1 shall be included in the points required to reach a desired performance level of Table 303(2).

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305.3.1.2 Path Two. Path Two is applicable to buildings and dwellings units constructed prior to 1980.

(a) Verify building or dwelling unit was permitted prior to December 31, 1979.

(b) Implement requirements of Chapter 9, Sections 901.1.1, 901.5, 902.1, 902.9, 904.2.1 and 904.

(c) Measure baseline resource efficiencies in the following two categories:

(1) Energy efficiency: Energy Efficiency is based on the annual electrical, gas, wood, heating oil or other total fuel Btu use. Renewable energy sources such as solar hot water shall not be included in this baseline assessment.

(2) Water Efficiency: Water Efficiency is based on the annual gallons used.

(d) Increase efficiency in both categories (c)(1) and (c)(2) to achieve the desired performance level of Table 303(3).

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CHAPTER 4

GREEN SUBDIVISIONS

GREEN BUILDING PRACTICES	POINTS
401 **Site Selection.**	
401.0 Intent. The site is selected to minimize environmental impact by one or more of the following	
401.1 Environmentally sensitive areas are avoided.	**6**
401.2 An infill site is selected.	**4**
401.3 A greyfield site is selected.	**5**
401.4 An EPA-recognized Brownfield site is selected.	**4**
402 **Project Team, Mission Statement and Goals.**	
402.1 A knowledgeable team is established and team member roles are identified with respect to lot design, preparation, and development. A written mission statement that includes the project's goals and objectives is developed.	**4**
402.2 Training is provided to onsite supervisors and team members regarding the green development practices to be used on the project.	**3**
402.3 A checklist of green development practices to be used on the project is created and filled out regarding the site.	**3**
403 **Site Design.**	
403.0 Intent. The site is designed to minimize environmental impacts and to protect, restore, and enhance the natural features and environmental quality of the site.	
403.1 Natural resources are conserved by one or more of the following: **(1)** A natural resources inventory is used to create the site plan.	**5**
(2) A plan to protect and maintain priority natural resources/areas during construction is created. (See Section 404 for guidance in forming the plan.)	**5**
(3) Builder or member of builder's team participates in a natural resources conservation program.	**4**

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GREEN BUILDING PRACTICES	POINTS
(4) Streets, buildings, and other built features are located to conserve high priority vegetation.	**4**
403.2 Development in which 75% of the building sites are designed with the longer dimension of the structure to face within 20 degrees of south.	**6**
403.3 Slope disturbance is minimized by one or more of the following.[(1)]	
(1) Development on steep slopes is minimized.	**4**
(2) Hydrological/soil stability study for steep slopes is completed and used to guide the design of all buildings onsite.	**4**
(3) Road and driveways are aligned with natural topography to minimize their grade and reduce cut and fill.	**5**
(4) Long-term erosion effects are reduced through the design and implementation of terracing, retaining walls, landscaping, and restabilization techniques.	**6**
Point Modification: (1) Points shall be awarded only if there are developable steep slopes in the area.	
403.4 Soil disturbance and erosion are minimized by one or more of the following: *(Also see Section 404)*	
(1) Construction activities are scheduled to minimize length of time that soils are exposed.	**4**
(2) Utilities are installed using alternative means such as a tunneling instead of trenching, use of smaller (low ground pressure) equipment or geomats to spread the weight of construction equipment, shared utility trenches or easements.	**4**
(3) Limits of clearing and grading are demarcated.	**4**
403.5 Storm water is managed using one or more of the following low impact development techniques:	
(1) Natural water and drainage features are preserved and used.	**6**
(2) Storm water management plan is developed and implemented that minimizes concentrated flows and seeks to mimic natural hydrology, e.g., vegetative swales, French drains, wetlands, drywells, and rain gardens.	**6**
(3) Impervious surfaces are minimized and permeable materials are used for driveways, parking areas, walkways, and patios.	**5**

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GREEN BUILDING PRACTICES	POINTS
403.6 Landscape plan is developed to limit water and energy demand while preserving or enhancing the natural environment. Examples of techniques may include, but are not limited to, one or more of the following;	
(1) A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	**5**
(2) Turf grass species and other vegetation that are native or regionally appropriate are selected.	**4**
(3) Turf areas are limited. Native and regionally appropriate trees and vegetation are selected so as to complement the natural setting.	**4**
(4) Plants with similar watering needs are grouped (hydrozoning).	**5**
(5) Species and locations for tree planting are identified to increase summer shading of streets, parking areas, and dwellings and moderate temperatures.	**5**
(6) Vegetative wind breaks or channels are designed as appropriate to local conditions.	**4**
(7) Onsite tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction or as base for walking trails.	**3**
(8) An integrated pest management plan to minimize chemical use in pesticides and fertilizers is established.	**4**
(9) Common area watering is controlled by a weather based or moisture based irrigation controller.	**6**

403.7 Measures are implemented to support wildlife habitat.	
(1) Wildlife habitat is maintained.	**5**
(2) Measures are instituted to establish or promote wildlife habitat.	**4**
(3) Open space is preserved as wildlife corridor.	**5**
(4) Builder or member of builder's team participates in wildlife conservation program.	**5**

403.8 An operation and maintenance plan (manual) is prepared and outlines ongoing service of common open space, utilities (storm water, waste water), and environmental management activities.	**5**

403.9 Existing building(s) is disassembled for reuse or recycling of building materials.	**6**

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GREEN BUILDING PRACTICES	POINTS

404
Site Development and Construction.

404.0 Intent. Environmental impact during construction is minimized.

404.1 Onsite supervision and coordination is provided during clearing, grading, trenching, paving, and installation of utilities to ensure that specified green development practices are implemented. *(Also see Section 403.4)*	**4**

404.2 Designated trees and vegetation are preserved by one or more of the following:	
(1) Fencing or equivalent to protect trees and other vegetation is installed.	**4**
(2) Trenching, significant changes in grade, and compaction of soil and critical root zones in "tree save" areas are avoided.	**4**
(3) Damage to designated existing trees and vegetation is mitigated during construction through pruning, root pruning, fertilizing, and watering.	**4**

404.3 Onsite soil disturbance and erosion are minimized by one or more of the following:	
(1) Limits of clearing and grading are demarcated.	**5**
(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction vehicles, material storage, and washout.	**4**
(3) Sediment and erosion controls are installed and maintained.	**5**
(4) Topsoil is stockpiled and covered for later use to establish landscape plantings.	**5**
(5) Soil compaction from construction equipment is reduced through laying lightweight geogrids, mulch, chipped wood, or plywood sheets.	**4**
(6) Disturbed areas are stabilized within the EPA recommended 14-day period.	**4**
(7) Soil is improved with organic amendments and mulch.	**4**

405
Innovative Practices

405.0 Intent. Innovative site design, preparation, and development practices are used to enhance environmental performance. Waivers or variances from local development regulations are obtained and innovative zoning practices are used to implement such practices as applicable.

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GREEN BUILDING PRACTICES	POINTS
405.1 Driveways or parking is shared.	**5**
405.2 Street widths and right-of-ways are minimized per local code recommendations and consistent with national standards set by organizations such as the Institute of Transportation Engineers (ITE).	**6**
405.3 Cluster Development is implemented in accordance with the following:	
(1) Natural or scenic qualities of the site are preserved by modifying the applicable zoning ordinance or local law to provide an alternative method for the layout, configuration and design of lots, buildings and structures, roads, utility lines and other infrastructure, parks, and landscaping.	**7**
(2) Cluster development enables and encourages flexibility of design and development of land in such a manner as to preserve the natural and scenic qualities of the site.	**7**
405.4 Innovative Zoning Techniques are implemented in accordance with the following:	
(1) Innovative zoning ordinances or local laws are developed and created to promote green building which may include incentives for permissible adjustments to population density, area, height, open space, mixed-use or other provisions for the specific purpose of open space, natural resource preservation or protection and/or mass transit usage. Other innovative zoning techniques may be considered on a case by case basis.	**6**
(2) Use and potential increase in zoned use are promoted on sites where environmental effects are minimized and infrastructure is readily available and adequate, while providing for reduced development on sensitive sites.	**6**
(3) Community-based amenities are provided which promote higher density living (such as parks, plazas, mixed-use and open space) beyond code requirements, with incentives.	**6**
405.5 Constructed wetlands or other natural innovative wastewater treatment technologies are used as permitted by local code.	**7**
405.6 Mass transit access is in accordance with one or more of the following:	**6**
(1) A site is selected within ½ mile of pedestrian access to a public transit system.	
(2) Walkways, bikeways, street crossings, and entrances designed to promote pedestrian activity are provided. New dwellings are connected to existing sidewalks and areas of development.	

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CHAPTER 5

LOT DESIGN, PREPARATION, AND DEVELOPMENT

GREEN BUILDING PRACTICES	POINTS
501 **Lot Selection**	
501.1 The lot is selected to minimize environmental impact by one or more of the following:	
(1) Environmentally sensitive areas are avoided.	**6**
(2) An infill lot is selected.	**4**
(3) A greyfield lot is selected.	**5**
(4) An EPA-recognized Brownfield lot is selected.	**5**
(5) An adaptive reuse lot is selected.	**5**
Addition and Renovation Note: This Section does not apply to additions or renovations.	
501.2 A range of mass transportation choices are promoted by one or more of the following:	**5**
(1) A lot is selected within ½ mile of pedestrian access to a public transit system, rail, or ferry station or within ¼ mile of a public bus station.	
(2) Walkways, street crossings, and entrances designed to promote pedestrian activity are provided. New buildings are connected to existing sidewalks and areas of development.	
(3) A lot is selected within ½ mile of at least six essential services, (e.g., grocery store, post office, place of worship, community center, daycare center, bank, school, restaurant, medical/dental office, and Laundromat/dry cleaner.)	
Addition and Renovation Note: This Section does not apply to additions or renovations.	
502 **Project Team, Mission Statement and Goals**	
502.1 A knowledgeable team is established and team member roles are identified with respect to lot design, preparation, and development. A written mission statement that includes the project's goals and objectives is developed.	**4**

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GREEN BUILDING PRACTICES	POINTS

503
Lot Design

503.0 Intent. The lot is designed to minimize environmental impact by protecting, restoring, and enhancing the natural features and environmental quality of the lot.

503.1 Natural resources are conserved by one or more of the following:	
(1) A natural resources inventory is completed under the direction of a qualified professional.	**5**
(2) A plan is implemented to conserve the elements identified by the resource inventory as high priority resources.	**6**
(3) Items listed for protection in the resource inventory plan are protected under the direction of a qualified professional.	**4**
(4) Basic training in tree or other natural resource protection is provided for onsite supervisor.	**4**
(5) All tree pruning on site is conducted by a Certified Arborist.	**2**
(6) On going maintenance of vegetation during construction is in accordance with TCIA A300.	**3**
Addition and Renovation Note: This Section applies only to additions that increase building footprint on the lot and to renovations that include landscape, hardscape and outdoor living area.	**1 Additional Point**

503.2 The building and other built features are oriented to optimize the use of solar resource. **Point Modification:** * Points shall not be awarded if points are taken in Sections 704.3.1.1 or 704.3.1.3. **Addition and Renovation Note:** This Section applies only to addition(s) and renovations that alter the existing roof geometry.	**--** **Additions** **1 Additional Point** **Renovations** **2 Additional Points**

503.3 Slope disturbance is minimized by one or more of the following:[1]	
(1) Development on steep slopes is minimized.	**5**
(2) Hydrological/soil stability study for steep slopes is completed and used to guide the design of all buildings onsite.	**5**
(3) Road, parking, or driveway is aligned with natural topography to minimize its grade and reduce cut and fill.	**5**

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GREEN BUILDING PRACTICES	POINTS
(4) Long-term erosion effects are reduced through the design and implementation of terracing, retaining walls, landscaping, and restabilization techniques.	**6**
(5) Underground parking uses the natural slope for parking entrances.	**4**
Points modification: (1) Points shall be awarded only if there are developable steep slopes in the area.	
Addition and Renovation Note: This Section applies to only to additions that increase building footprint on the lot and to renovations that include landscape, hardscape and outdoor living area.	**2 Additional Points**

503.4 Soil disturbance and erosion are minimized by one or more of the following: *(Also see Section 504.3)*	
(1) Construction activities are scheduled to minimize length of time that soils are exposed.	**5**
(2) Utilities are installed using alternative means such as a tunneling instead of trenching, use of smaller (low ground pressure) equipment or geomats to spread the weight of construction equipment, shared utility trenches or easements, and placement of utilities under paved surfaces instead of yards.	**5**
(3) Limits of clearing and grading are demarcated.	**5**

503.5 Storm water is managed using one or more of the following low impact development techniques:	
(1) Natural water and drainage features are preserved and used.	**6**
(2) Storm water management plan is developed and implemented that minimizes concentrated flows and seeks to mimic natural hydrology, e.g., vegetative swales, French drains, wetlands, drywells, and rain gardens.	**6**
(3) Impervious surfaces are minimized and permeable materials are used for driveways, parking areas, walkways, and patios.	**6**
Addition and Renovation Note: This item applies only to additions that increase the building footprint on the lot, and to renovations that include hardscape and outdoor living area. The amount of storm water runoff shall not exceed existing conditions.	**1 Additional Point**

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GREEN BUILDING PRACTICES	POINTS
503.6 Landscape plan is developed to limit water and energy demand while preserving or enhancing the natural environment. Techniques include, but are not limited to, one or more of the following; **(1)** A plan is formulated to restore or enhance natural vegetation that is cleared during construction. Landscaping is phased to coincide with achievement of final grades to ensure denuded areas are quickly vegetated.	**5**
(2) Turf grass species and other vegetation that are native or regionally appropriate are selected.	**4**
(3) Turf areas are limited. Native and regionally appropriate trees and vegetation are selected so as to complement the natural setting.	**4**
(4) Plants with similar watering needs are grouped (hydrozoning).	**5**
(5) Species and locations for tree planting are identified to increase summer shading of the dwelling and parking areas and moderate temperatures.	**5**
(6) Vegetative wind breaks or channels are designed as appropriate to local conditions.	**4**
(7) Onsite tree trimmings or stump grinding of regionally appropriate trees are used to provide protective mulch during construction.	**3**
(8) An integrated pest management plan to minimize chemical use in pesticides and fertilizers is established.	**4**
Addition and Renovation Note: Landscape plan shall address protection and renovation of existing vegetation during and after construction, and preservation or enhancement of the natural environment.	**2 Additional Points**
503.7 Wildlife habitat is maintained. **Addition and Renovation note:** This item applies only to additions that increase building footprint on the lot and to renovations that include landscape, hardscape and outdoor living area. Existing landscape is maintained to preserve a wildlife habitat, or improved to create a new or expanded habitat.	**4** **Maintain WH** **1 Additional Point** **Expand WH** **2 Additional Points**
503.8 Mixed use development is incorporated.	**6**
503.9 Project's average minimum density meets or exceeds 7 dwelling units per acre for single-family homes, and 17 dwelling units per acre for multifamily construction.	**4**

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GREEN BUILDING PRACTICES	POINTS

504
Lot Construction

504.0 Intent. Environmental impact during construction is minimized.

504.1 Onsite supervision and coordination is provided during clearing, grading, trenching, paving, and installation of utilities to ensure that specified green development practices are implemented *(Also see Section 503.4.)*	**4**

504.2 Designated trees and vegetation are preserved by one or more of the following:	
(1) Fencing or equivalent to protect trees and other vegetation is installed.	**3**
(2) Trenching, significant changes in grade, and compaction of soil and critical root zones in "tree save" areas are avoided.	**4**
(3) Damage to designated existing trees and vegetation is mitigated during construction through pruning, root pruning, fertilizing, and watering.	**4**

504.3 Onsite soil disturbance and erosion are minimized by one or more of the following:	
(1) Limits of clearing and grading are demarcated.	**5**
(2) "No disturbance" zones are created using fencing or flagging to protect vegetation and sensitive areas from construction activity.	**5**
(3) Sediment and erosion controls are installed and maintained in accordance with the storm water pollution prevention plan (SWPPP), where required.	**5**
(4) Topsoil is stockpiled and stabilized for later use to establish landscape plantings.	**5**
(5) Soil disturbance from construction equipment is reduced-using methods such as laying lightweight geogrids, mulch, chipped wood or plywood sheets.	**3**
(6) Disturbed areas that are complete or to be left unworked for greater than 21 days are stabilized within 14 days using methods as recommended by the EPA or in the approved storm water pollution prevention plan (SWPPP), where required.	**3**
(7) Soil is improved with organic amendments and mulch.	**3**
Addition and Renovation Note: On-site construction staging and storage areas are planned to avoid soil and vegetation disturbance in areas where no construction occurs.	**2 Additional Points**

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GREEN BUILDING PRACTICES	POINTS

505 Innovative Practices
505.0 Intent. Innovative lot design, preparation and development practices are used to enhance environmental performance. Waivers, variances from local development regulations are obtained and innovative zoning practices are used to implement such practices.

505.1 Driveways or parking is shared. Waivers or variances from local development regulations are obtained to implement such practices as applicable. In a multi-unit project, parking capacity is sized to not exceed local minimum requirements. **Addition and Renovation Note:** This practice applies only to projects that reduce existing impervious driveway and parking area(s).	**4** **2 Additional Points**

505.2 Heat Island Mitigation. Any combination of the following strategies are provided for at least 50 percent of the horizontal surface area of the hardscape: **(1)** Shading of hardscaping: Shade from existing or new vegetation is provided (within five years) or trellises when measured at June 21st at noon. **(2)** Light colored hardscaping: Horizontal hardscaping materials are installed with a solar reflectance index of 29 or greater.	**4**

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CHAPTER 6

RESOURCE EFFICIENCY

GREEN BUILDING PRACTICES	POINTS
601 **Quantity of Construction Materials and Waste**	
601.0 Intent. Design and construction practices that minimize the environmental impact of the building materials are incorporated; environmentally efficient building systems and materials are incorporated; and waste generated during construction is reduced.	
601.1 Floor area of dwelling unit, calculated in accordance with ANSI Z765, is reduced.	
(1) Less than or equal to 2,500 square feet	**3**
(2) Less than or equal to 2,000 square feet	**6**
(3) Less than or equal to 1,500 square feet	**9**
(4) Less than or equal to 1,000 square feet	**12**
Addition Note: Additions with an area of more than 50% of the area of the existing dwelling unit shall be considered new construction. For the application of Section 601.1, where the addition area is more than 50% of the area of the existing home, the total square footage of both the addition and the existing home shall be utilized. Where the addition area is less than 50% of the existing dwelling unit area, points shall be awarded as follows:	
(a) When the existing structure is 51-75% of the total dwelling unit area	**10% Additional Points**
(b) When the existing structure is 76-99% of the total dwelling unit area	**25% Additional Points**
Renovation Note: Renovations which do not increase the total dwelling unit area by more than 1%.	**<2500 sf** **50% Additional Points** **≥2500 sf** **1 Points**
601.2 Building-code-compliant structural systems or advanced framing techniques that optimize material usage are implemented. Points received per implemented system or framing technique	**3** **(max 9)**
601.3 Building dimensions and layouts are designed to minimize material cuts and waste.	
(1) when used for floors	**3**
(2) when used for walls	**3**
(3) when used for roof elements	**3**

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GREEN BUILDING PRACTICES	POINTS
(4) when used for cladding or siding	**3**
(5) when used in penetrations or trim	**1**
601.4 Detailed framing or structural plans, material quantity lists and onsite cut lists for framing, or structural materials, and sheathing materials are provided.	**4**
601.5 Pre-cut or pre-assembled components, or panelized or precast assemblies are utilized:	
(1) Floor system.	**4**
(2) Wall system.	**4**
(3) Roof system.	**4**
(4) Above-grade modular construction for the entire building.	**13**
601.6 Building materials or assemblies that do not require additional site applied material for finishing are utilized. Materials such as the following are used for exterior and/or interior walls, flooring, or other applications:	
(1) Pigmented, stamped, decorative, or final finish concrete or masonry.	
(2) Trim not requiring paint or stain.	
(3) Window, skylight, and door assemblies not requiring paint or stain on exterior and/or interior surfaces.	
(4) Wall coverings or systems not requiring paint or stain or other type of finishing application.	
90% of entire wall or floor area	**7**
50% of entire wall or floor area	**4**
Trim or millwork that complies with this section but is only a portion of the entire wall, floor, or roof area	**4**
601.7 Frost-Protected Shallow Foundation (FPSF) is designed and constructed to reduce excavation and minimize site disturbance.	**3**
601.8 Wall systems, such as but not limited to those below, which incorporate into one material sufficient structural and thermal characteristics are used:	**9**
(1) Adobe	
(2) Concrete/Masonry	

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(3) Logs (solid wood)

(4) Rammed earth

602
Enhanced Durability and Reduced Maintenance

602.0 Intent. Design and construction practices are implemented that enhance the durability of materials and reduce in-service maintenance.

602.1 Entries at exterior door assemblies, inclusive of side lights, are covered by one of the following methods to protect the building from the effects of precipitation and solar radiation. A door assembly cover shall have a projection factor of at least 0.375. Eastern and western facing entries in hot/dry climates, as determined in accordance with Figure 6(1), shall have a projection factor of at least 1.0 unless otherwise protected from direct solar radiation by other means (e.g. screen wall, vegetation).

(1) Installing a porch roof or awning.

(2) Extending the roof overhang.

(3) Recessing the exterior door.

Main entrance door	**3**
Additional covered door assembly	**1**
Maximum number of points	**5**

602.2 Roof overhangs, based on inches rainfall in Table 602.2, are provided over at least 90 percent of exterior walls to protect the building envelope. **4**

Table 602.2
Maximum Roof Overhang for One- & Two-Story Buildings

Inches Rainfall*	Eave Overhang (Inches)	Rake Overhang (Inches)
Less than 20	12	12
21 to 40	12	12
41 to 70	18	12
More than 70	24 or more	12 or more

* Inches Rainfall are in accordance with Figure 6(2).

Addition and Renovation Note: This practice applies to the new construction portion of addition(s) and to renovations that alter the existing roof.

Addition
0 Points
Renovation
1 Additional Point

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GREEN BUILDING PRACTICES	POINTS

602.3 Foundation Drainage

602.3.1 Where required by the IRC/IBC for habitable and usable spaces below grade, exterior drain tile shall be installed.	**Mandatory**
602.3.2 Interior and exterior foundation perimeter drains are installed and sloped to discharge to daylight, dry well, or sump pit. **Addition and Renovation Note:** This practice applies to the new construction portion of additions, and to renovations that involve the demolition/reconfiguration of exterior walls, any modification of the foundation drainage system, or an effort to improve foundation drainage.	**4** **Addition** **0 Points** **Renovation** **2 Additional Points**
602.4 Drip edge is installed at eaves and gable roof edges.	**3**
602.5 Gutter and downspout system is installed to divert water at least 5' away from perimeter foundation walls and further into onsite drainage area or rain gardens. **Addition and Renovation Note:** This practice applies to the new construction portion of additions, and to renovations that include landscape, hardscape, outdoor living areas and exterior or roofing construction.	**4** **1 Additional Point**
602.6 Finish grade at all sides of building is sloped to provide a minimum of 6 inches of fall within 10 feet of foundation walls. Where lot lines, walls, slopes or other physical barriers prohibit 6 inches of fall within 10 feet, the final grade shall slope away from the foundation at a minimum slope of 5 percent and the water shall be directed to drains or swales to ensure drainage away from the structure. **Addition and Renovation Note**: This practice applies to the new construction portion of additions and to renovations that include landscape, hardscape and outdoor living areas, or improve drainage away from the foundation.	**Mandatory** **Addition** **0 Points** **Renovation** **2 Additional Points**
602.7 Continuous, physical, non-chemical foundation termite barrier is installed in geographical areas that have subterranean termite infestation potential determined in accordance with Figure 6(3). **Addition and Renovation Note**: This practice applies to the new construction portion of additions and to renovations that include landscape, hardscape and/or outdoor living areas, replace existing cladding, or disturb the existing foundation soils, where a non-chemical termite barrier is provided to replace a chemical termite barrier with a non-chemical termite barrier.	**4** **Renovation** **1) 1 Additional Point** **2) Focused effort to remove and replace an existing chemical barrier:**

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GREEN BUILDING PRACTICES	POINTS
	3 Additional Points
602.8 Termite-resistant materials are used for the structural components and exterior claddings of walls, floors, roofs and exterior decks in geographical areas that have slight to moderate or greater subterranean termite infestation potential determined in accordance with Figure 6(3). Slight Potential Moderate Potential High Potential	 **3** **4** **7**
602.9 Where required by the IRC/IBC, a water-resistive barrier and/or drainage plane system is installed behind exterior veneer and/or siding. **Addition and Renovation Note**: This practice applies to the new construction portion of additions, and to renovations that include exterior cladding replacement.	**Mandatory** **Addition** **0 Points** **Renovation** **2 Additional Points**
602.10 In areas where there has been a history of ice forming along the eaves causing a backup of water, an ice barrier is installed at roof eaves and is extended at least 24" inside the exterior wall line of the building, in accordance with the IRC/IBC.	**Mandatory**
602.11 An enhanced foundation waterproofing is installed: **(1)** Rubberized coating, or **(2)** Drainage mat. **Addition and Renovation Note**: This practice applies to the new construction portion of additions, and to renovations that involve the demolition/reconfiguration of exterior walls, modification of the foundation wall, or an effort to improve foundation waterproofing.	**4** **Addition** **0 Points** **Renovation** **2 Additional Points**
602.12 Flashing details are shown on plans and flashing is installed at all of the following locations, as applicable: **(1)** Around exterior fenestrations, skylights and doors. **(2)** Roof valleys. **(3)** Deck/balcony building intersections. **(4)** At roof-to-wall intersection and at roof-to-chimney intersections. **(5)** A drip cap is provided above windows and doors that are not self-flashing or protected by covering per Section 602.1.	**6**

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GREEN BUILDING PRACTICES	POINTS
602.13 At least 90% of roof surfaces are constructed of one or both of the following: **(1)** Products with an Energy Star cool roof certification. **(2)** A green (landscaped) roof system.	**3**
Renovation Note: Renovations that include roof replacement.	**1 Additional Point**
602.14 Occupant recycling is facilitated by one or more of the following methods: **(1)** A built-in collection space in each kitchen and an aggregation/pick-up space in a garage, covered outdoor space or other area for recycling containers. **(2)** Compost facility provided on-site.	**3** **3**

603
Reused or Salvaged Materials

603.0 Intent. Practices that reuse or modify existing structures, salvage materials for other uses, or use salvaged materials in building's construction are implemented.	
603.1 Existing buildings and structures are reused, modified or deconstructed in lieu of demolition.	**7**
603.2 Reclaimed and/or salvaged materials and components are used.[(1)] **Points Modification:** (1) Total material and labor cost of salvaged materials shall equal or exceed 1% of total construction costs	**3**
603.3 Sorting and reuse of scrap building materials is facilitated by methods such as: **(1)** Providing a central onsite storage area. **(2)** Providing dedicated bins.	**4**

604
Recycled-Content Building Materials

604.1 Building materials with recycled content are used. **(1)** A minimum of two recycled content products are used for minor elements of the building, such as all trim, cabinetry, plumbing, ductwork, etc.	**1**

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GREEN BUILDING PRACTICES	POINTS
(2) A minimum of two recycled content products are used in major elements of the building, such as insulation, walls, floors, or roof.	**4**

605
Recycled Construction Waste

605.0 Intent. Waste generated during construction is recycled.

605.1 A Construction Waste Management Plan is developed, implemented, and posted at the jobsite with a goal of recycling or salvaging a minimum of 50% (by weight) of construction and land-clearing waste. **Addition and Renovation Note**: This practice applies to additions and renovations. For additions and renovations, the Construction Waste Management Plan shall, where applicable, also address proper handling and disposal of hazardous wastes such as lead, asbestos, treated wood, etc.	**6** **1 Additional Point**
605.2 Onsite recycling measures following applicable regulations and codes are implemented, such as the following: **(1)** Materials are ground or otherwise safely applied onsite as soil amendment or fill. At least 50% (by weight) of construction and land-clearing waste shall be diverted from landfill. **(2)** Other methods approved by the adopting entity. **Addition and Renovation Note**: Hazardous waste shall be properly handled and disposed of and be exempted from this section.	**7**
605.3 Construction materials, such as wood, cardboard, metals, drywall, plastic, asphalt roofing shingles, concrete, or other are recycled offsite. **(1)** A minimum of two types of materials are recycled. **(2)** Per additional recycled material.	**Max 6** **3** **1**

606
Renewable Materials

606.0 Intent. Building materials derived from renewable resources are used.

606.1 The following biobased products are used each for more than 1% of	**Max 8**

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the project's projected material cost: Two types of biobased materials are used each for more than 1% of the projects overall material cost. Per additional biobased material used for more than 1% of the projects overall material cost. **(1)** Certified solid wood in accordance with Section 606.2, engineered wood, bamboo, wool, cotton, or cork.	**6** **1**
(2) Cellulosic materials (wood, straw, natural fibers) and products made from crops (soy-based, corn-based) or other biobased materials with at least 50% biobased content. **(3)** Products with the minimum biobased contents of the USDA's Designation of Biobased Items for Federal Procurement **(4)** Products with the "USDA Certified Biobased Product" label	

606.2 Wood or wood-based products are certified to the requirements of one of the following recognized product programs: Where a minimum of two certified wood-based products are used for minor elements of the building, such as all trim, cabinetry, millwork, etc. Where a minimum of two certified wood-based products are used in major elements of the building, such as walls, floors, or roof. **(1)** American Tree Farm System® **(2)** Canadian Standards Association's Sustainable Forest Management System Standards (CAN/CSA Z809) **(3)** Forest Stewardship Council (FSC) **(4)** Program for Endorsement of Forest Certification Systems (PEFC), and **(5)** Sustainable Forestry Initiative® Program **(6)** Other product programs mutually recognized by PEFC	**3** **4**

607
Resource-Efficient Materials

607.1 Products used contain fewer materials to meet the same end-use requirements as conventional products, including but not limited to: **(1)** Hollow brick. **(2)** Engineered wood or engineered steel products. **(3)** Roof, floor, or wall trusses.	**3 for each material** **Max. 9 Points**

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608
Indigenous Materials

608.1 Locally available, indigenous materials are used. **(1)** 1 type of material. **(2)** Per additional material.	**3 for each material** **Max. 9 Points**

609
Life Cycle Analysis

609.1 The most environmentally preferable product is selected based upon the use of a Life Cycle Assessment (LCA) tool that compares the environmental impact of building materials. Points per product or assembly selected by LCA	**3 for each material** **Max. 15 Points**

610
Innovative Practices

610.1 (Reserved - To be Determined)	

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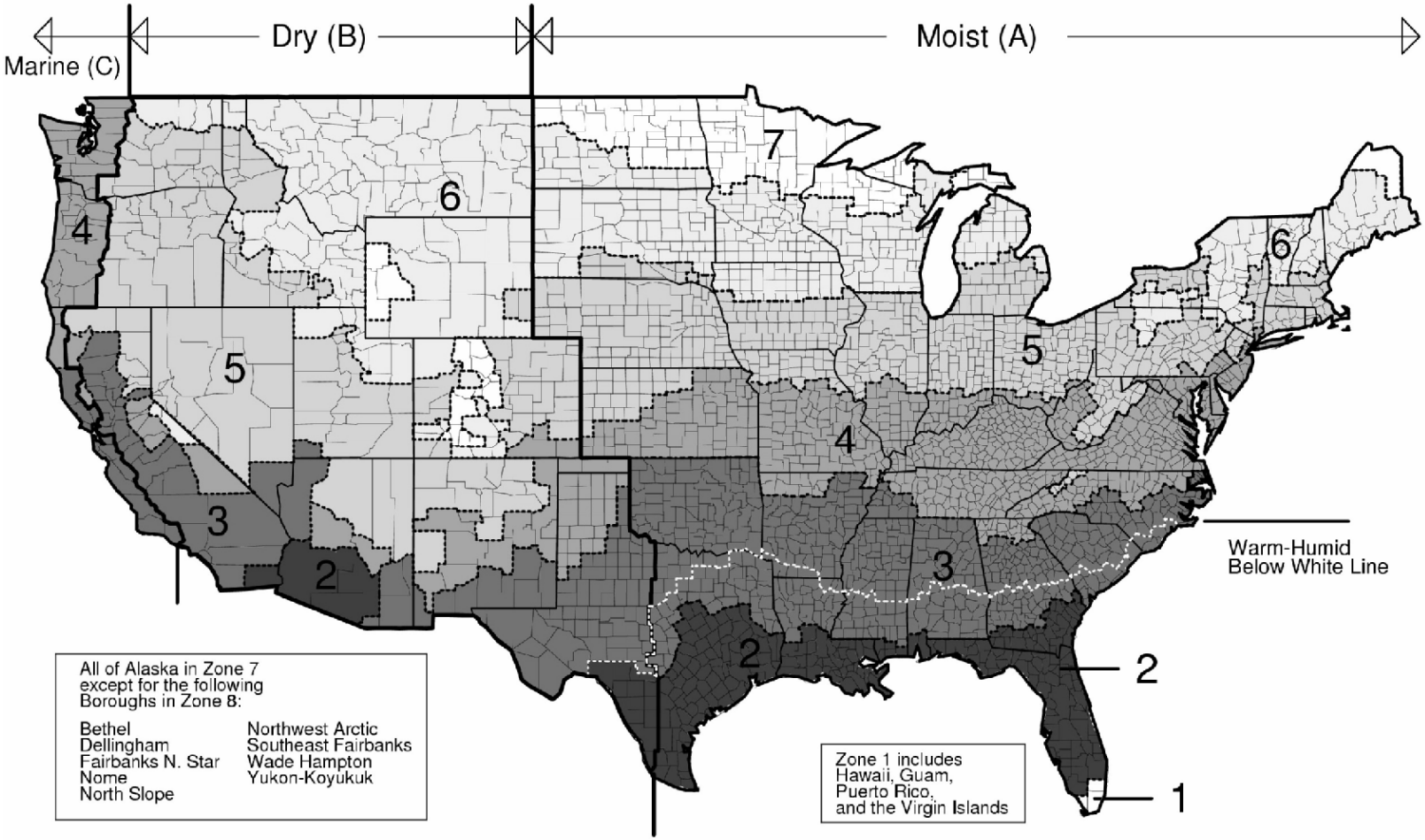

Figure 6(1)
Climate Zones

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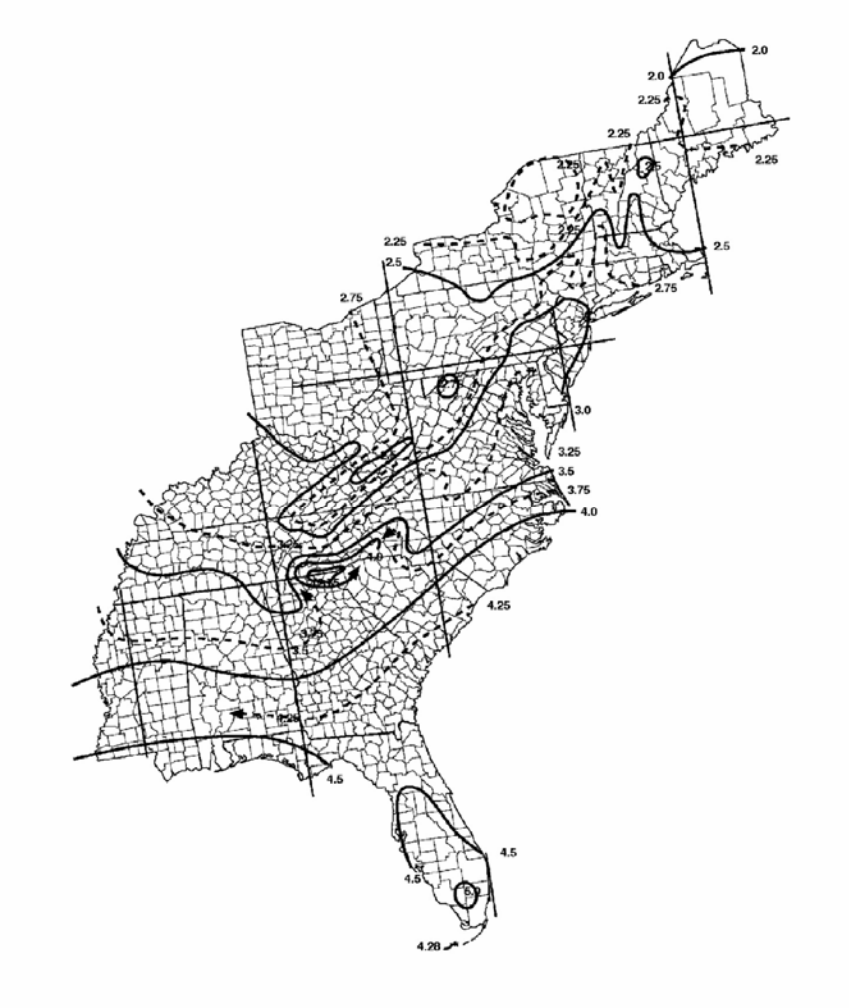

Figure 6(2)
100-year, 1-Hour Rainfall (inches) Easter United States

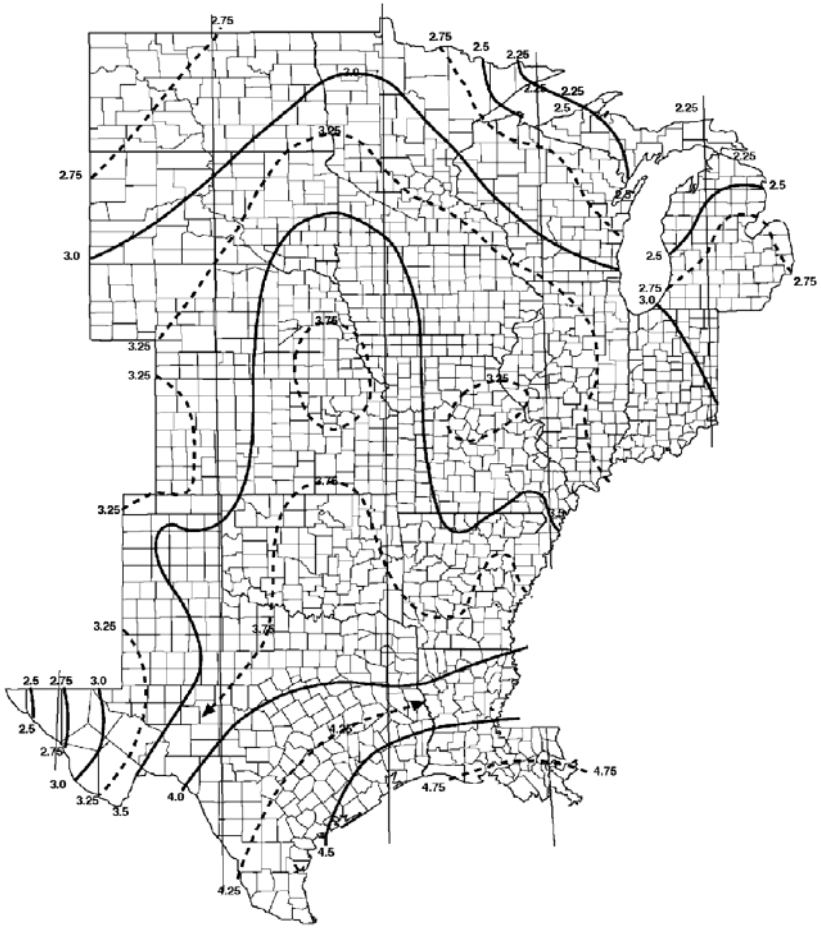

Figure 6(2)—continued
100-year, 1-Hour Rainfall (inches) Central United States

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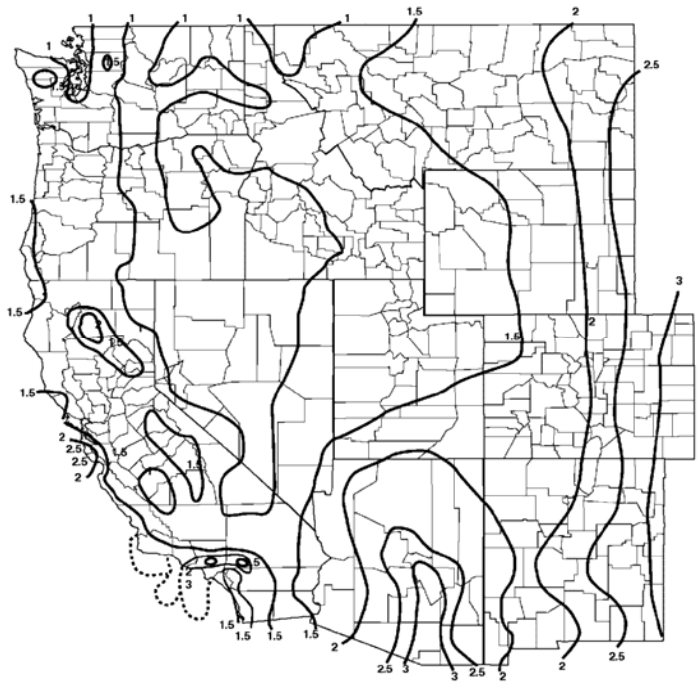

Figure 6(2)—continued
100-year, 1-Hour Rainfall (inches) Western United States

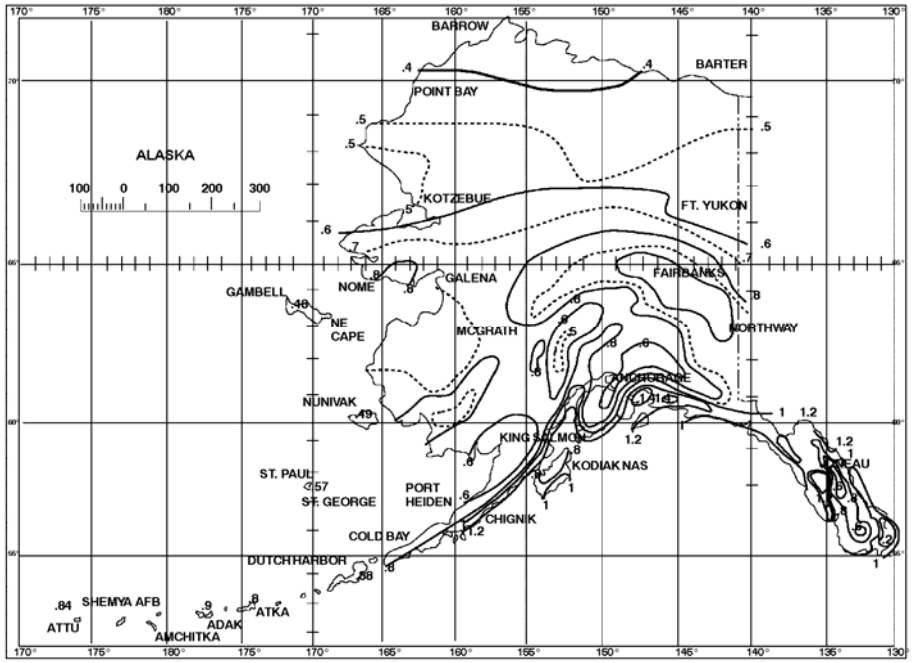

Figure 6(2)—continued
100-year, 1-Hour Rainfall (inches) Alaska

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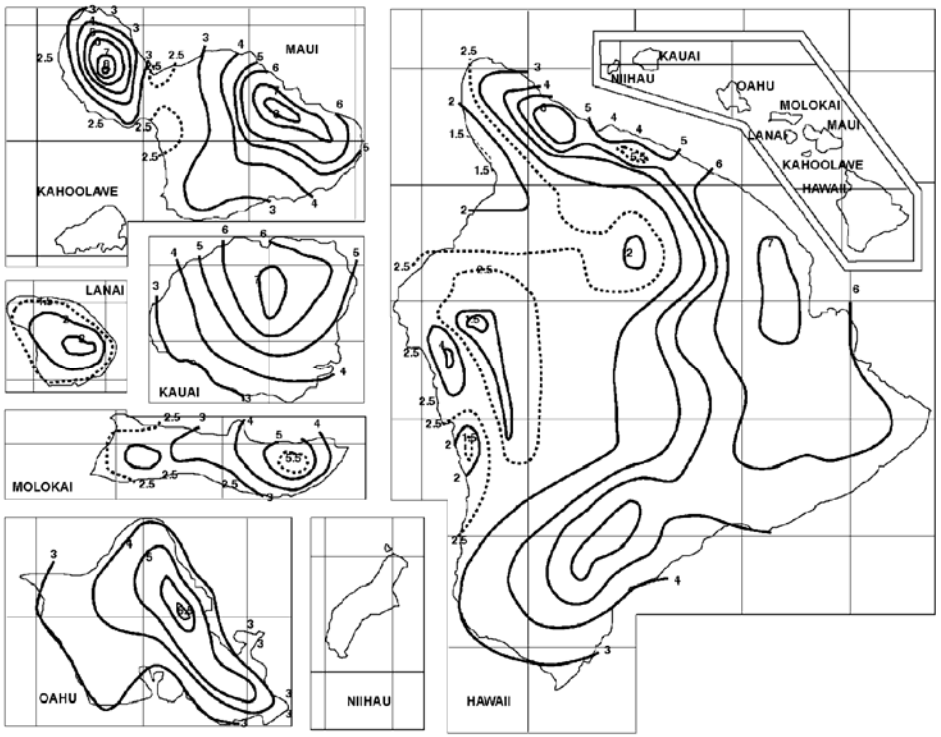

Figure 6(2)—continued
100-year, 1-Hour Rainfall (inches) Hawaii

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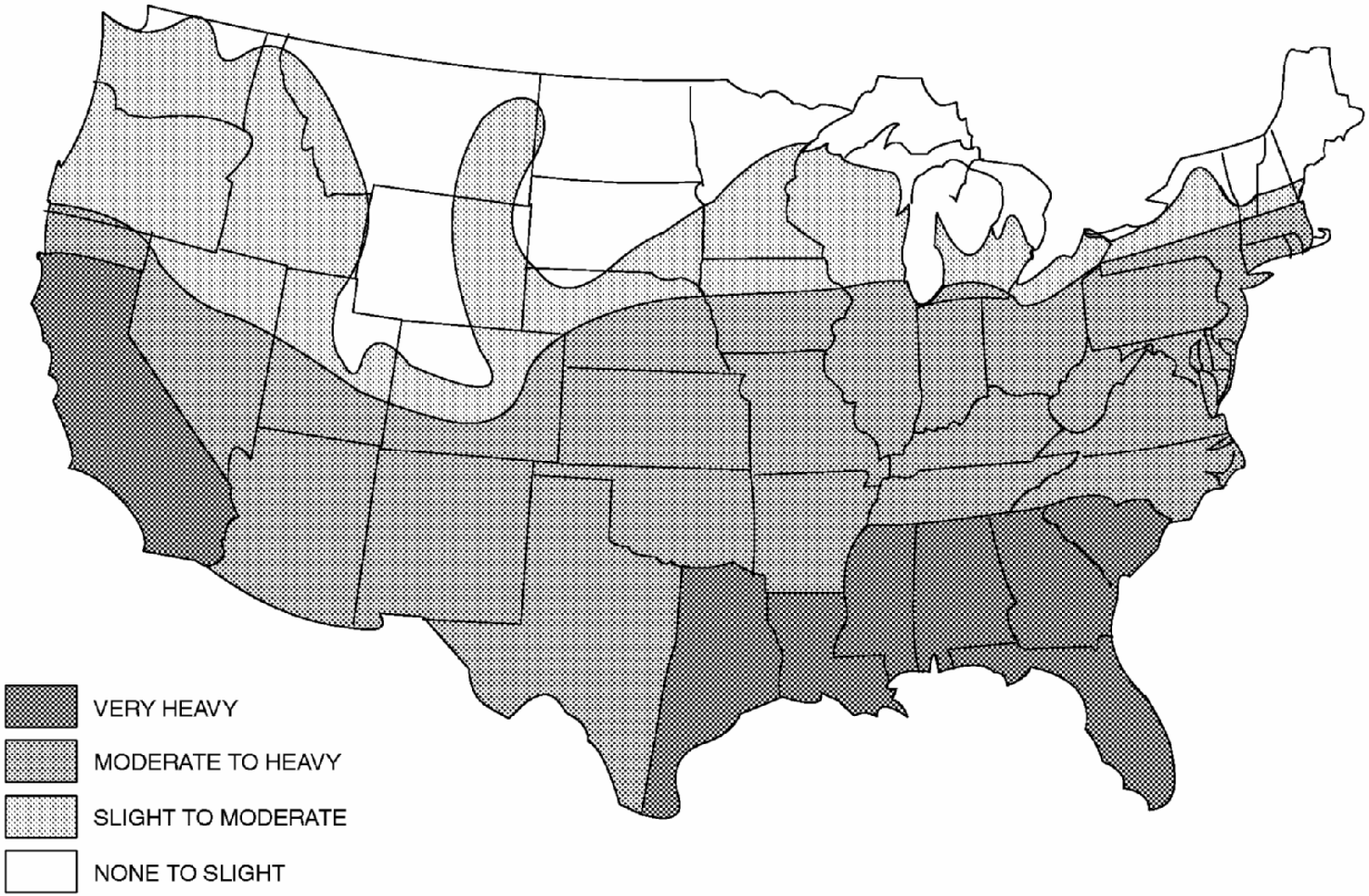

Figure 6(3)
Termite Infestation Probability Map

CHAPTER 7

ENERGY EFFICIENCY

GREEN BUILDING PRACTICES	POINTS

701
Minimum Energy Efficiency Requirements

701.1 Mandatory requirements. The building shall comply with either the Section 702 (Performance Path) or Section 703 (Prescriptive Path). Items listed as "Mandatory" in Section 701.4 apply to both the Performance and Prescriptive Paths.

Addition Note:

Renovation Note:

701.1.1 Minimum Performance Path Requirements. At a minimum, a building complying with the Section 702 shall exceed the IECC by 15%, and shall include a minimum of two practices from Section 704.

701.1.2 Minimum Prescriptive Path Requirements.

A building complying with the Section 703 shall obtain a minimum of 30 points from Section 703, and shall include a minimum of two practices from Section 704.

701.1.3 Alternative Bronze Level Compliance.

As an alternative, any building meeting Energy Star achieves compliance with the Bronze Level.

701.2 Emerald Level Points. The Performance Path shall be used to achieve to the Emerald Level.

701.3 Where required by the adopting entity, a third party review shall be conducted to verify design and compliance with this Chapter.

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GREEN BUILDING PRACTICES	POINTS

701.4 Mandatory Practices

HVAC SYSTEM

701.4.1 Space heating and cooling system/equipment shall be sized according to heating and cooling loads calculated using ACCA 556 (Manual J) or equivalent. **Addition and Renovation Note:** This item applies to additions or renovations that change one or both of the following: the heating and cooling loads or replacement/addition of mechanical equipment.	**Mandatory** **2 Additional Points**

701.4.2 Where installed, radiant or hydronic space heating system is designed using industry-approved guidelines such as one of the following: **(1)** GAMA H-22. **(2)** Accredited design professionals and manufacturer's recommendations	**Mandatory**

DUCT SYSTEM

701.4.3 Duct system is sized, designed, and installed according to ACCA 29-D (Manual D) or equivalent. **Addition Note:** This item applies only to the new construction portion of additions. **Renovation Note:** Where the duct system in the existing building is readily accessible, the duct system is sized, designed, and installed in accordance with ACCA 29-D (Manual D) or equivalent. A minimum of 75% of the duct runs a minimum of 75% of the supply/return grilles meet ACCA Manual D sizing/installation standards to receive these points.	**Mandatory** **0 Points** **3 Additional Points**

701.4.4 Ducts are sealed with UL 181 tape, mastic, gaskets, or an approved system as required by the IRC (Section M1601.3.1) or IMC (Section 603.9) to reduce leakage. **Addition and Renovation Note:** In renovations of existing buildings, the entire duct system, both existing and new, are sealed with mastic or an aerosol spray applied duct sealant. If the existing duct system meets or exceeds new construction requirements, this item applies to the renovation.	**Mandatory**

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GREEN BUILDING PRACTICES	POINTS
Green Remodel: If the existing duct system performance is below the requirements of this item, reduce overall duct system leakage by: **(1)** 25%; **(2)** 50%; **(3)** 75%; **(4)** 100%; **(5)** Upgraded to new construction specifications	 **1 Additional Point** **2 Additional Points** **3 Additional Points** **4 Additional Points** **5 Additional Points**
701.4.5 Building cavities are not used as supply ducts. **Addition Note:** This item applies to the new construction portion of additions. **Renovation Note:** Applies to the renovations that involve the demoiliton/reconfiguration/addition of interior walls or a modification in the duct system of the home or a focused effort to solve the use of building cavities as supply ducts.	**Mandatory** **0 Points** **1 Additional Point** **Focused Effort** **2 Additional Points**

INSULATION and AIR SEALING

701.4.6 Insulation and air sealing is in accordance with the following. Insulation shall be installed in accordance with the manufacturer's instructions or local code, as applicable.	**Mandatory**
701.4.6.1 SHAFTS (Duct Shaft, Piping Shaft/Penetrations, Flue Shaft). Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam. Where required, fire-rated collars and caulking are installed. **Renovation Note:** Seal existing openings to unconditioned space.	**Mandatory** **2 Additional Points**

701.4.6.2 FLOOR / FOUNDATION / CRAWLSPACE

701.4.6.2.1 Floors (Includes Insulated Floor Above Garage, Cantilevered Floor) are in accordance with the following: **(a)** Insulation is installed to maintain permanent contact with the underside of the subfloor decking. **(b)** Batt and blown insulation is held in place by mechanical attachment. **Renovation Note:** Insulate existing uninsulated floors.	**Mandatory** **2 Additional Points**

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GREEN BUILDING PRACTICES	POINTS
701.4.6.2.2 Crawlspace Walls. Where insulated, crawlspace wall insulation is permanently attached to the walls. Exposed earth in unvented crawlspaces is covered with continuous vapor retarder with overlapping joints taped.	**Mandatory**
Renovation Note: Insulate existing uninsulated crawl space.	**2 Additional Points**
Renovation Note: Cover exposed earth in existing crawl space.	**2 Additional Points**
701.4.6.3 WALLS	
701.4.6.3.1 Windows and Doors. Caulk/foam and insulation is installed between window/door jambs and framing.	**Mandatory**
Renovation Note: Weatherstip and seal existing windows and doors.	**1 Additional Point**
701.4.6.3.2 Band Joist / Rim Joists. Band/rim joists are insulated and includes an air barrier.	**Mandatory**
Renovation Note: Insulate uninsulated existing rim and/or band joist.	**1 Additional Point**
701.4.6.3.3 Between Foundation and Sill Plate Bottom Plate: **(a)** Sill sealer, or other material that will expand and contract, is installed between foundation and sill plate. **(b)** Caulk or the equivalent is installed to seal the bottom plate of exterior walls.	**Mandatory**
Renovation Note: Seal existing perimeter seal plates.	**1 Additional Point**
701.4.6.3.4 Skylights and Knee Walls. Skylight shafts and knee walls is insulated to the same level as the exterior walls.	**Mandatory**
Renovation Note: Insulate existing skylight shafts and knee walls.	**1 Additional Point**
701.4.6.3.5 Exterior Architectural Features, Code required building envelope insulation and air sealing for exterior architectural features such as stairs and decks is not disrupted.	**Mandatory**
701.4.6.4 CEILING / ATTIC	
701.4.6.4.1 Attic Access (except Unvented Attic). Attic access, knee wall door, or drop down stair is covered with insulation.	**Mandatory**
Renovation Note: Insulate existing attic access, knee wall door, or drop down stair	**1 Additional Point**

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GREEN BUILDING PRACTICES	POINTS
701.4.6.4.2 Recessed Lighting. Recessed light fixture is airtight, IC rated, and sealed to drywall with gasket, caulk, or foam. **Renovation Note:** Replace existing recessed lights with airtight IC-rated recessed light fixtures are sealed to drywall with gasket, caulk, or foam.	**Mandatory** **1 Additional Point Each**
701.4.6.4.3 Eave Vents. Code required eave ventilation is installed to prevent air movement into or under the insulation. **Renovation Note:** Provide blocking or baffle at eaves to ensure ventilation over attic insulation	**Mandatory** **2 Additional Points**

702
Performance Path

702.1 Points from Section 702 (Performance Path) shall not be combined with points from Section 703 (Prescriptive Path).	**Mandatory**
702.2 Energy efficiency features are implemented to achieve energy performance that exceeds IECC by: **Documentation Required:** Results of analysis using software in accordance with IECC Section 404. **(1)** 15% **(2)** 35% **(3)** 50% **(4)** 60% **Renovation Note:** A baseline energy use measurement is calculated for the existing building. Based on the reduction in whole building energy use, Points are given for every incremental 15% increase in efficiency as shown for Section 702.2.	 **30** **70** **100** **120**

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703
Prescriptive Path

703.1 Building Envelope

703.1.1 Total building thermal envelope UA is less than required by Section 402.1.4 of the IECC by the percentage specified in Table 703.1.1. When insulation is used to achieve these percentages, grading by a third party in accordance with RESNET - Insulation Inspection Procedures as Grade 1 insulation is required.

Documentation Required: Analysis provided by RESCheck or equivalent based on a comparison to the IECC/IRC.

Table 703.1.1
Total Building Thermal Envelope UA

	Climate Zone		
	Zone 2	**Zone 3**	**Zone 4 - 8**
10% UA improvement	10 points	12 points	15 points
20% UA improvement	20 points	24 points	30 points

Points per Table 703.1.1

703.1.2 Insulation Installation. Installation is installed in accordance with the following:

(a) Grades apply to cavity fill insulation, continuous rigid insulation, and any other field-installed insulation products. Grading applies to ceilings, walls, rim joists, conditioned basements and crawlspaces, except as specifically noted. Inspection is conducted before insulation is covered.

(b) Insulation is installed according to manufacturer's instructions and/or industry standards.

(c) Wall insulation is enclosed on all six sides, and is in substantial contact with the sheathing material on at least one side (interior or exterior) of the cavity.

703.1.2.1 "Grade 1"

(a) Insulation uniformly fills each cavity side-to-side and top-to-bottom, without substantial gaps or voids around obstructions (such as blocking or bridging).

(b) Compression or incomplete fill amounts to no more than 2%, presuming the compression or fill is at least 70% of the intended fill thickness; occasional small gaps are acceptable.

(c) Exterior rigid insulation is in firm contact with the structural sheathing materials, and tightly fitted at joints.

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(d) Cavity insulation is split, installed, and/or fitted tightly around wiring and other services.

(e) Exterior sheathing is not visible from the interior through gaps in the cavity insulation.

(f) Faced batt insulation is permitted to have side-stapled tabs, provided the tabs are stapled neatly with no buckling, and provided the batt is only compressed at the edges of each cavity, to the depth of the tab itself.

(g) Sprayed or blown-in products density is sufficient that the fill material springs back when compressed slightly with a hand or finger.

703.1.2.2 "Grade 2"

(a) Installation with moderate to frequent installation defects: gaps around wiring, electrical outlets, plumbing and other intrusions; rounded edges or "shoulders".

(b) No more than 2% of surface area of insulation missing.
Compression or incomplete fill amounts to no more than 10%, presuming the compression or fill is at least 70% of the intended fill thickness.

(c) Conditioned Basement or Crawlspace
Insulation is installed in complete contact with the subfloor surfaces.
Floor insulation over vented or ambient conditions is enclosed on six sides
(d) Floor insulation over unconditioned basements is not required to be enclosed on six sides.

(e) Ceiling insulation need not be enclosed.
Insulation is installed in complete contact with the drywall or plywood surfaces it is intended to insulate.

(f) Eave baffles or equivalent construction is required to prevent wind washing.

Addition Note: This Section applies to the new construction portion of additions.

Renovation Note: Evaluate the existing whole building thermal envelope UA. Choose one of the following based on the evaluation.

(A) If the overall thermal performance meets or exceeds the requirements of section 402.1.4 of the IECC, this item applies to the renovation.

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GREEN BUILDING PRACTICES	POINTS
(B) If the overall thermal performance is below the requirements of section 402.1.4 of the IECC, improve the overall thermal performance of the whole building thermal envelope UA by: **(1)** 25%; **(2)** 50%; **(3)** 75%; **(4)** 100%;	**1 Additional Point** **2 Additional Points** **3 Additional Points** **4 Additional Points**
(5) >100% or meets requirements of Section 402.1.4 of the IECC.	**5 Additional Points**

703.1.2 Insulation is graded by a third party in accordance with the RESNET Insulation Inspection Procedures:

Table 703.1.2
Insulation Installation Grades

Grade	1	2	3
	15 points	10 points	0 points

Points per Table 703.1.2

703.1.3 More than 75% of the above-grade exterior walls of the house are mass walls.

Table 703.1.3
Exterior Mass Walls

	Mass Construction	
	≥3 in. to <6 in.	≥6 in.
Climate Zones 1, 2, 3, 4 except marine, and 5 dry.	**4**	**6**
Climate Zones 4 marine, 5 except dry, and 6.	**3**	**5**
Climate Zones 7 and 8	**0**	**0**

Points per Table 703.1.3

703.2 Insulation & Air Sealing

703.2.1 Insulation and air sealing is installed in accordance with all of the following, as applicable:

8 Points - 3rd Party Verification

3 Points - No 3rd Party Verification

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GREEN BUILDING PRACTICES	POINTS

703.2.1.1 GENERAL
 	
Air Barrier and Thermal Barrier
• Thermal insulation is installed in substantial contact with interior and exterior air barrier to provide continuous alignment of the insulation with the air barrier.
  o An air barrier material, such as a house wrap, separated from the insulation by sheathing, such as continuous plywood or OSB, is considered to be in substantial contact with the insulation.
  o ICFs and SIPS are deemed to provide their own air barrier, except at interfaces with other materials or assemblies, or penetrations.
  o To qualify as its own air barrier, spray foam is: 1) continuously attached to the top, bottom and both sides of the cavity; 2) continuous in the cavity without any unrepaired breaks; and 3) air impermeable.
  o Any spray or hard foam insulation with an air permeance no more than 0.02 L/s-m2 at 75 Pa qualifies as an air barrier.
• Voids or areas of incomplete fill (less than 30% of full thickness) is not more than 2% of the insulated area.
• Insulation is in substantial contact with sheathing materials on at least one side.
• Any exterior rigid insulation is tightly fitted or interlocking at the joints.
Plumbing and Wiring
• At a minimum, insulation is placed between the outside (ceiling, wall, or floor) and the pipes.
• Batts: Insulation is split or cut to fit around wiring and plumbing.
• Sprayed: Wiring is fastened in place to prevent displacement. Insulation is sprayed to encapsulate pipes where the pipe temperature is less than 180 ° F.
Narrow Cavities
• Narrow cavities are filled.
• Batts are cut to fit.
HVAC register boots
• HVAC register boots that penetrate the building envelope is caulked or sealed to the subfloor or drywall.
Fireplace
• When a masonry fireplace is installed, it is required to have gasketed doors, outside combustion air, and a chimney top damper.	

703.2.1.2 FLOOR / FOUNDATION / CRAWLSPACE Floors (Includes Insulated Floor Above Garage, Cantilevered Floor) • Air barrier is installed at any exposed edge of insulation	

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GREEN BUILDING PRACTICES	POINTS
703.2.1.3 WALLS Shower / Tub at Exterior Wall • Exterior walls behind the tub/shower are insulated • Exterior walls behind the tub/shower includes an interior and exterior air barrier. Electrical Boxes • Air sealed type boxes are installed or the air barrier extends completely behind the boxes. • Insulation is placed between the sheathing and the rear of electrical or phone boxes located on exterior walls. • Electrical boxes are covered prior to spraying insulation. Common Walls Between Dwelling Units • Air barrier is installed to seal the gap between a gypsum shaft wall (i.e., common wall) and the structural framing between units in duplex and townhouse construction Skylights and Knee Walls • Skylight shafts and knee walls are air sealed. • Insulation on attic knee walls and skylight shafts are physically supported by stapling in place, netting or using other mechanical attachment. Fireplace Wall • Air barrier is aligned with insulation. Any gaps are sealed with caulk or foam. **703.2.1.4** CEILING / ATTIC Dropped Ceiling / Soffit • Air barrier is substantially aligned with insulation and any gaps are sealed with caulk, foam, or tape. Attic Access (except Unvented Attic) • Attic access, knee wall door, or drop down stair is caulked, gasketed, or otherwise sealed. Whole-House Fan Penetration • An insulated cover is gasketed or sealed to the attic opening.	

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GREEN BUILDING PRACTICES	POINTS
Addition Note: This item applies to the new construction portion of additions. **Renovation Note**: Evaluate the air infiltration of the existing whole building envelope. Choose one of the following based on the evaluation. **(A)** Where the overall air infiltration rate equal to or less than the requirements for new construction, this item applies to the renovation. **(B)** Where the overall air infiltration rate is greater than the requirements for new construction, reduce the air infiltration of the whole building envelope by: **(1)** 25%; **(2)** 50%; **(3)** 75%; **(4)** 100%; **(5)** >100% or meets requirements new construction.	**1 Additional Point** **1 Additional Point** **2 Additional Points** **3 Additional Points** **4 Additional Points** **5 Additional Points**

703.3 FENESTRATION

703.3.1 U-factor and SHGC for a minimum of 80% of the total area of the windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Energy Star or Table 703.3.1.	**Mandatory**

Table 703.3.1
Fenestration Specifications

Climate Zones	U-Factor	SHGC
	Windows and Exterior Doors (maximum certified ratings)	
1 and 2	0.65	0.40
3	0.40	0.40
4 to 8	0.35	Any
	Skylights and TDDs (maximum certified ratings)	
1 to 3	0.75	0.40
4 to 8	0.60	Any

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GREEN BUILDING PRACTICES	POINTS
703.3.2 U-factor and SHGC for a minimum of 80% of the total area of the windows, exterior doors, skylights, and tubular daylighting devices (TDDs) are in accordance with Table 703.3.2(a) or (b).	

Enhanced Fenestration Specifications
Table 703.3.2(a)

Climate Zones	U-Factor	SHGC
	Windows and Exterior Doors (maximum certified ratings)	
1 and 2	0.45	0.30
3	0.35	0.30
4 to 8	0.30	Any
	Skylights and TDDs (maximum certified ratings)	
1 to 3	0.55	0.35
4 to 8	0.55	Any

8 in Zones 1-3
4 in Zones 4-8

Enhanced Fenestration Specifications
Table 703.3.2(b)

10 in Zones 1-3
8 in Zones 4-8

Addition Note: This item applies to the new construction portion of additions. Points are available on the basis of a ratio of [new windows/total windows].

Renovation Note: This item applies to the replacement of existing windows that meet the standard. Points are available on the basis of a ratio of [new windows/total windows].

2 Additional Points

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GREEN BUILDING PRACTICES	POINTS

703.4 HVAC Equipment Efficiency

703.4.1 Combination Space Heating and Water Heating System ("Combo" System) is installed using a coil from the water heater connected to an air handler to provide heat for the dwelling unit.

703.4.2 Furnace efficiency is in accordance with one of the following:

(1) Gas / Propane Heater:

Table 703.4.2(1) - Gas / Propane Heater

	Climate Zone					
	1	2	3	4	5	6-8
	POINTS					
≥ 90% AFUE	0	0	5	8	11	14
≥ 92% AFUE	0	0	6	9	12	15
≥ 94% AFUE	0	0	7	10	14	17

Points per Table 703.4.2(1)

(2) Oil Furnace:

Table 703.4.2(2) - Oil Furnace

	Climate Zone					
	1	2	3	4	5	6-8
≥ 83% AFUE	0	0	3	3	7	7

Points per Table 703.4.2(2)

(3) Gas or Oil Boiler:

Table 703.4.2(3) - Oil Furnace

	Climate Zone					
	1	2	3	4	5	6-8
≥ 85% AFUE	0	0	4	6	10	12
≥ 90% AFUE	0	0	7	8	16	20
≥ 94% AFUE	0	0	10	11	22	25

Points per Table 703.4.2(3)

703.4.3 Heat pump efficiency is in accordance with one of the following. Heat pump refrigerant levels are required to be tested.

Table 703.4.3 - Heat Pumps

	Climate Zone					
	1	2	3	4	5	6-8
≥ 14 SEER / 8.2 HSPF (11.5 EER)	7	7	4	7	8	8
≥ 15 SEER / 9.0 HSPF (12.5 EER)	11	11	9	13	18	18

Points per Table 703.4.3

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GREEN BUILDING PRACTICES	POINTS

703.4.4 Air Conditioner efficiency is in accordance with one of the following. Air conditioner refrigerant charge is verified to be in compliance with manufacturer's instructions.

Table 703.4.4 - Air Conditioners

	Climate Zone					
	1	**2**	**3**	**4**	**5**	**6-8**
≥ 14 SEER	**8**	**6**	**2**	**2**	**1**	**1**
≥ 15 SEER	**12**	**10**	**4**	**3**	**2**	**2**
≥ 17 SEER	**18**	**14**	**6**	**4**	**3**	**3**
≥ 19+ SEER	**24**	**18**	**8**	**4**	**3**	**3**

Points per Table 703.4.4

703.4.5 Ground source heat pump is installed by a Certified Geothermal Service Contractor in accordance with one of the following Energy Star levels:		
(1) Open Loop	≥ 16.2 EER ≥ 3.6 COP	**25**
(2) Closed Loop	≥ 14.1 EER ≥ 3.3 COP	**25**
(3) Direct Expansion	≥ 15.0 EER ≥ 3.5 COP	**25**
(4) Any Type (Open, Closed, Direct Expansion)	≥ 24 EER ≥ 4.3 COP	**35**

703.4.6 ENERGY STAR ceiling fans are installed.	**1 per Building**
703.4.7 Whole-house fan with insulated louvers and a sealed enclosure is installed.	**2 per Building**
703.4.8 An Energy Management Control System is installed.	**1**

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703.5 Water Heating Design, Equipment, and Installation

703.5.1 Water heater Energy Factor (EF) is equal to or greater than the following:

(1) Gas Water Heating

Table 703.5.1(1) - Gas Water Heating

Size (gallons)	Energy Factor	POINTS
30 to < 40	0.64	**1**
40 to < 50	0.62	**1**
50 to < 65	0.60	**1**
65 to < 75	0.58	**1**
≥75	0.56	**1**
Tankless	0.80	**10**

Points per Table 703.5.1(1)

(2) Electric Water Heating

Table 703.5.1(2) – Electric Water Heating

Size (gallons)	Energy Factor	POINTS

Points per Table 703.5.1(2)

(3) Oil Water Heating

Table 703.5.1(3) – Oil Water Heating

Size (gallons)	Energy Factor	POINTS
30 to < 50	0.59	**1**
≥50	0.55	**1**

Points per Table 703.5.1(3)

(4) Heat Pump Water Heating

Table 703.5.1(4) – Heat Pump Water Heating

	Energy Factor	POINTS
Heat Pump	Any	**7**
Heat Pump	2.0	**10**

Points per Table 703.5.1(4)

703.5.2 Desuperheater, in conjunction with ground source heat pump, is installed by a qualified installer or is pre-installed in the factory. — **5**

703.5.3 Drain water heat-recovery system is installed in multi-family units. — **2 per Building**

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703.5.4 Hot water lines are insulated with a minimum of R-4 insulation. **Addition Note:** This item applies to new or modified plumbing associated with the addition. **Renovation Note:** Where hot water lines in the existing home are accessible, the hot water lines shall be insulated to meet the new construction standard. At least 50% of the hot water lines must be insulated to receive points.	**1** **1 Additional Point**

703.5.5 Indirect fired water storage tanks heated from boiler systems are installed.	**1**

704
Additional Practices

704.1 Points from Section 704 can be added to points earned in Section 702 (Performance Path) or Section 703 (Prescriptive Path).	

704.2 Lighting and Appliances

704.2.1 Hard-wired lighting meets one of the following:	
(1) 50% of the total hard-wired lighting fixtures, or the lights in those fixtures, qualify as ENERGY STAR. **(2)** 50% of the total hard-wired lighting fixtures qualify as ENERGY STAR. **Addition Note:** This item applies to the new construction portion of additions. **Renovation Note:** Replace X% of the total lighting fixtures, or the lights in those fixtures, with fixtures or lights that qualify as ENERGY STAR. **(a)** 50% X points **(b)** 75% X points **(c)** 100% X points	**2** **5**

704.2.2 Where penetrating the thermal envelope, recessed lights are rated for insulation contact (IC) and airtightness. **Addition Note:** This item applies to the new construction portion of additions. **Renovation Note:** Renovation Note: Where room for installation within the conditioned envelope is available, this item applies. At least 50% of the total recessed ceiling lights must meet the standard to receive points. **Required for Renovations:** All recessed lights not installed within the conditioned space shall be insulation contact (IC) and airtight rated when they penetrate the thermal envelope. At least 50% of the total recessed ceiling lights must meet the standard to receive points. .	**Mandatory** **1 Additional Point** **Mandatory**

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GREEN BUILDING PRACTICES	POINTS
704.2.3 Motion sensors, daylight sensors, and/or timers are installed on more than 50% of the outdoor lighting wattage.	**1**
704.2.4 Tubular, or sealed, insulated, low-E glass skylights are installed in rooms without windows.	**2 per Building**
704.2.5 ENERGY STAR or equivalent appliance(s) are installed: **(1)** Refrigerator **(2)** Dishwasher **(3)** Washing machine **Addition and Renovation Note:** When in accordance with the following: **(1)** Replace existing refrigerator **(2)** Replace existing dishwasher **(3)** Replace existing washing machine	 **2** **1** **3** **2 Additional Points** **1 Additional Point** **1 Additional Point**
704.2.6 Occupancy sensors are installed for a minimum of 80 percent of hardwired lighting outlets.	**1**

704.3 Renewable Energy/Solar Heating and Cooling

704.3.1 Solar space heating and cooling. **704.3.1.1 Sun-tempered Design:** Building orientation, sizing of glazing, and design of overhangs are in accordance with all of the following: **(1)** Long side (or one side if of equal length) of the building faces within 20º of true south; **(2)** Vertical glazing area is between 5% and 7% of gross Conditioned Floor Area on the south face (see note 8, below); **(3)** Vertical glazing area is less than 2% of gross Conditioned Floor Area on the west face, and glazing is Energy Star compliant. **(4)** Vertical glazing area is less than 4% of gross Conditioned Floor Area on the east face and glazing is Energy Star compliant. **(5)** Vertical glazing area is less than 8% of gross Conditioned Floor Area on the north face, and glazing is Energy Star compliant. **(6)** Where installed, skylights meet the following characteristics: **(a)** Shades and insulated wells are used and all glazing meets Energy Star specifications; **(b)** Horizontal skylights are less than 0.5 % of Finished Ceiling Area **(c)** Sloped skylights on slopes facing within 45º of true South, East or West are less than 1.5% of Finished Ceiling area	**3**

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GREEN BUILDING PRACTICES	POINTS

(7) Overhangs or adjustable canopies or awnings or trellises provide shading on south facing glass for the appropriate climate zone are in accordance with Table 704.3.1.1:

Table 704.3.1.1
Southern Window Overhang Depth

		Vertical distance between bottom of overhang and top of window sill				
		≤ 7' 4"	≤ 6' 4"	≤ 5' 4"	≤ 4' 4"	≤ 3' 4"
Climat Zone	1 & 2 & 3	2'-8"	2'-8"	2'-4"	2'-0"	2'-0"
	4 & 5 & 6	2'-4"	2'-4"	2'-0"	2'-0"	1'-8"
	7 & 8	2'-0"	1'-8"	1'-8'	1'-4'	1'-0"

(8) The south face windows have a SHGC of 0.45 or higher (Exception to Section 703.3.1)

(9) Return air or transfer grilles/ducts are in accordance with Section 703.4.3.

Addition Note: This item applies to the new construction portion of additions. Points are available on the basis of a ratio of new building area/total building area. — **0 Points**

Renovation Note: Applies to existing construction. — **1 Additional Point**

704.3.1.2 Automated solar protection provides shading for windows. — **1**

704.3.1.3 Passive cooling design features are in accordance with two or more of the following: — **3**

(1) Exterior shading is provided on east and west windows using one or a combination of the following strategies:
(a) Vine covered trellises (vegetation is separated a minimum of 1'-0" from face of building)
(b) Moveable awnings or louvers
(c) Covered porches
(d) Attached or detached conditioned/unconditioned enclosed space that provides full shade of east and west windows (e.g., detached garage, shed or building)

(2) Overhangs in accordance with Section 704.3.1.1(7) are designed to provide shading on south-facing glazing.*
(* Points shall not be awarded if points are taken under Section 704.3.1.1.)

(3) Windows and/or venting skylights are located to facilitate cross ventilation.

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GREEN BUILDING PRACTICES	POINTS
(4) Solar reflective roof or radiant barrier is installed in Climate Zones 1, 2 or 3. Roof material meet a 3 year aged criteria of 0.50. **(5)** Internal exposed thermal mass is a minimum of three inches in thickness. Thermal mass consists of concrete, brick, tile that are fully adhered to a masonry base or other masonry material and is in accordance with one or a combination of the following: **(a)** One square foot of exposed thermal mass in floor per three square feet of gross finished floor area **(b)** Three square feet of exposed thermal mass in interior walls or elements per square foot of gross finished floor area. **(6)** Roofing material is installed with a minimum ¾" continuous air space offset from the roof deck from eave to ridge. **Addition Note:** This item applies to the new construction portion of additions. Points are available on the basis of a ratio of [new building area/total building area].	**0 Points**
Renovation Note: This item applies to existing construction. Only one feature is required (instead of 2 required for new construction).	**1 Additional Point**

704.3.2 Solar water heating

704.3.2.1 Solar water heater. SRCC (Solar Rating & Certification Corporation) rated solar domestic water heating system is installed. Solar Fraction (as defined by SRCC):	
(1) 0.3 to 0.4	**8**
(2) 0.41 to 0.5	**11**
(3) 0.51 to 0.6	**14**
(4) 0.61 to 0.7	**17**
Addition and Renovation Note:	**1 Additional Point**

704.3.3 Additional renewable energy options

704.3.3.1 Photovoltaic panels are installed on the property. Points awarded per kWh installed.	**10 per kW**

704.3.3.2 Other onsite renewable energy source such as wind energy or onsite hydro power. Points awarded per kWh installed.	**5 per kW**

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GREEN BUILDING PRACTICES	POINTS

704.4 Ducts

704.4.1 Space heating and cooling is provided by a system that does not include air ducts.	**15**

704.4.2 Ductwork is in accordance with all of the following: **(1)** Building cavities are not used as return ductwork. **(2)** Heating and cooling ducts and mechanical equipment are installed within the conditioned building envelope. **(3)** Ductwork is not installed in exterior walls or exterior to the thermal envelope.	**12**
Addition Note: This item applies to the new construction portion of additions.	**0 Points**
Renovation Note: This item applies to renovations that involve the demolition/reconfiguration/addition of interior walls or a modification in the duct system of the home or an intentional effort to solve the problems indicated.	**2 Additional Points**

704.4.3 Return ducts or transfer grilles are installed in every room with a door except baths, kitchens, closets, pantries, and laundry rooms.	**5**
Addition Note: This item applies to the new construction portion of additions.	**0 Points**
Renovation Note: This item applies to renovations that involve the demolition/reconfiguration/addition of interior walls or a change in the heating, cooling and ventilation system of the home or a test of the home for balanced pressure from room-to-room.	**2 Additional Points**

704.5 HVAC Design and Installation

704.5.1 ACCA 36-S (Manual S) or equivalent is used to select heating and/or cooling equipment.	**1**

704.5.2 HVAC contractor and service technician are certified by a nationally or regionally recognized program such as North American Technician Excellence, Inc. (NATE), Building Performance Institute (BPI), Radiant Panel Association, or manufacturers' training program.	**1**

704.5.3 Performance of the heating/cooling system is verified by the HVAC contractor in accordance with all of the following: **(1)** Start-up procedure is performed according to manufacturer's instructions. **(2)** Refrigerant charge is verified by super-heat and/or sub-cooling method. **(3)** Burner is set to fire at nameplate input.	**2**

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GREEN BUILDING PRACTICES	POINTS
(4) Air handler setting/fan speed is set per manufacturer's instructions. **(5)** Total air flow is within 10% of design flow. **(6)** Total external system static does not exceed equipment capability at rated airflow.	
704.5.4 HVAC equipment operates using an alternate refrigerant containing no HCFCs. Points awarded only until January 20, 2010.	**1**
704.5.5 Manufacturer's label on sealed air handler (excluding furnaces) states leakage is ≤2% of design air flow at a pressure of 1-inch w.g. Where installed, air handler is tested with inlets, outlets, and condensate drain ports sealed, and filter box in place.	**4**
704.6 Installation and Performance Verification	
704.6.1 Third party onsite inspection, including compliance with Section 704.6.1.1 and 704.6.1.2, is conducted to verify installation of energy related features, with all of the following as applicable. When multiple buildings or dwelling units of the same model are built by the same builder, a representative sample inspection of a minimum of 15% of the buildings or dwelling units is permitted. **(1)** Ducts installed per IRC/IMC and duct sealing is performed. **(2)** Building envelope air sealing is performed. **(3)** Insulation is installed with no gaps, voids, or compression. **(4)** Windows, skylights, and doors are flashed, caulked, and sealed. **(5)** Minimum of two onsite inspections are performed. One inspection after insulation is installed and prior to being covered, and another inspection upon completion of the project.	**5**
704.6.2 Third party testing is conducted to verify performance.	
704.6.2.1 Building envelope leakage rate is demonstrated by blower door test. In addition to the test, the following are practices are required: 1. Mechanical ventilation is provided in accordance with 902.5. 2. Fossil fuel furnace and water heater is sealed combustion or power vented in accordance with 801.1. 3. Fireplaces are direct vent or sealed in accordance with 901.3. The maximum leakage rate is in accordance with:	
(a) 5 ACH50	**3**
(b) 4 ACH50	**6**
(c) 3 ACH50	**9**
(d) 2 ACH50	**12**
(e) 1 ACH50	**15**

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GREEN BUILDING PRACTICES	POINTS
704.6.2.2 The entire central HVAC duct system, including air handlers and registerboots, is tested for leakage at a pressure differential of 0.1 inches w.g. (25 Pa). The maximum leakage as a percent of the system design flow rate is in accordance with the following:	
(a) For ductwork entirely outside the buildings thermal envelope: 6%.	**15**
(b) For ductwork entirely inside the building thermal envelope: 6%	**5**
(c) For ductwork both inside and outside the building thermal envelope: 6%	**15**

704.6.2.3 Balanced HVAC air flows are demonstrated by flow hood test results in accordance with all of the following: **(a)** Measured flow at each supply and return register is within 25% of design flow. **(b)** Total air flow is within 10% of design flow	**8**
Addition Note: Section 704.6.2 applies to the new construction portion of additions. Points are available on the basis of a ratio of [new sf/total sf].	**0 Points**
Renovation Note: Evaluate the energy performance features of the existing whole building envelope. Choose one of the following based on the evaluation.	
(A) If the overall energy performance features of the existing building are equal to or better than the requirements for new construction, this item applies to the renovation.	**1 Additional Point**
(B) If the overall energy performance features of the existing building are less than the requirements for new construction, third party testing is conducted to verify performance claimed in Sections 701.4.3, 703.1, and 703.2.1.	**3 Additional Points**

705
Innovative Practices

705.1 (Reserved - To be Determined)	

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CHAPTER 8

WATER EFFICIENCY

GREEN BUILDING PRACTICES	POINTS

801
Indoor and Outdoor Water Use

801.0 Intent. Measures that reduce indoor and outdoor water usage are implemented.

801.1. Indoor water usage is reduced by one of the following:	
(1) All hot water pipe runs to fixtures in the kitchen and bathrooms are 40-feet or less from the water heater and the minimum hot water piping sizing allowed by code for the application is used, or	**2**
(2) All hot water pipe runs to fixtures in the kitchen and bathrooms are 30-feet or less from the water heater and the minimum hot water piping sizing allowed by code for the application is used, or	**3**
(3) One of the structured piping system designs ~~to~~ is implemented as follows:	
(a) Use structured plumbing with demand controlled hot water loops, all fixture fittings contain no more than 2 cups (28.9 cubic inches = 0.125 gallons) of the recirculating trunk line; or,	**4**
(b) Implement an engineered parallel piping system (i.e. manifold system) in which the hot water line distance from water heater to the parallel piping system is less than 5 feet and the parallel piping to the fixture fittings contains no more than 4 cups (58 cubic inches = 0.25 gallons); or	**4**
(c) Use a central core plumbing system with all fixture fittings (faucets & showerheads) each containing no more than 3 cups (43.3 cubic inches = 0.2 gallons) pipe volume from the water heater.	**5**
Addition Note for Practice 801.1.3(a): This practice applies to the new construction portion of addition(s) that alter portions of a home with hot water appliances/fixtures.	
Renovation Note for Practice 801.1.3(a): This practice applies to renovation projects that have the ability to meet the new construction standards are eligible for these points. Renovation projects that are unable to meet the length of pipe runs indicated in the standard but are able to shorten existing pipe runs by the following percentages receive points as follows:	
(a) 25% reduction in total pipe length	**½ Points for (a) or (b)**
(b) 50% reduction in total pipe length	**Full Points for (a) or (b)**

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GREEN BUILDING PRACTICES	POINTS
Addition Note for Practice 801.1.3(b): Where new hot water system is provided in an addition, this item applies. **Addition and Renovation Note for Practice 801.1.3(b):** This practice applies where hot water lines in the existing building are accessible. At least 50% of the hot water lines must meet the standard to receive points	**2 Additional Points**
801.2 Over 40-feet of pipe run from water heater to fixture locations is aided by one of the following **(1)** Tankless water heater is installed at point of use and is served only by cold water or a solar-assisted systems. **(2)** On demand hot water recirculation system is installed.	**1**
801.3 ENERGY STAR® water-conserving appliances are installed **(1)** Dishwasher **(2)** Washing machine **(3)** Washing machine with a water factor of 6.0 or less **Addition and Renovation Note:** When in accordance with the following: **(1)** Replace existing dishwasher **(2)** Replace existing washing machine **(3)** Replace existing washing machine with a water factor of 6.0 or less	 **2 (Mandatory for Gold and Emerald Levels)** **4 (Mandatory for Gold Level)** **8 (Mandatory for Emerald Level)** **2 Additional Points** **1 Additional Point** **1 Additional Point**
801.4 Total showerhead flow rate[(1), (2)] in each shower compartment at any point in time is as follows. In addition: (a) The total flow rate is tested at 80 psi per ASME A112.18.1/CSA B125.1; and (b) Showers are equipped with an automatic compensating valve that complies with ASSE 1016 or ASME A112.18.1/CSA B125.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead being used. **(1)** 2.0 to less than 2.5 gpm (errata) **(2)** 1.6 to less than 2.0 gpm (errata) **Addition Note:** This item applies to additions that include at least one bath/shower.	**1 Point for each showerhead, Max 3 Points** **1 Additional Point for 100% compliance** **2 Additional Points for 100% compliance** **0 Points**

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GREEN BUILDING PRACTICES	POINTS
Renovation Note: This item applies to renovations that include a bathroom(s) with bath/shower. **X** points are given for each additional showerhead in the home replaced with a showerhead that has a flow rate to meet the new construction requirements.	**1 Additional Point per Fixture** **2 Additional Points**
801.5 Water-efficient lavatory faucets with flow rates of 1.5 gpm or less are installed and rated as maximum flow rate when tested at 60 psi per ASME A112.18.1/CSA B125.1. **Addition Note:** This item applies to additions that include a bathroom. **Renovation Note:** This item applies to renovations in bathrooms. Additional points are available for replacing faucets in non-renovated bathrooms with faucets that meet the new construction standard.	**1 point for each bathroom, Max 3 Points** **1 Additional Point for 100% Compliance** **1 Additional Points** **2 Additional Points**
801.6 Water closets and urinals are in accordance with the following: **(a)** Water closet with an effective flush volume of 1.28 gallons or less when tested per ASME A112.19.2 and ASME A112.19.14, and complying with EPA specification WaterSense Tank-Type High-Efficiency Toilet is installed, **(b)** Urinal with a flush volume of 0.5 gallons or less when tested per ASME A112.19.2 is installed. **Point Modification:** 1) For water closets, points only awarded in either 801.6 or 802.2, not both. 2) All water closets and urinals shall be in accordance with Section 801.6 and Section 802.2 for Gold and Emerald Levels. **Addition and Renovation Note:** This Section applies to additions and renovations that include bathrooms. Renovations that do not include bathrooms receive points for replacing existing toilets with toilets in compliance with this Section.	**3 Points for each fixture, Max 9 Points** **4 Points for each fixture, Max 4 Points** **1 Additional Point for 100% Compliance** **Additions** **0 Points** **Renovations** **1 Additional Point**

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801.7 A low-volume, non-spray irrigation system is installed:	
(1) Stream-rotator spray heads	**2**
(2) Drip irrigation	**4**
(3) Bubblers	**4**
(4) Drip emitters	**4**
(5) Soaker hose	**4**
(6) Subsurface irrigation	**6**
Point Modification: Points awarded only for one type of irrigation system.	
Addition Note: This item applies to additions that increase the building footprint or affect the irrigation system.	**1 Additional Point**
Renovation Note: This item applies to renovations of the landscape, hardscape or outdoor living areas with existing irrigation systems or to renovations that focus on the replacement of the irrigation system.	**2 Additional Points**

801.8 Irrigation system is designed and installed by an EPA WaterSense certified irrigation professional.	**3**
Addition Note: This item applies to additions that increase the building footprint or affect the irrigation system.	**Mandatory**
Renovation Note: This item applies to renovations of the landscape, hardscape or outdoor living areas with existing irrigation systems or to renovations that focus on the installation or replacement of the irrigation system.	**Mandatory**

801.9 Irrigation system is zoned separately for turf and bedding areas.	**2**
Addition Note: This item applies to additions that increase the building footprint or affect the irrigation system.	**1 Additional Point**
Renovation Note: This item applies to renovations of the landscape, hardscape or outdoor living areas with existing irrigation systems or to renovations that focus on the installation or replacement of the irrigation system.	**2 Additional Points**

801.10 One of the following irrigation controls is implemented:	
(1) Weather forecast based irrigation controls are used	**2**
(2) Rain moisture sensing irrigation controls are used	**3**
(3) Soil moisture sensing irrigation controls are used	**4**
(4) No irrigation is installed and practice 503.6 is implemented.	**5**

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GREEN BUILDING PRACTICES	POINTS
801.11 Rainwater collection and distribution. **(1)** Rainwater is collected and used as permitted by local building code. **(2)** Rainwater is distributed using a renewable energy source or gravity.	 **3** **2**
801.12 Self-closing valve, motion sensor, metering, or pedal-activated faucet is installed to enable intermittent on/off operation. **Renovation Note:** Where installed:	**1 Points for each fixture, Max 3 Points** **1 Additional Point**

802
Innovative Practices

802.1 Gray water is separated and reused as permitted by local building code. **Addition and Renovation Note:** Where installed:	**3** **5 Additional Points**
802.2 Composting or waterless toilet is installed as permitted by local building code. **Point Modification:** 1) For water closets, points only awarded in either 801.6 or 802.2, not both. 2) All water closets and urinals shall be in accordance with Section 801.6 and Section 802.2 for Gold and Emerald Levels.	**4 Points for each fixture, Max 8 Points**
802. 3 One of the following automatically shut off water supply devices is installed. **(1)** Excess Water Flow Shutoff **(2)** Leak Detection System	**2**

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CHAPTER 9

INDOOR ENVIRONMENTAL QUALITY

GREEN BUILDING PRACTICES	POINTS
901 **Pollutant Source Control**	
901.0 Intent. Pollutant sources are controlled in accordance with one or more of the following.	**Mandatory**
901.1.1 Natural draft space heating or water heating equipment is not located in conditioned spaces, including conditioned crawl spaces. Exception: Natural draft equipment may be installed within the conditioned spaces if located in a mechanical room that has an outdoor air source, and is otherwise sealed and insulated to separate it from the conditioned spaces.	**1**
Addition Note: This item applies to additions that include the use of natural draft space heating or water heating equipment.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations that include areas where natural draft space heating or water heating equipment is located. Additional points are available for any renovation that meets the new construction standard for this item.	**1 Additional Point**
901.1.2 Air handling equipment or return ducts are not located in the garage, unless placed in isolated / air sealed mechanical rooms with an outside air source.	**1**
Renovation Note: Renovations that modify existing duct systems.	**2 Additional Points**
901.1.3 The following combustion space heating and water heating equipment is installed within conditioned space.	
(1) Direct vent furnace	**3**
(2) (a) Power vent water heater	**5**
(b) Direct vent water heater	**5**
901.2 Fireplaces and Fuel Burning Appliances are in accordance with the following:	**Mandatory**
Renovation Note: Renovations that replace existing space heating and water heating combustion equipment.	**2 Additional Points**
When a wood-burning masonry fireplace is installed, it is equipped with gasketed doors, outside combustion air, and a chimney top damper.	**1 Point, Only allowed for Bronze Level**

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GREEN BUILDING PRACTICES	POINTS
Addition Note: This item applies to an addition that includes a fireplace.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations that include existing fireplaces that do not meet the new construction standard. Points are available for removing or rendering permanently unusable existing fireplaces that do not meet the new construction standard in areas other than the main renovation.	**2 Additional Points**
(1) Fireplaces and fuel-burning appliances (with the exception of cooking devices) located in conditioned spaces shall (a) be vented to outdoors, and (b) have adequate combustion and ventilation air provided to minimize the potential for spillage or "back-drafting". Compliance shall be achieved by using ~~complying with~~ (a) ANSI/ASHRAE 62.2-2007, Section 6.4, or (b) equivalent design requirements, or (c) by meeting the requirements of a Worst Case Depressurization Combustion Air Zone (CAZ) Test according to an established protocol. This ~~provision~~ practice ~~shall apply~~ applies to any of the following installations:	**Mandatory**
(a) Factory-built, wood-burning fireplaces ~~shall~~ meets the certification requirements of UL 127, and meets the emission limits in EPA 40 CFR Part 60.	**6**
(b) Natural gas and propane fireplaces ~~shall be~~ are power vented or direct vented, as defined by NFPA 54, 3.3.108, have a permanently fixed glass front or gasketed door, and comply with ANSI Z21.88/CSA 2.33.	**6**
(c) Wood stove and fireplace inserts as defined in Section 3.8 of UL 1482, meet the certification requirements of that standard, and meet the emission requirements of EPA 40 CFR Part 60 and WAC 173-433-100(3).	**6**
(d) Pellet stoves meet the requirements of ASTM E1509.	**6**
(e) Masonry heaters, as defined by ASTM E1602, and the IBC, 2112.1	**6**
(2) No fireplace or woodstove is installed in the home	**7**
Renovation Note: Remove existing unvented fireplace.	**2 Additional Points**
Renovation Note: Points are available for removal or replacement of an unvented fireplace with a fireplace that meets 901.2	**1 Additional Point**

901.3 Garages are in accordance with the following:	
(1) Attached garage	
(a) Tightly-sealed, gasketed door is installed in the common wall between the attached garage and conditioned spaces.	**2 Points (Mandatory)**
(b) A continuous air barrier is provided between walls and ceilings separating the garage space from the conditioned living spaces.	**2 Points (Mandatory)**

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(c) Attached garages for one and two-family dwelling units have a 100 cfm or greater ducted, or 70 cfm or greater unducted wall exhaust fan vented to the outdoors, designed and installed for continuous operation, or has controls that activate (motion detectors, pressure switches, etc.) operation for at least one hour when either human passage door or roll-up auto doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with (Extracted ASHRAE Provision) ****include ASHRAE 62.2-2007, Section 7.3 and Table 7.3. Copyright release pending. *****	**4**
(2) Garage is detached from the house.	**10**
Addition Note: This item applies when the addition is a garage or shares a continuous air barrier with the garage.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations that involve construction adjacent to an attached garage or a focused effort to create a continuous air barrier between the garage and conditioned space. Care should be taken with penetrations occurring between walls and ceilings separating the garage and conditioned space.	**1 Additional Point Focus Effort Additional Points**

901.4 85 percent of countertops, permanent shelving, and other nonstructural products manufactured in accordance with the following:	
(a) Particleboard and medium density fiberboard (MDF) complying with ANSI A208.1 and A208.2, respectively.	**2 Points per Product Group**
(b) Hardwood plywood complying with HPVA HP-1-2004, and U.S. HUD Title 24, Part 3280.	**2 Points per Product Group**
(c) Particleboard, medium density fiberboard (MDF), or hardwood plywood is certified by a third party as complying with EPP Specification CPA 2-06.	**3 Points per Product Group**
(d) Composite wood or agrifiber panel products contain no added urea-formaldehyde	**4 Points per Product Group**
(e) Non-emitting products.	**4 Points per Product Group**
Renovation Note: Renovations that replace existing countertops, shelving and other nonstructural products.	**2 Additional Points**

901.5 Carpets are in accordance with the following:	
(1) Carpeting is not installed in bathrooms. **Exception:** Dressing areas.	**1 point (Mandatory)**
(2) 85 percent of installed carpet area, carpet cushion (padding), and carpet adhesives are certified by a third party as compliant with emission levels in accordance with the Carpet and Rug Institute's (CRI) Green Label or Green Label Plus indoor air quality program.	**8**

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GREEN BUILDING PRACTICES	POINTS
Renovation Note: Renovations when existing carpet to be replaced is included. Remove existing carpet and perform one of the following repair methods:	**2 Additional Points**
(a) Expose, clean and finish non-carpet flooring to be used as the finished floor	**2 Additional Points**
(b) Install carpet compliant with item 901.5	**0 Additional Points**
(c) Install new non-carpet flooring product compliant with approved green labeling program(s).	**1 Additional Point**

901.6 85 percent of installed resilient flooring is certified by a third party as compliant with the emission levels in accordance with the Resilient Floor Covering Institute's FloorScore Indoor Air Certification Program and/ or GREENGUARD Environmental Institute's GREENGUARD Indoor Air Quality Certification program.	**6**

901.7 Low VOC emitting wall covering is used for 85 percent of wall area. Wall coverings are compliant with the emission limits of the GreenGuard Environmental Institute's Air Quality Certification program, or equivalent.	**4**

901.8 Architectural Coatings are in accordance with the following:	
901.8.1 Site-applied products are used that meet one of the following certification programs or standards:	**3 Points (Mandatory)**
(1) "Zero VOC" as determined by EPA Method 24 (VOC content below the detection limit for the method) and do not contain formaldehyde, ethylene glycol, acetone, or crystalline sillica; or	
(2) The California Air Resources Board (CARB) Suggested Control Measure (SCM) for Architectural Coatings; or	
(3) ~~Are~~ Coatings certified to standard GS-11.	
901.8.2 Site-applied products are used that meet one of the following three certification programs or standards, that include emissions testing:	**5**
(1) The GreenGuard Environmental Institute Certification Standards	
(2) California's Collaborative for High Performance Schools (CHPS) Section 01350, Special Environmental Requirements; or	
(3) The Scientific Certifications System's Indoor Air Quality Performance, Environmental Certification Program (SCS).	
Addition and Renovation Note: When home is occupied during construction, this item is required.	**1 Additional Point**

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GREEN BUILDING PRACTICES	POINTS
901.9 Adhesives and Sealants. 90% of site-applied adhesives and sealants are in accordance with GS-36.	
901.9.1 Low-VOC Adhesives and Sealants: Site-applied products used for the installation of subfloors and on the exterior of the project are in accordance all with the following as applicable: **(1)** Construction Adhesives: Volatile Organic Compound (VOC) content not to exceed the greater of 7% by weight or 75 grams/liter. **(2)** Reactive Sealants (silicones, polyurethanes, and hybrids, such as MS Polymer and silylated polyurethane resin or SPUR): VOC content not to exceed the greater of 4% by weight, or 50 grams/liter. **(3)** All other caulks and sealants: ~~a~~ VOC content not to exceed the greater of 2% by weight, or 30 grams/liter. **(4)** Contact Adhesives: ~~a~~ VOC content not to exceed the greater of 55% by weight, or 480 grams/liter.	**5**
901.9.2 Site-applied adhesives, sealants, and caulks used within the interior of the building meet one of the following: **(a)** GREENGUARD certification program; Scientific Certification Service's Indoor Advantage Gold program; **(b)** The California's Collaborative for High Performance Schools (CHPS) Reference Specification for Energy and Resource Efficiency, Section 1350, Special Environmental Requirements, which require the testing of emissions from products.	**5**
901.10 Kitchen and bath vanity cabinets are in accordance with the following:	
(1) Installed kitchen and bath vanity cabinets comply with the Kitchen Cabinet Manufacturers Association Environmental Stewardship Program 01-06, or	**2**
(2) Installed kitchen and bath vanity cabinets are made of at least 85% no-added urea-formaldehyde or phenol-formaldehyde materials adhesives that comply with section 901.9.1 and coatings that comply with section 901.8.1, or	**3**
(3) Installed kitchen and bath vanity cabinets are made of at least 85% no-added urea-formaldehyde or phenol-formaldehyde materials adhesives that comply with section 901.9.2 and coatings that comply with section 901.8.2, or	**4**
(4) Installed kitchen and bath vanity cabinets emit no VOCs	**4**
Renovation Note: Renovations that replace existing kitchen and bath vanity cabinets.	**2 Additional Points**

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902
Pollutant Control

902.0 Intent. Pollutants generated in the building are controlled in accordance with one or more of the following.

902.1 The minimum ventilation rate shall be 50 cfm for bathrooms and 100 cfm for kitchens. **Addition Note:** This item applies to additions that include a kitchen or bathroom. **Renovation Note:** This item applies to renovations that include a kitchen or bathroom. Points are available for all of the following conditions; **(a)** Replacing existing non-vented kitchen range or bathroom exhaust systems to meet this standard in an area that is undergoing renovation. **(b)** Replacing existing non-vented kitchen range or bathroom exhaust systems to meet this standard in an area that is not undergoing renovation **(c)** Installation of new kitchen range or bathroom exhaust systems to meet this standard where no exhaust system existed before renovation.	**Mandatory** **2 Additional Points** **3 Additional Points** **1 Additional Point**
902.2 Bathroom and/or laundry exhaust fan is provided with an automatic timer and/or humidistat.	**5 for First Device** **2 per for Additional Devices** **Max. 9 Points**
902.3 Kitchen range, bathroom, and laundry exhaust are verified to specification. Ventilation airflow at the point of exhaust is tested to a minimum of 100 cfm for kitchens and 50 cfm for bathrooms/laundry.	**8**
902.4 Exhaust fans are ENERGY STAR as applicable.	**2 per Fan, Max. 6 Points**

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902.5 Whole building ventilation meets the requirements of Table 902.5.

(*** Insert ASHRAE 62.2 Tables 4.1a and 4.1b including Exceptions. Copyright release pending***)

Table 902.5 - Ventilation Air Requirements

Mandatory

Exceptions: One of the system options is implemented:

(1) Exhaust or supply fan(s).	**3**
(2) Balanced exhaust and supply fans.	**4**
(3) Heat-recovery ventilator.	**7**
(4) Energy-recovery ventilator.	**10**

Addition Note: To apply this practice to an addition, choose one of the following methods:

(a) Decouple the pressure and thermal boundaries of the addition from the existing home. — **0 Points**

(b) If the pressure and thermal boundaries of the addition are not decoupled from the existing home apply this standard to the whole house. — **1 Additional Point**

Renovation Note: This item applies to the whole house for connected thermal and pressure boundaries. — **2 Additional Points**

902.6 Ventilation airflow is tested to meet the design fan airflow at point of exhaust to the requirements in Table 902.5. — **8**

902.7 MERV filters 8 or greater are installed on central air systems. — **7**

Addition Note: This item applies to additions that include a new HVAC system. — **0 Points**

Renovation Note: This item applies to renovations that replace an existing HVAC system. — **1 Additional Point**

902.8 Passive radon systems complying with IRC Appendix F is installed in accordance with the following:

(a) Buildings located in Zone 1. — **10 Points (Mandatory)**

(b) Buildings located in Zone 2. — **10**

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GREEN BUILDING PRACTICES	POINTS
902.9 One of the following HVAC system protection measures is performed: **(1)** HVAC supply registers (boots), return grilles, and rough-ins are covered during construction activities to prevent dust and other pollutants from entering the system. **Addition and Renovation Note:** Section 902.9(1) does not apply to additions and renovations. **(2)** Prior to owner occupancy, HVAC supply registers (boots), return grilles, and duct terminations are inspected and vacuumed. In addition, the coils are inspected and cleaned and the filter is replaced if necessary. **Addition Note:** This item applies to the new construction portion of the addition. **Renovation Note:** This item applies where a focused effort is made to solve this problem. **Addition and Renovation Note:** As an alternative to Section 902.9(2), implement one of the following options:	**3**
(a) During construction, create a construction indoor air quality (IAQ) schedule that includes, at minimum the following: Type of construction activity, ability to occupy the home, Indoor Air Quality protections for occupant(s) of the home, hazardous waste removal, and name/age of occupants of the home at a specific time.	**1 Additional Point**
(b) Seal off the addition or renovation area from the occupied portion of the home. Do not use the same HVAC system for conditioning the air in renovated and occupied space.	**1 Additional Point**
(c) Do not occupy the home during the entire construction period and treat as new construction.	**1 Additional Point**
902.10 Central vacuum system is installed and vented to the outside.	**5**

903
Moisture Management: Vapor, Rainwater, Plumbing, HVAC

903.0 Intent. Moisture and moisture effects are controlled in accordance with one or more of the following.

903.1 Tile backing materials installed under tiled surfaces in wet areas shall be in accordance with ASTM C1178, C1278, or C1325. * Paper-faced sheathing shall not qualify for points.	**Mandatory**

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903.2 A capillary break shall be installed at all concrete slabs in accordance with one of the following: **(a)** A 4-inch bed of ½ inch diameter or greater clean aggregate, covered with polyethylene or polystyrene sheeting in direct contact with the concrete slab, lapped at joints as described in 903.3. **(b)** a minimum 4 inch uniform layer of sand, overlain with a layer or strips of geotextile drainage matting, covered with polyethylene sheeting lapped at joints as described in 903.3. **Exceptions:** **1.** In areas with free-draining soils, identified as Group 1 in the IRC by a certified hydrologist, soil scientist, or engineer through a site visit, a gravel bed or geotextile matting is not required. **2.** Polyethylene sheeting is not required in Dry climates as defined by IECC, Figure 301.1, unless required for radon resistance (902.8).	**Mandatory**
Addition Note: This item applies to the new construction portion of additions.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations that include slab removal/replacement.	
(a) Additional points available for damp proofing below grade walls.	**1 Additional Point**
(b) Additional points available for installing a footing drainage system.	**2 Additional Points**

903.3 Slab and crawl space vapor retarder complying with all provisions of Sections 903.3.1 and 903.3.2 as applicable. Joints of vapor retarder overlaps a minimum of 6 inches and taped.	

903. 3.1 Slabs. Minimum 6-mil vapor retarder is installed directly under slab.	**Mandatory**

903.3.2 Crawl spaces. Vapor retarder is installed in crawl spaces as follows: **(1) Floors.** Minimum 6-mil vapor retarder installed on the crawl space floor.	**6**
(2) Walls. Vapor retarder on walls installed as follows: **(a)** Equal to or less than 1 perm vapor retarder is extended up the wall enough to allow the material to be affixed with glue and furring strips; or	**3**
(b) Damp-proof walls are provided below finished grade.	**3**

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(c) Exterior drain tile is installed in accordance with the IRC/IBC for crawlspaces below grade **Exception:** Dry climates as defined by the ICC Figure 301.1 and Table 301.1	**3**

903.4 Crawlspace that is built as a conditioned area is sealed to prevent outside air infiltration and provided with conditioned air at a rate not less than 0.02 cfm per square foot of horizontal area and one of the following is implemented:	
(1) A concrete slab over lapped 6 mil polyethylene or polystyrene	**8**
(2) 6-mil polyethylene sheeting lapped, 12 inches and taped at the seams.	**7**
Addition Note: This item applies to the new construction portion of additions.	**1 Additional Point**
Renovation Note: This item applies to renovations that include a focused effort to convert an existing vented crawlspace into an unvented, conditioned crawlspace.	**2 Additional Points**
Addition Note: This item applies to the new construction portion of additions.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations that include exterior walls and plumbing lines or plumbing lines in unconditioned spaces.	**0 Points (Mandatory)**
(a) Provide additional points for a renovation that makes a focused effort to solve this issue by reconfiguring the plumbing.	
(b) Provide reduced points for a renovation that can not reconfigure the plumbing but insulated the plumbing in exterior walls.	

903.5 Moisture control measures are in accordance with the following:

903.5.1 Building materials with visible mold not installed.	**2 Points (Mandatory)**

903.5.2 Walls not enclosed (e.g. with drywall) if the insulation has a high moisture content: Wet applied insulation products to follow the manufacturers instructions for drying.	**2 Points (Mandatory)**

903.5.3 Moisture content of lumber is measured to ensure it does not exceed 19 percent moisture content prior to the wall cavity being enclosed.	**4**

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903.6 Moisture content of subfloor/substrate or concrete slabs is in accordance with the appropriate industry standard for the finish flooring to be applied. **Addition Note:** This item applies where new finish flooring is applied. **Renovation Note:** This item applies where new finish flooring is applied. Additional points available for correcting excess moisture levels in an existing subfloor/substrate.	**2** **0 Points (Mandatory)** **2 Additional Points**

903.7 Plumbing is in accordance with the following:

903.7.1 Plumbing distribution lines are not installed in exterior wall cavities	**2**

903.7.2 Cold water pipes in unconditioned spaces are insulated with a minimum of R-4 pipe insulation or other coating that adequately prevents condensation. **Renovation Notes:** For renovations only: replace entire plumbing system to the connections with water distribution and/or waste lines, equipment and fixtures. This item applies if it corrects one or more of the following issues: **(a)** Repair or replace plumbing in unconditioned spaces; or **(b)** Improve plumbing in unconditioned spaces	**2** **1 Additional Point** **2 Additional Points**

903.7.3 Plumbing is not installed in unconditioned spaces. **Renovation Notes:** For renovations only: replace entire plumbing system to the connections with water distribution and/or waste lines, equipment and fixtures. This item applies if it corrects one or more of the following issues: **(a)** Poor joint connections **(b)** Thin pipe walls **(c)** Severely reduced water flow due to debris buildup **(d)** Lead or other toxic solders **(e)** Drain, waste, vent system that does not meet the 2006 International Plumbing Code	**5** **2 Additional Points**

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GREEN BUILDING PRACTICES	POINTS
903.8 All HVAC ducts, plenums, and trunks in unconditioned attics, basements, and crawlspaces insulated with a minimum of R-8. Outdoor air supplies to ventilation systems insulated with a minimum of R-8.	**Mandatory**
Addition Note: This item applies to the new construction portion of additions.	**0 Points (Mandatory)**
Renovation Note: This item applies to renovations as follows:	
(a) In areas that include replacement or disturbance of HVAC ducts, plenums and trunk, apply this item	**2 Additional Points**
(b) In areas with specific condensation problems, remove any contaminated ductwork, remove or remediate mold contaminated elements, and correct existing or add new insulation	**2 Additional Points**
(c) Upgrade insulation to existing HVAC ducts, plenums and trunks	**3 Additional Points**

903.9 Humidity is controlled in accordance with the following:	

903.9.1 In "Warm-Humid" climates as defined by IECC Figure 301.1, equipment is installed to maintain Relative Humidity (RH) at or below 60% using one of the following: **(1)** Additional dehumidification system(s) **(2)** Central HVAC system equipped with additional controls to operate in dehumidification mode. **Exception:** Not applicable in Climate Zones 2B, 3B, 3C, 3A above the white line, and 4-8, as shown by IECC Figure 301.1.	**8 Points (Mandatory)**
903.9.2 Equipment designated in 903.9.1 is installed in homes in Climate Zones 3A and 4A, as shown by Figure 6(1).	**8**

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904
Innovative Practices

904.1 A humidity monitoring system is installed with a mobile base unit that displays a reading of temperature and relative humidity at the base unit and at least two remote units. One remote unit that is placed permanently inside the conditioned space in a central location, excluding attachment to exterior walls, and another remote unit is placed permanently outside of the conditioned space.	**2**

904.2 For Renovations only: Replace unsealed combustion gas dryer vent with sealed exhaust vent and sealed make up air.	**1 Additional Point (Mandatory)**

904.2.1 For Renovations only: Replace unsealed combustion gas dryer vent with sealed exhaust vent	**2 Additional Points**

904.3 For Renovations only: Eliminate unvented heater	**2 Additional Points**

904.4 For Kitchen exhaust units that equal or exceeds 400 cfm, provide make-up air.	**2**

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CHAPTER 10

OPERATION, MAINTENANCE, AND BUILDING OWNER EDUCATION

GREEN BUILDING PRACTICES	POINTS

1001
Building Owners' Manual for One- and Two-Family Dwellings

1001.0 Intent. Information on the building's use, maintenance and green components is provided.

1001.1 A homeowner's binder is provided that includes the following, as available and applicable:	**1 point for 2 items**
(1) A local green building program certificate or completion document.	**Mandatory**
(2) List of green building features (can include the national green building checklist).	**Mandatory**
(3) Product manufacturer's manuals or product data sheet for installed major equipment, fixtures and appliances. If product data sheet is in the binder, manufacturer's manual shall be attached to appliance.	**Mandatory**
(4) Information on local recycling programs.	
(5) Information about available local utility programs that purchase a portion of energy from renewable energy providers.	
(6) Explanation of the benefits of using energy efficient lighting systems (e.g., compact fluorescent light bulbs, light emitting diode (LED)) in high usage areas.	
(7) A list of practices to conserve water and energy.	
(8) Local public transportation options (if applicable).	
(9) A diagram showing the location of safety valves and controls for major building systems.	
(10) Where frost protected shallow foundations are used, notify owner of precautions, including instructions not to remove or damage insulation when modifying landscaping, to provide heat to the home as required by the IRC/IBC, and to keep base materials beneath and around the home free from moisture due to broken water pipes or other water sources.	
(11) A list of local service providers that offer regularly scheduled service and maintenance contracts to assure proper performance of equipment and the structure (e.g., HVAC, water heating equipment, sealants, caulks, gutter and downspout system, shower/tub surrounds, irrigation system.)	

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(12) A photo record of framing with utilities installed. Photos taken prior to installing insulation, clearly labeled, and included as part of the homeowner's binder. **(13)** Maintenance checklist. **(14)** List of common hazardous materials often used around the building and instructions for proper handling and disposal of these materials. **(15)** Information about organic pest control, fertilizers, de-icers, and cleaning products. **(16)** Information about native landscape materials and/or those that have low-water requirements. **(17)** Information about methods of maintaining the building's relative humidity in the range of 30-60%. **(18)** Instructions for inspecting the building for termite infestation. **(19)** Instructions for maintaining gutters and downspouts and importance of diverting water at least five feet away from foundation. **(20)** A narrative detailing the importance of maintenance and operation in retaining the attributes of a green-built building.	
For Renovations: EPA Publication "Reducing Lead Hazards When Remodeling Your Home" is provided to homeowner.	**0 Points (Mandatory)**
For Renovations: EPA Publication "Asbestos in Your Home: A Homeowner's Guide" is provided to homeowner.	**0 Points (Mandatory)**

1002 Education of Building Owners on Building Operation And Maintenance for One- and Two-Family Dwellings or Multi-Unit Buildings

1002.1 Building owners/occupants are familiarized with the green building goals and strategies implemented, and the impacts of the occupants' practices on the costs of operating the building. Training is provided to the responsible party(ies) regarding all equipment operation and control systems. Systems shall include, but not be limited to, the following: **(1)** Furnace filters. **(2)** Thermostat operation and programming. **(3)** Lighting controls. **(4)** Appliances and settings. **(5)** Water heater settings.	**6**

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(6) Fan controls.	

1003 Construction, Operation and Maintenance Manuals and Training for Multi-Unit Buildings

1003.0 Intent. Manuals are provided to the responsible parties (Owner, Management, Tenant, and/or Maintenance Team) regarding the construction, operation, and maintenance of the building. The paper or digital format manuals shall include information regarding those aspects of the building's construction, maintenance, and operation that are within the area of responsibilities of the respective recipient. At least one responsible party shall receive a copy of all documentation for archival purposes.

1003.1 A Building Construction Manual, including at least 5 of the following, shall be compiled and distributed in accordance with Section 1003.0:	**1 point per 2 items**
(1) A narrative detailing the importance of constructing a green building including a list of Green Building attributes included in the building. (To be included in all responsible parties' manuals.)	**Mandatory**
(2) A local Green Building Program certificate as well as a copy of the National Green Building Standard, as adopted by the adopting entity, and the individual measures achieved by the building.	**Mandatory**
(3) Record Drawings of the Building	
(4) A Record Drawing of the Site including stormwater management plans, Utility lines, Landscaping with Common Name and Genus/Species of plantings.	
(5) A diagram showing the location of safety valves and controls for major building systems.	
(6) Warranty, operation, and maintenance instructions for all equipment, fixtures, appliances, and finishes.	**Mandatory**
(7) A list of the type and wattage of light bulbs installed in light fixtures.	
(8) A photo record of framing with utilities installed. Photos taken prior to installing insulation, clearly labeled.	

1003.2 Operations Manuals shall be created and distributed to the responsible parties in accordance with Section 1003.0. Between all of the Operation Manuals, at least five of the following options shall be included:	**1 point per 2 Items**
(1) A narrative detailing the importance of operating and living in a green building. (To be included in all responsible parties' manuals.)	**Mandatory**
(2) Information about opportunities to purchase renewable energy from local utilities or national green power providers and information about utility and tax incentives for the installation of on-site renewable energy systems.	

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(3) Information on local and on-site recycling and hazardous waste disposal programs and, if applicable, building recycling and hazardous waste handling and disposal procedures. **(4)** Local public transportation options. **(5)** A list of practices to conserve water and energy such as turning off lights when not in use switching the rotation of ceiling fans in changing seasons, and purchasing Energy Star appliances and electronics. **(6)** Explanation of the benefits of using compact fluorescent light bulbs, LEDs or other high-efficiency lighting. **(7)** Information about native landscape materials and/or those that have low water requirements. **(8)** Information about methods of maintaining the building's relative humidity in the range of 30-60%. **(9)** Information on the radon mitigation system, where ~~if~~ applicable. **(10)** A procedure for educating tenants in rental properties about the proper use, benefits and maintenance of green building systems including a maintenance staff notification process for improperly functioning equipment.	**Mandatory** **Mandatory**

1003.3 Maintenance Manuals shall be created and distributed to the responsible parties in accordance with Section 1003.0. Between all of the Maintenance Manuals, at least five of the following options shall be included: **(1)** A narrative detailing the importance of maintaining a green building. (To be included in all responsible parties' manuals.) **(2)** A list of local service providers that offer regularly scheduled service and maintenance contracts to assure proper performance of equipment and the structure (e.g., HVAC, water heating equipment, sealants, caulks, gutter and downspout system, shower/tub surrounds, irrigation system.) **(3)** User-friendly maintenance checklist that includes a. Furnace Filters. b. Thermostat operation and programming. c. Lighting Controls. d. Appliances and settings. e. Water heater settings. f. Fan controls. **(4)** List of common hazardous materials often used around the building and instructions for proper handling and disposal of these materials. **(5)** Information about organic pest control, fertilizers, de-icers, and cleaning products.	**1 point per 2 Items** **Mandatory**

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(6) Instructions for maintaining gutters and downspouts and importance of diverting water at least five feet away from foundation. **(7)** Instructions for inspecting the building for termite infestation. **(8)** A procedure for rental tenant occupancy turnover that preserves the green features. **(9)** An outline of a formal green building training program for maintenance staff.	

1005
Innovative Practices

1005.1 (Reserved - To be Determined)	

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CHAPTER 11

REFERENCED DOCUMENTS

SECTION 1101 - GENERAL

1101.1 This chapter lists the codes, standards and other documents that are referenced in various sections of this Standard. The codes, standards and other documents are listed herein by the promulgating agency of the document, the document identification, the effective date and title, and the section or sections of this Standard that reference the document. Unless indicated otherwise, the first printing of the document is referenced.

1101.2 The application of the referenced documents shall be as specified in Section 105.

SECTION 1102 – REFERENCED DOCUMENTS

ACCA		*Air Conditioning Contractors of America* *2800 Shirlington Road, Suite 300* *Arlington, VA 22206*	*(703) 575-4477*
29-D	2006	Residential Duct Systems - Manual	701.4.2
556	2006	Residential Load Calculation - Manual J, Eight Edition, Version 2	701.4.1
36-S	2004	Residential Equipment Selection - Manual S, Second Edition	704.5.1

ASHRAE		*American Society of Heating, Refrigerating, and Air-Conditioning Engineers* *1791 Tullie Circle, N.E.* *Atlanta, GA 30329*	*(404) 636-8400*
62.2	2007	Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings	901.2, 901.3

ASME		*American Society of Mechanical Engineers* *Three Park Avenue* *New York, NY 10016*	*(800) 843-2763*
A112.18.1/CSA B125.1	2005	Plumbing Supply Fittings	801.4, 801.5
A112.19.2	2003	Vitreous China Plumbing Fixtures	801.6
A112.19.14	2006	Six-Liter Water Closets Equipped with a Dual Flushing Device	801.6

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ASSE		*American Society of Sanitary Engineers* *901 Canterbury, Suite A* *Westlake, OH 44145*	*(440) 835-3040*
1016	2005	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	801.4

ASTM		*American Society for Testing and Materials* *100 Barr Harbor Drive, PO Box C700* *West Conshohocken, PA, 19428*	*(610) 832-9500*
C1178	2006	Standard Specification for Coating Glass Mat Water-Resistant Gypsum Backing Panel	903.1
C1278	2006	Standard Specification for Fiber-Reinforced Gypsum Panel	903.1
C1325	2004	Standard Specification for Non-Asbestos Fiber-Mat Reinforced Cement Substrate Sheets	903.1
E1509	2005	Standard Specification for Room Heaters, Pellet Fuel-Burning Type	901.2
E1602	2003	Standard Guide for Construction of Solid Fuel Burning Masonry Heaters	901.2

CARB		*California Air Resources Board* *1001 "I" Street* *P.O. Box 2815* *Sacramento, CA 95812*	*(916) 322-2990*
	2000	Suggested Control Measure (SCM) for Architectural Coatings	901.8.1

CHPS		*California's Collaborative for High Performance Schools* *142 Minna Street* *San Francisco, CA 94105*	*(877) 642-2477*
Section 01350	2002	Reference Specification for Energy and Resource Efficiency: Special Environmental Requirements	901.8.2, 901.9.2

CPA		*Composite Panel Association* *18922 Premiere Court* *Gaithersburg, MD 20879-1574*	*(301) 670-0604*
A208.1	1999	Particleboard, Mat-Formed Wood	901.4
A208.2	2002	Medium Density Fiberboard for Interior Use	901.4
CPA 2-06	2006	Environmentally Preferable Product Specification CPA 2-06	901.4

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CSA		*CSA International* *8501 East Pleasant Valley Road* *Cleveland, Ohio, USA, 44131-5575*	(866) 797-4272
2.33A	2007	Vented Gas Fireplace Heaters	901.2
B125.1-05	2007	UPD 2 Plumbing Supply Fittings	801.4, 801.5
Z809	2002	Chain of Custody for Forest Products Originating from a Defined Forest Area Registered to CSA (CAN/CSA-Z809)	606.2

EPA		*Environmental Protection Agency* *1200 Pennsylvania Avenue, N.W.* *Washington, DC 20460*	
40 CRF Part 60 Subpart AAA	1988	New Source Performance Standards: Standards of Performance for New Residential Wood Heaters	901.2
Method 24	2000	Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings	901.8.1
EPA 747-K-97-001	1997	Reducing Lead Hazards When Remodeling Your Home	1001.1
	1990	Asbestos in the Home: A Homeowner's Guide	1001.1
	2007	WaterSense: Tank-Type High-Efficiency Toilet Specification	801.6

GAMA		*GAMA-An Association of Appliance & Equipment Manufacturers* *Hydronics Institute Division* *2107 Wilson Boulevard, Suite 600* *Arlington, VA 22201*	*(703) 525-7060*
H-22	2001	Heat Loss Calculation	701.4.2

GREENGUARD		*GreenGuard Environmental Institute* *1341 Capital Circle, Suite A* *Atlanta, Georgia 30067*	*(800) 427-9681*
GGPS.EC.007.R0	2005	GREENGUARD Emission Criteria – Finish Floor	901.6
GGPS.EC.019.R0	2005	GREENGUARD Emission Criteria - Wall Covering	901.7
GGPS.EC.016.R0	2005	GREENGUARD Emission Criteria – Paints and Coatings	901.8.2

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GS		*Green Seal* *1001 Connecticut Avenue, NW* *Suite 827* *Washington, DC 20036*	*(202) 872-6400*
GS-11	1993	Green Seal Environmental Standards: Paints	901.8.1
GS-36	2000	Green Seal Environmental Standards: Commercial Sealants	901.9

HPVA		*Hardwood Plywood And Veneer Association* *1825 Michael Faraday Drive* *Reston, VA 20190*	*(703) 435-2900*
HP-1	2004	Hardwood and Decorative Plywood	901.4

HUD		*U.S. Department of Housing and Urban Development* *451 7th Street S.W.* *Washington, DC 20410*	*(202) 708-1112*
Title 24, Part 3280	1999	Manufactured Home Construction and Safety Standards	901.4

ICC		*International Code Council, Inc.* *4051 West Flossmoor Road* *Country Club Hills, IL 60478*	*(888) 422-7233*
IBC	2006	International Building Code	602.1, 602.3.1, 602.10, 704.6.1, 901.2, 903.3.2
IECC	2006	International Energy Conservation Code	602.1, 702.2, 703.1.1, 703.1.3, 903.2, 903.9.1, 903.9.2
IRC	2006	International Residential Code	602.1, 602.3.1, 602.10, 701.4.3, 704.6.1, 903.3.2, 902.8.1

NAHBRC		*NAHB Research Center* *400 Prince George's Boulevard* *Upper Marlboro, MD 20774*	*(800) 638-8556*
Z765	2003	Single-Family Residential Buildings - Square Footage - Method for Calculating	601.1

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NFPA		*National Fire Protection Association* *1 Batterymarch Park* *Quincy, Massachusetts 02169*	*(617) 770-3000*
54	2006	National Fuel Gas Code	901.2

RFCI		*Resilient Floor Covering Institute* *401 East Jefferson Street, Suite 102* *Rockville, Maryland 20850*	*(301) 340-8580*
	2004	FloorScore Indoor Air Certification Program	901.6

RESNET		*RESNET Residential Energy Services Network* *P.O. Box 4561* *Oceanside, CA 92052-4561*	*(760) 806-3448*
HERS Standards	2006	2006 Mortgage Industry National Home Energy Rating System Standards	703.1.1, 703.1.2

SRCC		*Solar Rating & Certification Corporation* *1679 Clearlake Road* *Cocoa, FL 32922-5703*	*(321) 638-1537*
OG 300	2007	Directory of SRCC Certified Solar Water Heating System Ratings	704.3.2.1

TCIA		*Tree Care Industry Association* *3 Perimeter Road, Unit 1* *Manchester, NH 03103*	*(603) 314-5380*
A300	2001	Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices	503.1

UL		*Underwriters Laboratories Inc.* *333 Pfingsten Road* *Northbrook, IL 60062-2096 USA*	*(877) 854-3577*
127	1999	Factory Built Fireplaces	901.2
181	2005	The Standard for Safety for Factory-Made Air Ducts and Air Connectors	701.4.3
1482	2000	Solid-Fuel Type Room Heaters	901.2

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WSL		*Washington State Legislature* *106 Legislative Building* *Olympia, WA 98504-0600*	*(360) 786-7573*
WAC 173-433-100(3)		Emission performance standards	901.2

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