Chapter 2
DEFINITIONS

201 GENERAL

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

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

Terms defined in other document. Where terms are not defined in this Code, and such terms are used in relation to the reference of another document, those terms shall have the definition in that
201.3 document.

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

202 DEFINITIONS

ACCESSORY STRUCTURE. A structure, the use of which is customarily accessory to and incidental to that of the residential building; the structure is located on the same lot or site as the residential building; the structure does not contain a dwelling unit; and (1) is classified as Group U - Utility and Miscellaneous in the accordance with the ICC International Building Code, or (2) is classified as accessory in accordance with the ICC International Residential Code, or (3) is classified as accessory to the residential use by a determination of the Adopting Entity.

ADDITION. An extension or increase in floor area or height of a building or structure.

ADOPTING ENTITY. The governmental jurisdiction, green building program, or any other third-party compliance assurance body that adopts this Code, and is responsible for implementation and administration of the practices herein.

ADVANCED FRAMING. Code compliance 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 includes electrical energy.

AIR BARRIER. Material(s) assembled and joined together to provide a barrier to air leakage through the building envelope, An air barrier may be a single material or a combination of materials.

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

AIR 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.

AIR, MAKE-UP. Air that is provided to replace air being exhausted.

ARCHITECTURAL COATINGS. A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, primers, paints, varnishes, sealers, and stains. An architectural coating is a materials applied to stationary structures or their appurtenances at the site if installation. Coatings applied in shop applications, sealants, and adhesives are not considered architectural coatings.

BIOBASED PRODUCT. A commercial or industrial product used in site development or building construction that is composed, in whole or in significant part, of biological products, renewable agriculture materials (including plant, animal, and marine materials), or forestry materials.

CLIMATE ZONE. Climate zone for Santa Fe is 5 dry.
COMMON AREA(S). Areas within a site or lot that are predominantly open spaces and consist of non-residential structures, landscaping, recreational facilities, roadways and walkways, which are owned and maintained by an incorporated or charted entity such as a homeowner's association or governmental jurisdiction.

COMPLETE BASEMENT REMODEL. A basement remodel where the scope of work is such that it requires a building permit.
COMPLETE KITCHEN REMODEL. A kitchen remodel where the scope of work is such that it requires a building permit.
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.
CONSTRUCTION WASTE MANAGEMENT PLAN. A system of measures designed to reduce, reuse, and recycle the waste generated during construction and to properly dispose of the remaining waste.
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).

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.
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.
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.

ENGINEERED WOOD PRODUCTS. Products that are made by combining wood stand, veneers, lumber or other wood fiber with adhesive or connectors to make a larger composite structure.
EXISTING BUILDING. Building completed and occupied prior to any renovation considered under this Code.

FROST-PROTECTED SHALLOW FOUNDATION. A foundation that does not extend below the design frost depth and is protected against the effects of frost in compliance with SEI/ASCE 32-01 or the provisions for frost-protected shallow foundations of the ICC IBC or IRC, as applicable.
FULL BATHROOM REMODEL. A bathroom remodel where the scope of work is such that it requires a building permit.

GRADE PLANE. A reference plane representing the average of the finished ground level adjoining the building at all exterior walls. Where the finished ground level slopes away from the exterior walls, the reference lane shall be established by the lowest points within the area between the building and the lot line or, where the lot line is more than 6 feet (1830 mm) from the building, between the structure and a point 6 feet (1830 mm) from the building.

HIGH-EFFICIENCY LAMPS. Compact fluorescent lamps (CFL); light emitting diode (LED); T-8 or smaller diameter linear fluorescent lamps, or lamps with a minimum efficacy of 1) 60 limens per watt for lamps over 40 watts, 2: 50 lumens per watt for lamps over 15 watts or 40 watts, or 3) 40 lumens per watt for lamps 15 watts or less.
HYDROZONING. A landscape practice that groups plants with similar watering needs together in an effort to conserve water.

LAVATORY FAUCET. A valve for dispensing hot and/or cold water to a basin used for washing hands or face.
LOT. A single parcel of land generally containing one primary structure or use. Lot development, as defined by this Code, may include multiple ownership (such as with a condominium building) or multiple uses (such as with a mixed-use building). A lot is predominately represented by a single-family dwelling unit, a multifamily structure, or a mixed-use building also containing offices and shops. Lots may be located in urban, suburban, and promote soil infiltration and recharge.

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

MODULAR CONSTRUCTION. Three-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 BUILDINGS. A building containing multiple dwelling units and classified as R-2 under the ICC IBC.

NEW CONSTRUCTION. Construction of a new building or construction that completely replaced more than 75 percent of an existing building.

PERMEABLE MATERIAL. A material that permits the passage of water vapor and/or liquid.
PLUMBING FIXTURE. A receptor or device that requires both a water-supply connection and a discharge to the drainage system, such as water closets, lavatories, bathtubs, and sinks.
PRECUT. Materials cut to final size prior to delivery to site and ready for assembly.

PROJECTION FACTOR. The ratio of the overhang width to the overhang height above the door threshold or window sill (PF=A/B).

RECYCLE. To recover and reprocess manufactured goods into new products.
REMODLING. The process of restoring or improving an existing building, dwelling unit, or property.
RENEWABLE ENERGY. Energy 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 there from, including wind, hydropower, waves and tides, and 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.
REPLACEMENT. The act or process of replacing material or systems.
REUSE. To recover a material or product for use again without processing.

SIP (Structural Insulated Panel). A Structural sandwich panel that consists of a light-weight foam plastic core securely laminated between two thin, rigid wood structural panel facings; a structural panel that consists of lightweight foam plastic and cold-formed steel sheet or structural cold-formed steel members; or other similar non-interrupted structural panels.
SOLID FUEL-BURNING APPLIANCE. A chimney connected device designed for purposed of heating, cooking, or both that burns solid fuel.
STORY. That portion of a building including between the upper surface of a floor and the upper surface of the floor or roof of the next above.
STORY ABOVE GRADE. Any story having its finished floor surface entirely above grade, except that a basement shall be considered as a story above grade where the finished surface of the floor above the basement is:
1. More than 6 feet (1829 mm) above the grade plane.

2. More than 6 feet (1829 mm) above the finished ground level for more than 50 percent of the total building perimeter.
3. More than 12 feet (3658 mm) above the finished ground level at any point.

VENTILATION. The natural or mechanical process of supplying conditioned or unconditioned air to, or removing such air from, any space.

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.

Chapter 11
REMODELING

Item #	Green Building Practices	Points
11.3	**COMPLIANCE AND APPLICABILITY**	
11.305.1	**Compliance.** Compliance with Section 305 is mandatory.	
11.305.2	**Compliance options.** The criteria for existing buildings shall be in accordance with Section 305.3 for whole-building ratings or additions greater than 400 sf or Section 305.4 for compliance designations of building functional areas and additions under 400 sf.	
11.305.3	**Whole-building rating criteria**	
11.305.3.1	**Applicability.** The provisions of Section 305.3 shall apply to remodeling of existing buildings that effect 50% or more of the existing conditioned floor area and additions of 400 conditioned sf or greater. In addition to the foundation, at least one major structural system (such as walls) of the existing building shall remain in place after the remodel for the building to be eligible for compliance under Section 305.3. If less of the building remains than needed to be eligible for compliance under Section 305.3 then the Santa Fe Residential Green Building Code for new buildings shall apply.	
11.305.3.1.1	**Additions.** For a remodeled building that meets the applicability for meeting the provisions of Section 305.3 and that includes an addition, the entire building including the addition shall comply with the criteria of Section 305.3.	
11.305.3.3	**Mandatory practices.** For additions and remodels that must comply with Chapter 11, the building, including any additions and common areas, shall satisfy all practices designated as mandatory in Chapter 11.	
11.305.3.4	**Required points for Chapter 11.** A minimum number of 40 points shall be achieved in Chapter 11 in any category.	
11.5	**LOT DESIGN, PREPARATION AND DEVELOPMENT**	
11.500.0	Intent: This section applies to the lot and changes to the lot due to remodeling of an existing building. This section does not apply if there is no landscaping or site work in the	
11.503	**LOT DESIGN**	
11.503.0	**Intent.** The lot is designed to avoid detrimental environmental impacts first, minimize any unavoidable impacts, and to mitigate for those impacts that do occur. The project is designed to minimize environmental impacts and to protect, restore, and enhance the natural features and environmental qualities of the lot. **(Points awarded only if the intent of the design is implemented)**	
11.503.1	**Natural resources.** Natural resources are conserved by one or more of the following:	
(4)	Basic training in tree or other natural resource protection is provided for the on-site supervisor.	4

Item #	Green Building Practices	Points
11.503.5	**Landscape Plan**: A landscape plan for the lot is developed to limit water and energy use while preserving or enhancing the natural environment. **(Where "front" or "rear" only plan is implemented, only half of the points (rounded down to a whole number) are awarded for Items (1)-(6))**	
(2)	Vegetation and trees are selected that are native or regionally appropriate for local growing conditions are selected and specified on the lot plan.	4
(3)	The percentage of cool season turf areas is limited and shown on the lot plan. The percentage is based on the landscaped area of the lot not including the home footprint, hardscape, and any undisturbed natural areas.	
(a)	0 percent	5
(4)	Plants with similar watering needs are grouped (hydrozoning) and shown on the lot plan.	5

11.504	LOT CONSTRUCTION	
11.504.0	**Intent**: Environmental impact during construction is avoided to the extent possible; impacts that do occur are minimized, and any significant impacts are mitigated.	

11.504.2	**Trees and vegetation**: Designated trees and vegetation are preserved by one or more of the following:	
(1)	fencing or equivalent is installed to protect trees and other vegetation.	3
(2)	Trenching, significant changes in grade, and compaction of soil and critical root zones in "tree save" areas as shown on the lot plan are avoided.	5

11.505	INNOVATIVE PRACTICES	
11.505.0	**Intent:** Innovative lot design, preparation and development practices are used to enhance environmental performance. Waivers or variances from development regulations are obtained, and innovative zoning is used to implement such practices.	

(1)	Hardscape: Not less than 50 percent of the surface area of the hardscape on the lot meets one or a combination of the following methods.	5
(c)	Permeable hardscaping: Permeable hardscaping materials are installed.	
(2)	Roofs: Not less than 75 percent of the exposed surface of the roof is in accordance with one or a combination of the following methods.	5
(a)	Minimum initial SRI of 78 for a s low-sloped roof (a slope less than or equal to 2:12) and a minimum initial SRI of 29 for a steep-sloped roof (a slope of more than 2:12). The SRI is calculated in accordance with ASTM E1980. Roof products shall be certified and labeled.	

11.601	QUALITY OF CONSTRUCTION MATERIALS AND WASTE	
11.601.0	**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.	

11.601.1	**Conditioned Floor Area:** Finished floor area of a dwelling unit after remodeling is limited. Finished floor area is calculated in accordance with NAHBRC Z765. Only the finished floor area for stories above grade plane is to be included in the calculation.	
(1)	less than or equal to 1,000 square feet (93 m^2)	15
(2)	less than or equal to 1,500 square feet (139 m^2)	12
(3)	less than or equal to 2,000 square feet (186 m^2)	9
(4)	less than or equal to 2,500 square feet (232 m^2)	6
(5)	greater than 4,000 square feet (372 m^2)	Mandatory

Item #	Green Building Practices	Points
	(For every 100 square feet (9.29 m^2) over 4,000 square feet (372 m^2), one point is to be added to the threshold points to maximum of 60 required points required.)	
11.601.2	**New Work-Material Usage**: Newly installed structural systems are designed or construction techniques are implemented that reduce and optimize material usage. **(Points awarded only when the newly installed portion of each structural system comprises at least 25% of the total area of that structural system after the remodel).**	9 Points max
(1)	24" OC framing	3
(2)	Single top-plate - extrior and bearing walls	3
(3)	Single top-place - interior non-bearing partitions	3
(4)	Right-sized headers or insulated box headers	3
(5)	No headers in non-bearing partitions	3
(6)	Ladders at perpendicular wall intersections	3
(7)	Two-stud exterior corner framing ore equivalent	3
(8)	Doubling the rim joist in lieu of header	3
(9)	Ladder blocking or equivalent at intersection of interior wall and exterior wall.	3
(10)	Ladder blocking or equivalent at all interior wall intersections	3
(11)	Other (specify and provide detail)	3

11.601.5	**Prefabricated components.** Precut or preassembled components, or panelized or precast assemblies are utilized for a minimum of 90 percent for the following system or building: **(Points are awarded only when the newly installed system comprises at least 25 percent of the total area of that system of the building after the remodel)**	13 max
(1)	floor system	4
(2)	wall system	4
(3)	roof system	4
(4)	modular construction for any new construction located above grade	13

11.601.6	**Stacked Stories**: Stories above grade are stacked, such as in 1 1/2-story, 2-story, or greater structures. The area of the upper floor is a minimum of 50 percent of the area of the story below, based on areas with a minimum ceiling height of 7 feet (2134 mm).	8 Max
(1)	first stacked story	4
(2)	for each additional stacked story	2

11.601.7	**Site-applied Finishing Materials**: Building materials or assemblies listed below that do not require additional site-applied material for finishing are incorporated into the building.	12 Max
(a)	pigmented, stamped, decorative, or final finish for all new concrete or masonry	5
(h)	Use no trim on all new or replaced doors and window counting both interior and exterior and both sides of internal doors.	5

11.602	**ENHANCED DURABILITY AND REDUCED MAINTENANCE**	
11.602.0	Intent: Design and construction practices are implemented that enhance the durability of materials and reduce in-service maintenance.	

11.602.1	**Moisture Management - Building Envelope**	

Item #	Green Building Practices	Points
11.602.1.2	**Foundation waterproofing.** Enhanced foundation waterproofing is installed In all new foundations, and on not less than 25 percent of the foundation after the remodel using one or both of the following:	4
(1)	rubberized coating, or	
(2)	drainage mat	
11.602.1.5	**Termite Barrier**: Continuous physical foundation termite barrier used with low toxicity treatment or with no chemical treatment is installed.	4
11.602.10	**Exterior Doors**: 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 projection factor of 0.375 minimum is provided.	2 per exterior door 6 Max
(a)	installing a porch roof or awning	
(b)	extending the roof overhang	
(b)	recessing the exterior door	
11.602.1.12	**Roof Overhangs**: Fixed permanent roof overhangs, including portals, in accordance with Table 11.602.1.12, are provided over a minimum of 90 percent of exterior walls for sloped roofs or portals that cover 50% or more of the wall area for flat roofed buildings to protect the building envelope.	4
	Table 11.602.1.12	
	Minimum Roof Overhang for One- & Two-Story Buildings	
	Inches Rainfall(1) — **Eave Overhang (inches)** — **Rake Overhang (inches)**	
	≤40 — 12 — 12	
	>41 to ≤70 — 18 — 12	
	>70	
	(1) Annual mean total precipitation in inches in accordance with Figure 6(2)	
	For SI: 1 foot = 304.8 mm	

11.603	REUSED OR SALVAGED MATERIALS	
11.603.0	**Intent**: Practices that reuse or modify existing structures, salvage materials for other uses, or use salvaged materials in the building's construction are implemented.	

11.603.1	**Reuse of Existing Building**: Major elements or components of existing buildings and structures are reused, modified, or deconstructed for later use. **(Points awarded for every 200 square feet (18.5 m^2) of floor area)**	1 12 Max

11.603.3	**Scrap Materials**: Sorting and reuse of scrap building materials is facilitated (e.g., a central storage area or dedicated bins are provided).	4

11.604	RECYCLED-CONTENT BUILDING MATERIALS

11.605	RECYCLED CONSTRUCTION WASTE	
11.605.0	**Intent:** Waste generated during construction is recycled. All waste classified as hazardous is properly disposed of.	

11.605.2	**Construction Waste Management Plan:** A construction waste management plan is developed, posted at the jobsite, and implemented with a goal of recycling or salvaging a minimum of 50 percent (by weight) of construction waste.	6

11.608	RESOURCE EFFICIENT MATERIALS

Item #	Green Building Practices	Points
11.608.1	**Resource-efficient materials.** Products containing fewer materials are used to achieve the same end-use requirements as conventional products, including but not limited to:	9 Max 3 per each material
(2)	engineered wood or engineered steel products	
(3)	roof or floor trusses	

11.611.3	**Universal Design Elements:** Dwelling incorporates on or more of the following universal design elements. Conventional industry tolerances are permitted.	10 Max
(1)	Any no-step entrance into the dwelling which (1) is accessible from a substantially level parking or drop-off area 9no more than 2%) via an accessible path which has no individual change in elevation or other obstruction of more than 1-1/2 inches in height with a pitch not exceeding 1 in 12 and (2) provides a minimum 32-inch wide clearance into the dwelling.	3
(2)	Minimum 36-inch wide accessible route from the no-step entrance into at least one visiting room in the dwelling and into at least one full or half bathroom which has a minimum 32 inch clear door width and a 30-inch by 48-inch clear area inside the bathroom outside the door swing.	3
(3)	Minimum 36-inch wide accessible route from the no-step entrance into at least one bedroom which has a minimum 32 inch clear door width.	3
(4)	Blocking or equivalent installed in the accessible bathroom walls for future installation of grab bars at water closet and bathing fixture, if applicable.	1

11.611.4	**Modular Building Dimensions.** Frame structures or structures made with modular units are designed on 16- or 24-inch dimensions.	2

11.611.5	Use structural vigas, beams, or posts (from less than 300 miles away) (does not apply to decorative vigas) **(1 point per installed 10 linear feet)**	10 Max

11.611.6	Structural insulated panels (SIPS) used for the exterior:	
(1)	Walls	5
(2)	Roof	5

11.611.7	Drainage from canales is done in accordance with all of the following:	5
(1)	Waterproof the foundation behind the splash area and extending 3 feet in both directions.	
(2)	Install an impermeable liner in splash area under canale.	
(3)	Liner or other collector guides water away from structure sloping a minimum of 6 inches over 6 feet for a minimum of 6 feet away from structure.	

11.701	**MINIMUM ENERGY EFFICIENCY REQUIREMENTS**	
11.701.4.3	**Insulation and air sealing,**	
11.701.4.3.1	**Building Thermal Envelope.** The building thermal envelope exposed or created during the remodel is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film or solid material:	Mandatory
(a)	All joints, seams and penetrations.	
(b)	Site-built windows, doors and skylights.	
(c)	Openings between window and door assemblies and their respective jambs and framing.	
(d)	Utility penetrations.	
(e)	Dropped ceiling or chases adjacent to the thermal envelope.	

Item #	Green Building Practices		Points
(f)	Knee walls.		
(g)	Walls and ceilings separating a garage from conditioned spaces.		
(h)	Behind tubs and showers on exterior walls.		
(i)	Common walls between dwelling units.		
(j)	Attic access openings.		
(k)	Rim joist junction.		
(l)	Other sources of infiltration.		
11.701.4.3.2	**Air Sealing and insulation.** Grade 3 insulation installation is not permitted. The compliance of the building envelope tightness and insulation installation is demonstrated in accordance with Section 11.701.4.3.2(1) or 11.701.4.3.2(2).		Mandatory
(1)	**Testing Option:** Building envelope tightness and insulation installation is considered acceptable when air leakage is less than seven air changes per hour (ACH) when tested with a blower door at a pressure of 33.5 psf (50 Pa). Testing is conducted after rough-in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances. Testing is conducted under the following conditions:		
(a)	Exterior windows and doors, fireplace and stove doors are closed, but not sealed;		
(b)	Dampers are closed, but not sealed, including exhaust, intake, makeup air, backdraft, and flue dampers;		
(c)	Interior doors are open;		
(d)	Exterior openings for continuous ventilation systems and heat recovery ventilators are closed and sealed;		
(e)	Heating and cooling system(s) is turned off;		
(f)	HVAC duct terminations are not sealed; and		
(g)	Supply and return registers are not sealed.		
(2)	**Visual inspection option.** Building envelope tightness and insulation installation are considered acceptable when the items listed in Table 11.701.4.3.2(2) applicable to the method of construction and exposed and visible during the remodel, are field verified by an approved third party and a report verifying compliance is provided to the City's Inspection Division.		
	Table 11.701.4.3.2(2) **Air Barrier and Insulation Inspection Component Criteria**		
	Component	**Criteria**	
	Air barrier and thermal barrier	• Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier.	
		• Breaks or joints in the air barrier are filled or repaired.	
		• Air-permeable insulation is not used as a sealing material.	
		• Air-permeable insulation is not installed with an air barrier.	
	Ceiling/Attic	• Air barrier in dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.	
		• Attic access (except unvented attic), knee wall door, or dropdown stair is sealed.	
	Exterior Walls	• Corners and headers are insulated.	
		• Junction of foundation and sill plate is sealed.	
	Windows and doors	• Space between windows/door jambs is sealed.	

Item #	Green Building Practices		Points
	Rim joints	• Rim joists are insulated and include an air barrier.	
	Floors (including above-garage and cantilevered floors)	• Insulation is installed to maintain permanent contact with underside of subfloor decking.	
		• Air barrier is installed at any exposed edge of insulation.	
	Crawlspace walls	• Where installed, insulation is permanently attached to walls.	
		• Exposed earth in unvented crawlspaces is covered with Class I vapor retarder with overlapping joints taped.	
	Shafts, penetrations	• Duct shafts, flue shafts, and utility penetrations, opening to the exterior or an unconditioned space are sealed.	
	Narrow cavities	• Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulations.	
	Garage separation	• Air sealing is provided between the garage and conditioned spaces.	
	Recessed lighting	• Recessed light fixtures not installed in the conditioned space are air tight, IC rated, and sealed to drywall.	
	Plumbing and wiring	• Insulation is placed between the outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.	
	Shower/tub adjacent to exterior wall	• Showers and tubs adjacent to exterior walls have insulation and an air barrier separation from the exterior.	
	Electrical/phone box in exterior walls	• Air barrier extends behind boxes or air sealed-type boxes are installed.	
	Common wall	• Air barrier is installed in common walls between dwelling units.	
	HVAC register boots	• HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.	
	Fireplace	• Fireplace walls include an air barrier.	
11.701.4.3.3	**Fenestration air leakage.** Newly installed windows, skylights and sliding glass doors have an air filtration rate of no more than 0.3 cfm per square foot (1.5 L/s/m^2), and swinging doors no more than 0.5 cfm per square foot (2.6 L/s/m^2), when tested in accordance with NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and tested and labeled. This practice does not apply to site-build windows, skylights and doors.		Mandatory
11.701.4.3.4	**Recessed lighting.** Newly installed recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires are IC-rated and labeled as meeting ASTM E 283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All recessed luminaires are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling		Mandatory
11.701.4.4	**High-efficiency lighting.** A minimum of 50 percent of the newly installed hard-wired lighting fixtures, or the bulbs in those fixtures, qualify as high efficacy or equivalent.		Mandatory
11.701.4.5	**Boiler supply piping.** Boiler supply piping in unconditioned space that is accessible during the remodel is insulated.		Mandatory

Item #	Green Building Practices	Points
11.901	**POLLUTANT SOURCE CONTROL**	
11.901.0	**Intent.** Pollution sources are controlled	
11.901.1	**Space and water heating options**	
11.901.1.1	Natural draft furnace, boilers, or water heaters are not located in conditioned spaces, including conditioned crawlspaces, unless located in a mechanical room that has an outdoor air source and is sealed an insulated to separate it from the conditioned space(s). **(points are awarded only for buildings that use natural draft combustion space or water heating equipment.)**	5
11.901.1.2	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.	5
11.901.1.3	The following combustion space heating and water heating equipment is installed within conditioned space:	
(1)	all furnaces or boilers	
(a)	power vent furnace(s) or boiler(s)	3
(b)	direct vent (sealed combustion) furnace(s) or boiler(s)	5
(2)	all water heaters	
(a)	power vent water heater(s)	3
(b)	direct vent (sealed combustion) water heater(s)	5
11.901.1.4	Newly installed gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the NFPA 54,ICC IFG, or the applicable local gas appliance installation code. Gas-fired fireplaces and direct heating equipment are vented to the outdoors.	Mandatory
11.901.1.6	The following electric equipment is installed:	
(1)	Heat pump air handler in unconditioned space	2
(2)	Heat pump air handler in conditioned space	5
11.901.2	**Solid fuel-burning appliances**	
11.901.2.1	Newly installed solid fuel-burning fireplaces, inserts, stoves and heaters are local code compliant and are in accordance with the following requirements:	Mandatory
(1)	Site-built masonry wood-burning fireplaces are equipped with outside combustion air and a means of sealing the flue and the combustion air outlets to minimize interior air (heat) loss when not in operation.	
(2)	Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified.	
(3)	Wood stove and fireplace inserts, as defined in UL 1482 Section 3.8, are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington WAC 173-433-100(3).	
(4)	Pellet (biomass) stoves and furnaces are in accordance with the requirements of ASTM E 1509 or are EPA certified.	
(5)	Masonry heaters are in accordance with the definitions in ASTM E1602 and ICC IBC, Section 2112.1.	
(6)	Removal of or rendering unusable an existing fireplace or fuel burning appliance that is not in accordance with 11.901.2.1 or replacement of each fireplace or appliance that is not in accordance with 11.901.2.1 with a compliant appliance. (Not Mandatory)	7

Item #	Green Building Practices	Points
11.901.3	**Garages.** Garages are in accordance with the following:	
(1)	Attached garage	
(c)	For one- and two-family dwelling units, a 100 cfm (47 L/s) or greater ducted, or 70 cfm (33 L/s) or greater unducted wall exhaust fan is installed and vented to the outdoors, designed and installed for continuous operation, or has controls (e.g., motion detectors, pressure switches) that activate operation for a minimum of 1 hour when either human passage door or roll-up automatic doors are operated. For ducted exhaust fans, the fan airflow rating and duct sizing are in accordance with Appendix A.	8
(2)	A carport is installed, or a detached garage is installed.	10
11.901.12	**Carbon monoxide (CO) alarms.** A carbon monoxide (CO) alarm is installed in a central location outside of each separate sleeping area in the immediate vicinity of the bedrooms. The CO alarm(s) is located in accordance with NFPA 720 and where there is existing electrical lines accessible is hard-wired with a battery back-up. The alarm device(s) is certified by a third-party for conformance to either CSA 6.19 or UL 2034. At least one of the CO alarms is capable of detecting CO concentrations as low as 9 ppm and includes a visible display. **Exception: No CO alarms are required when all three of the following conditions are true: 1. The is no attached garage; 2. There are no gas-fired applianes within the conditioned space and; 3. the are no solid fuel burning applicances in the home, including fireplaces.**	Mandatory
11.902	**POLLUTANT CONTROL**	
11.902.0	**Intent.** Pollutants generated in the building are controlled.	
11.902.1	**Spot ventilation.**	
11.902.1.1	Spot ventilation is in accordance with the following:	
(1)	Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm (23.6 L/s) for intermittent operation or 20 cfm (9.4 L/s) for continuous operation in bathrooms. **(Points are awarded only if a window complying with IRC Section R303.3 is provided in addition to mechanical ventilation.)**	Mandatory 1
(3)	Kitchen exhaust units and/or range hoods are ducted to the outdoors and have a minimum ventilation rate of 100 cfm (47.2 L/s) for intermittent operation or 25 cfm (11.8 L/s) for continuous operation.	8
11.902.1.2	Bathroom and/or laundry exhaust fan is provided with an automatic timer, motion sensor, and/or humidistat:	11 Max
	for first device	5
	for each additional device	2
11.902.1.4	Exhaust fans are ENERGY STAR, as applicable.	12 Max
(1)	ENERGY STAR, or equivalent, fans **(Points awarded per fan.)**	2
(2)	ENERGY STAR, or equivalent, fans operating at or below 1 sone **(Points awarded per fan.)**	3
11.902.2	**Building ventilation systems**	

Item #	Green Building Practices	Points
11.902.2.1	One of the following whole building ventilation systems is implemented and is in accordance with the specifications in Appendix B.	Mandatory where the maximum air infiltration rate is less than 5 ACH50 or no blower door test is performed
(1)	exhaust or supply fan(s) ready for continuous operation and with appropriately leveled controls OR	3
(2)	balanced exhaust and supply fans with supply intakes located in accordance with the manufacturer's guidelines so as to not introduce polluted air back into the building OR	6
(3)	heat-recovery ventilator OR	7
(4)	energy-recovery ventilator	8
11.902.2.2	Ventilation airflow is tested to achieve the design fan airflow at point of exhaust in accordance with Section 11.902.2.1.	4
11.902.2.3	MERV filters 8 or equivalent or greater are installed on central forced air systems and are accessible. Designer or installer is to verify that the HVAC equipment is able to accommodate the greater pressure drop of MERV 8 filters.	3
11.902.3	**Radon control,** Radon control measures are in accordance with the Santa Fe Residential Green Building Code.	
(1)	All residential buildings shall be tested both prior to, and after, remodeling or an addition and information regarding the potential health risks of radon exposure shall be supplied to the homeowner. Tests shall be consistent with the USEPA measurement protocols from homes or by the American Association of Radon Scienists and Technol,ogists (AARST) "protocols for Radon Measurements in Homes" (MAH September 2005). It is highly recommended that mitigation be performed if the concentrations are at or above 4 pCi/L. It is recommended that remediation be performed if levels are between 2 and 4 pCi/L. NOTE: Some types of construction may increase radon concentrations including actions that reduce natural ventillation or the introduction of sources of radon such as granite. This information is intended as disclosure only for the homeowner to use at their descretion.	Mandatory
(a)	a passive radon system is installed	7
(b)	an active radon system is installed	10
11.902.4	**HVAC system protection.** The following HVAC system protection measure 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.	3 Mandatory
11.902.5	**Central vacuum system.** Central vacuum system is installed and vented to the outside.	3
11.902.6	**Living space contaminants.** The living space is sealed in accordance with Section 11.701.4.3.1 to prevent unwanted contaminants and third-party verified.	Mandatory
11.903	**MOISTURE MANAGEMENT: VAPOR, RAINWATER, PLUMBING, HVAC**	
11.903.0	**Intent.** Moisture and moisture effects are controlled.	

Item #	Green Building Practices	Points
11.903.1	**Plumbing**	
11.903.1.1	Cold water pipes in unconditioned spaces are insulated to a minimum of R-4 with pipe insulation or other covering that adequately prevents condensation.	**2**
11.903.1.2	Plumbing is not installed in unconditioned spaces such as garages, attics, basements or crawl spaces.	**5**
11.903.2	**Duct insulation.** Ducts are in accordance with one of the following:	
(1)	All HVAC ducts, plenums, and trunks are in conditioned space.	**1**
(2)	All HVAC ducts, plenums, and trunks are in conditioned space. All HVAC ducts are insulated to a minimum of R4.	**3**
11.1001	**BUILDING OWNERS' MANUAL**	
11.1001.0	**Intent.** Information on the building's use, maintenance, and green components is	
11.1001.1	A building owner's manual is provided that includes the following, as available and applicable.	1 9 Max
	(Points awarded per two items. Points awarded for	
	both mandatory and non-mandatory items.)	
(1)	A green building program certificate or completion document	Mandatory
(2)	List of green building features (can include the Green Building Code checklist).	Mandatory
(3)	Product manufacturer's manuals or product data sheet for newly installed major equipment, fixtures, and appliances, including any alternative energy systems. If product data sheet is in the building owner's manual, manufacturer's manual may be attached to the appliance in lieu of inclusion in the building owner's manual.	Mandatory
(4)	Maintenance checklist.	
(5)	Information on local recycling programs.	
(6)	Information on available local utility or other energy provider programs that purchase a portion of energy from renewable energy providers.	
(7)	Explanation of the benefits of using energy-efficient lighting systems (e.g., compact fluorescent light bulbs, light emitting diode (LED)) in high-usage areas.	
(8)	A list of practices to conserve water and energy.	
(9)	Local public transportation options.	
(10)	A diagram showing the location of safety valves and controls for major building systems.	Mandatory
(11)	Where frost-protected shallow foundations are used, owner is informed of precautions including:	
(a)	instructions to not remove or damage insulation when modifying landscaping.	
(b)	providing heat to the building as required by the ICC IRC or UMC	
(c)	keeping base materials beneath and around the building free from moisture caused by broken water pipes or other water sources.	
(12)	A list of local service providers that offer regularly scheduled service and maintenance contracts to ensure proper performance of equipment and the structure (e.g., HVAC, water-heating equipment, sealants, caulks, gutter and downspout system, shower and/or tub surrounds, irrigation system).	
(13)	A photo record of framing with the utilities installed. Photos are taken prior to installing insulation, clearly labeled, and included as part of the building owner's manual.	
(14)	List of common hazardous materials often used around the building and instructions for proper handling and disposal of these materials.	
(15)	Information on organic pest control, fertilizers, deicers, and cleaning products.	

Item #	Green Building Practices	Points
(16)	Information on native landscape materials and/or those that have low-water requirements.	
(17)	Information on methods of maintaining the building's relative humidity in the range of 30 percent to 60 percent.	
(18)	Instructions for inspecting the building for termite infestation.	
(19)	Instructions for maintaining gutters and downspouts and importance of diverting water a minimum of 5 feet away from foundation.	
(20)	A narrative detailing the importance of maintenance and operation in retaining the attributes of a green-built building.	
(21)	Where stormwater management measures are installed on the lot, information on the location, purpose, and upkeep of these measures.	
(22)	For buildings originally built before 1978, the EPA publications "Reducing Lead Hazards When Remodeling Your Home" and "Asbestos in Your Home: A Homeowner's Guide".	
(23)	Information regarding energy efficient window treatments	
(24)	Information about protecting the home from fire danger	Mandatory
(25)	Instructions for maintaining solar systems employed in the home (only available if solar systems are employed in the home)	Mandatory
(26)	Provide homeowner with information about mulching and composting	
(27)	Provide information about participating in a clean energy program (i.e. purchase energy from PNM Sky Blue).	
(28)	Provide information about about water conservation practices and City incentives	Mandatory

11.1002	**Training of Building Owners on Operation and Maintenance**	

11.1002.1	**Training of building owners.**	
	Building owners are familiarized with the role of occupants in achieving green goals. On-site training is provided to the responsible party(ies) regarding newly installed equipment operation and maintenance, control systems, and occupant actions that will improve the environmental performance of the building. These include:	Mandatory
(1)	HVAC filters or boiler maintenance	
(2)	thermostat operation and programming	
(3)	lighting controls	
(4)	appliances operation	
(5)	water heating settings and hot water use	
(6)	fan controls	
(7)	recycling practices	
(8)	the irrigation system	
(9)	catchment system maintenance	
(10)	all other equipment	

1004	**Innovative Practices**

1004.2	Translate homeowner documents into Spanish and make both available to homeowner	6

Chapter 12
REMODELING OF FUNCTIONAL AREAS AND SMALL ADDITIONS

Item #	Green Building Practices
12.00	**REMODELING OF FUNCTIONAL AREAS**
12.0	**Intent.** This chapter sets forth the mandatory green practices for remodeling functional areas of buildings. The intent of Chapter 12 is to address the most common remodeling projects: complete kitchen, full bathroom, complete basement, or an addition under 400 square feet. Chapter 12 is not intended to be used for rating minor alterations.
12.305.4	**Criteria for remodeling functional areas of buildings**
13.305.4.1	**Applicability.** The provisions of Section 305.4 shall apply to remodeling of one or more of the following functional areas of the existing building as follows:
1.	Addition, kitchen, bathroom, or basement in buildings other than multi-unit buildings.
2.	Kitchen or bathroom of an individual dwelling unit in a multi-unit building
12.305.4.1.1	**Additions.** The total above-grade conditioned area added during a remodel that are less than 400 Conditioned square feet.
12.305.4.2	**Compliant.** Projects that meet all applicable requirements of Chapter 12 for that functional area shall be designated as *compliant.*
12.305.4.3	**Designation.** The designation achieved under Section 305.4 applies only to the specific functional area of the existing building. The existing building may have more than one *compliant* functional area.
12.305.4.4	**Additions.** A bathroom(s), kitchen, or finished basement included in an addition shall comply with all criteria specifically applicable to those functional areas in accordance with the provisions of Chapter 12.
305.4.5	**Mandatory.** Projects shall satisfy all applicable practices designated as mandatory in Chapter 12.
12.305.4.6	**Existing attributes.** The attributes of the existing building that were in compliance with the applicable provisions of Chapter 12 prior to the remodel and remain in compliance after the remodel shall be eligible for contributing to demonstration of compliance under Section 305.4.
12.701.4.3.1	**Building Thermal Envelope.** The portions of the building thermal envelope that are exposed or created during the remodel is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film or solid material:
(a)	All joints, seams and penetrations.
(b)	Site-built windows, doors and skylights.

(c)	Openings between window and door assemblies and their respective jambs and framing.
(d)	Utility penetrations.
(e)	Dropped ceiling or chases adjacent to the thermal envelope.
(f)	Knee walls.
(g)	Walls and ceilings separating a garage from conditioned spaces.
(h)	Behind tubs and showers on exterior walls.
(i)	Common walls between dwelling units.
(j)	Attic access openings.
(k)	Rim joist junction.
(l)	Other sources of infiltration.

12.701.4.3.2 **Air Sealing and insulation.** Grade 3 insulation installation is not permitted for newly installed insulation. The compliance of the portions of the building envelope that are exposed or created during the remodel for air tightness and insulation installation are considered acceptable when the items listed in Table 1`2.1.701.4.3.2(2) applicable method of construction are field verified.

Table 12.1.701.4.3.2(2)

Air Barrier and Insulation Inspection Component Criteria

Component	Criteria
Air barrier and thermal barrier	• Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier.
	• Breaks or joints in the air barrier are filled or repaired.
	• Air-permeable insulation is not used as a sealing material.
	• Air-permeable insulation is not installed with an air barrier.
Ceiling/Attic	• Air barrier in dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.
	• Attic access (except unvented attic), knee wall door, or dropdown stair is sealed.
Exterior Walls	• Corners and headers are insulated.
	• Junction of foundation and sill plate is sealed.
Windows and doors	• Space between windows/door jambs is sealed.
Rim joints	• Rim joists are insulated and include an air barrier.
Floors (including above-garage and cantilevered floors)	• Insulation is installed to maintain permanent contact with underside of subfloor decking.
	• Air barrier is installed at any exposed edge of insulation.
Crawlspace walls	• Where installed, insulation is permanently attached to walls.
	• Exposed earth in unvented crawlspaces is covered with Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	• Duct shafts, flue shafts, and utility penetrations, opening to the exterior or an unconditioned space are sealed.

	Narrow cavities	• Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulations.
	Garage separation	• Air sealing is provided between the garage and conditioned spaces.
	Recessed lighting	• Recessed light fixtures not installed in the conditioned space are air tight, IC rated, and sealed to drywall.
	Plumbing and wiring	• Insulation is placed between the outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
	Shower/tub adjacent to exterior wall	• Showers and tubs adjacent to exterior walls have insulation and an air barrier separation from the exterior.
	Electrical/phone box in exterior walls	• Air barrier extends behind boxes or air sealed-type boxes are installed.
	Common wall	• Air barrier is installed in common walls between dwelling units.
	HVAC register boots	• HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.
	Fireplace	• Fireplace walls include an air barrier.

12.1.701.4.3.4	**Recessed lighting.** Newly installed recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires are IC-rated and labeled as meeting ASTM E 283 when tested at 1.57 psf (75 Pa) pressure differential with no more than 2.0 cfm (0.944 L/s) of air movement from the conditioned space to the ceiling cavity. All luminairs are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering.

12.1.701.4.4	**High-efficiency lighting.** A minimum of 50 percent of the hard-wired lighting fixtures and bulbs in the remodeled portion of the building, or the bulbs in those fixtures, qualify as high efficacy or equivalent.

12.1.701.4.5	**Boiler supply piping.** Newly installed boiler supply piping in unconditioned space that is accessible during the remodel is insulated.

12.1.703.5.3	**Appliances.** All newly installed major appliances in the remodeled portion of the building are ENERGY STAR or equivalent.

12.1.901.1.4	**Gas-fired equipment.** Newly installed gas-fired fireplaces and direct heating equipment is listed and is installed in accordance with the NMAC. Gas-fired fireplaces and direct heating equipment are vented to the outdoors.

12.1.901.2.1	**Solid fuel-burning appliances.** Newly installed solid fuel-burning fireplaces, inserts, stoves, and heaters are code compliant and are in accordance with the following requirements:

(1)	Site-built masonry wood-burning fireplaces are equipped with outside combustion air and a means of sealing the flue and the combustion air outlets to minimize interior air (heat) loss when not in operation.
(2)	Factory-built, wood-burning fireplaces are in accordance with the certification requirements of UL 127 and are EPA certified.
(3)	Wood stove and fireplace inserts, as defined in UL 1482 Section 3.8, are in accordance with the certification requirements of UL 1482 and are in accordance with the emission requirements of the EPA Certification and the State of Washington WAC 173-433-100(3).
	Pellet (biomass) stoves and furnaces are in accordance with the requirements of ASTM E1509 or are EPA certified.
	Masonry heaters are in accordance with the definitions in ASTM E1602 and ICC IBC, Section 2112.1.

12.1.902.4	**HVAC System Protection.** One of the following HBAC 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.

12.1.903.2	**Duct insulation.** All newly installed, exposed, or modified All HVAC ducts, plenums, and trunks in unconditioned attics, basements, and crawl spaces are insulated to a minimum of R-6. Outdoor air supplies to ventilation systems are insulated to a minimum of R-6.

12.2	**KITCHEN REMODELS**

12.2.0	**Applicability.** In addition to the practices listed in Section 12.1, the following practices

12.2.607.1	**Recycling.** Recycling by the occupants is facilitated by means of a built-in collection space in or near the kitchen and an aggregation/collection space in a garage, covered outdoor space, or other area for recycling containers.

12.3	**BATHROOM REMODELS**

12.3.611.3	**Universal design elements.** Where existing stud walls are exposed and where new walls are constructed, blocking or equivalent is installed to accommodate the future installation of grab bars at water closet(s) and bathing fixtures(s).

12.3.801.4	**Showerheads.** The total maximum combined flow rate of all newly installed showerheads that are controlled by a single valve at any point in time in a shower compartment is 1.6 to less than 2.5 gpm. Maximum of two valves are installed per shower compartment. The flow rate is tested at 80 psi (552 kPa) in accordance with ASME A112.18.1. Showerheads are served by an automatic compensating valve that complies with ASSE 1016 or ASME A112.18.1 and specifically designed to provide thermal shock and scald protection at the flow rate of the showerhead.

12.3.801.5.1	**Faucets.** Newly installed lavatory faucets have a maximum flow rate of 1.5 gpm (5.68 L/m) or less when tested at 60 psi (414 kPa) in accordance with ASME A112.18.1.

12.3.801.6	**Water Closets.** All newly installed water closets have an effective flush volume of 1.28 gallons (4.85 L) or less when tested in accordance with ASME A112.19.2 or ASME A112.19.14, as applicable, and is in accordance with EPA WaterSense Tank-Type Toilets.

12.4 BASEMENT REMODELS

12.4.0	**Applicability.** In addition to the practices listed in Section 12.1, the following practices are mandatory for all basement remodels.

12.4.2	**Kitchen.** When the basement remodel includes a kitchen, the remodel shall also comply with the practices in Section 12.2.

12.4.3	**Bathroom.** When the basement remodel includes a bathroom, the remodel shall also comply with the practices in Section 12.3.

12.4.4	**Radon control.** Passive or active radon control system is installed in accordance with ICC IRC Appendix F unless a radon test is performed demonstrating that the level is less than the USEPA mitigation action level of 4 pCi/L. (The USEPA recommends, but does not require, mitigation between 2 and 4 pCi/L) or unless it is structurally infeasble.

12.5 ADDITIONS

12.5.0	**Applicability.** In addition to the practices listed in Section 12.1, the following practices are mandatory for all addition remodels.

12.5.1	**Kitchen.** When the addition includes a kitchen, the remodel shall also comply with the practices in Section 12.2.

12.5.2	**Bathroom.** When the addition includes a bathroom, the remodel shall also comply with the practices in Section 12.3.

12.5.602.1.9	**Flashing.** Flashing is provided for the addition and for the intersection where the addition joins the existing building, to minimize water entry into wall and roof assemblies and to direct water to exterior surfaces or exterior water-resistive barriers for drainage. Flashing details are provided in the construction documents and are in accordance with the fenestration manufacturer's instructions, the flashing manufacturer's instructions, or as detailed by a registered design professional. Flashing is installed at all of the following locations, as applicable:
(a)	around exterior fenestrations, skylights and doors
(b)	at roof valleys
(c)	at all building-to-deck, -balcony, -porch, and -stair intersections
(d)	at roof-to-wall intersections, at roof-to-chimney intersections, at wall-to-chimney intersections, and at parapets.
(e)	at ends of an under masonry, wood, or metal copings and sills
(f)	above projecting wood trim
(g)	at built-in roof gutters and canales, and
(f)	drip edge is installed at eaves and rake edges.

12.5.602.1.14	**Ice barrier.** In areas where there has been a history of ice forming along the eaves causing backup of water, an ice barrier is installed on the addition in accordance with the ICC IRC at roof eaves of pitched roofs and extends a minimum of 24 inches (610 mm) inside the exterior wall line of the building.

12.5.602.1.15	**Architectural features.** New architectural features that increase the potential for water intrusion are avoided.
(1)	No roof configurations that create horizontal valleys in roof designs.
(2)	No recessed windows and architectural features that trap water on horizontal surfaces.
(3)	All horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application.

12.5.902.3	**Radon control.** Passive or active radon control system is installed in accordance with ICC IRC Appendix F unless a radon test is performed in the existing house demonstrating that the level is less than the USEPA mitigation action level of 4 pCi/L. (The USEPA recommends, but does not require, mitigation between 2 and 4 pCi/L).

APPENDIX B

WHOLE BUILDING VENTILATION SYSTEM SPECIFICATIONS

B100 SCOPE AND APPLICABILITY

B101.1 Applicability of Appendix B. Appendix B is part of this standard.

B101.2 Scope. The provisions contained in Appendix B provide the specifications necessary for complying with Section 902.2.1 for the installation of whole building ventilation systems. To receive points for implementing Practice 902.2.1, the chosen whole building ventilation system is to be in accordance with the applicable specifications of Appendix B.

B191.3 Acknowledgment. The text of Appendix B, Section B200 and related Tables are extracted from ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.) Standard 62.2-2010 *Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings,* Section 4, and is used with the permission of ASHRAE. The referenced Section and Table numbers within the extracted text are modified to be applicable to Appendix B of this Standard. "*" indicates added reference to ICC or ASHREA 62.2 to provide clarity.

B200 WHOLE-BUILDING VENTILATION

B201.1 Ventilation Rate. A mechanical exhaust system, supply system, or other combination thereof shall be installed for each dwelling unit to provide whole-building ventilation with outdoor air each hour at no less than the rate specified in Tables B201.1a and B201.1b or, equivalently, Equations B201.1a and B201.1b, based on the floor area of the conditioned space and number of bedrooms.

B201.1.2 Alternative Ventilation. Other methods may be used to provide the required ventilation rates (of Tables B201.1a and B201.1b) when approved by a licensed design professional.

Equation B201.1a

$$Q_{fan} = 0.01A_{floor} + 7.5(N_{br} + 1)$$

where

Q_{fan} = fan flow rate, cfm

A_{floor} = floor area, ft^2

N_{br} = number of bedrooms; not to be less than one

Equation B201.1b

$$Q_{fan} = 0.05A_{floor} + 3.5(N_{br} + 1)$$

where

Q_{fan} = fan flow rate, L/s

A_{floor} = floor area, m^2

N_{br} = number of bedrooms; not to be less than one

TABLE B201.1a (I-P)
Ventilation Air Requirements, cfm

Floor Area	Bedrooms				
(ft^2)	0-1	2-3	4-5	6-7	>7
<1500	30	45	60	75	90
1501-3000	45	60	75	90	105
3001-4500	60	75	90	105	120

4501-6000	75	90	105	120	135
6001-7500	90	105	120	135	150
>7500	105	120	135	150	165

TABLE B201.1b (SI)
Ventilation Air Requirements, L/s

Floor Area	**Bedrooms**				
(m^2)	0-1	2-3	4-5	6-7	>7
<139	14	21	28	35	42
139.1-279	21	28	35	42	50
279.1-418	28	35	42	50	57
418.1-557	35	42	50	57	64
557.1-697	42	50	57	64	71
>697	50	57	64	71	78

B201.2 System Type. The whole-house ventilation system shall consist of one or more supply or exhaust fans and associated ducts and controls. Local exhaust fans shall be permitted to be part of a mechanical exhaust system. Outdoor air ducts connected to the return side of an air handler shall be permitted as supply ventilation if manufacturers' requirements for return air temperature are met. See ASHRAE 62.2*, Appendix B for guidance on selection of methods.

B201.3 Control and Operation. The "fan on" switch on a heating or air-conditioning system shall be permitted as an operational control for systems introducing ventilation air through a duct to the return side of an HVAC system. Readily accessible override control must be provided to the occupant. Local exhaust fan switches and "fan on" switches shall be permitted as override controls. Controls, including the 'fan-on" switch of a conditioning system, must be appropriately labeled.

Exception: An intermittently operating, whole-house mechanical ventilation system may be used if the ventilation rate is adjusted according to the exemption to Section B201.4. The system must be designed so that it can operate automatically based on a timer. The intermittent mechanical ventilation system must operate at least one hour out of every twelve.

Equation B201.4

$$Q_f = Q_r / (\varepsilon f)$$

where
Q_f = fan flow rate
Q_r = ventilation air requirement (from Table B201.1a or B201.1b)
ε = ventilation effectiveness (from Table B201.1)
f = fractional on time
if the system runs at least every three hours, 1.0 can be used as the ventilation effectiveness. (See *ASHRAE 62.2**, Appendix B for an example of this calculation.)

TABLE B201.4
Ventilation Effectiveness for Intermittent Fans

Daily Fractional On-Time, *f*	**Ventilation Effectiveness, ε**
$f \le 35\%$	0.33
$35\% \le f < 60\%$	0.50
$60\% \le f < 80\%$	0.75
$80\% \le f$	1.0