APPENDIX AT [RE]

SOLAR-READY PROVISIONS— DETACHED ONE- AND TWO-FAMILY DWELLINGS AND TOWNHOUSES

[W] ((~~*The provisions contained in this appendix are not mandatory unless specifically referenced in the adopting ordinance.*~~))

User note:

About this appendix: *Harnessing the heat or radiation from the sun's rays is a method to reduce the energy consumption of a building. Although Appendix AT does not require solar systems to be installed for a building, it does require the space(s) for installing such systems, providing pathways for connections and requiring adequate structural capacity of roof systems to support solar systems.*

Section numbers in parenthesis are those in Appendix RB of the residential provisions of the International Energy Conservation Code®.

SECTION AT101 (RB101) SCOPE

[S] AT101.1 (RB101.1) General. ((~~These provisions shall be applicable for new construction where solar-ready provisions are required.~~)) New one- and two-family dwellings shall be provided with a *solar-ready zone* of not less than 300 square feet. Townhouses shall be provided with a *solar-ready zone* of not less than 150 square feet for each dwelling unit.

Exception: The following do not require *solar-ready zones*:

1. One- and two-family dwellings with less than 600 square feet of qualifying roof area conforming to the requirements of Section AT101.1.1.
2. Individual units within townhouse buildings that have less than 300 square feet of qualifying roof area per unit conforming to the requirements of Section AT101.1.1.
3. Buildings with permanently installed on-site renewable energy systems.

[S] AT101.1.1 General. Qualifying roof area includes all roof areas other than the following:

1. Roof areas oriented within 45 degrees of true north and having slopes greater than 2:12.
2. Roof areas shaded by existing landforms, structures or trees for more than 70 percent of daylight hours annually. Shading from future tree growth need not be considered.
3. Roof areas consisting of skylights, occupied decks, or planted areas.
4. Access or set-back areas required by this code or the applicable provisions of the *International Fire Code*.

SECTION AT102 (RB102) GENERAL DEFINITION

AT102.1 (RB102.1) General. The following term shall, for the purpose of this appendix, have the meaning shown herein.

[W] SOLAR-READY ZONE. A section or sections of the roof or building overhang designated and reserved for the future installation of a solar photovoltaic or solar ((~~thermal~~)) water-heating system.

SECTION AT103 (RB103) SOLAR-READY ZONE

[S] AT103.1 (RB103.2) General. ((~~New detached one- and two-family dwellings, and townhouses with not less than 600 square feet (55.74 m^2) of roof area oriented between 110 degrees and 270 degrees of true north, shall comply with Sections AT103.2 through AT103.10.~~)) The solar-ready zone shall comply with Sections AT103.1.1 through AT103.1.3.

((~~**Exceptions:**~~

1. ~~New residential buildings with a permanently installed on-site renewable energy system.~~

2. A building where all areas of the roof that would otherwise meet the requirements of Section AT103 are in full or partial shade for more than 70 percent of daylight hours annually.))

[S] ((AT103.2 (RB103.2) Construction document requirements for solar-ready zone. *Construction documents* shall indicate the solar-ready zone.))

[S] ((AT103.3)) AT103.1.1 (RB103.3) Solar-ready zone area. The ((total)) solar-ready zone ((area shall be not less than 300 square feet (27.87 m^2) exclusive of mandatory access or setback areas as required by the *International Fire Code*)) may be comprised of one single area or of multiple separated areas. ((New townhouses three stories or less in height above *grade plane* and with a total floor area less than or equal to 2,000 square feet (185.8 m^2) per dwelling shall have a solar-ready zone area of not less than 150 square feet (13.94 m^2). The solar-ready zone shall be composed of areas not less than 5 feet (1524 mm) in width and not less than 80 square feet (7.44 m^2) exclusive of access or set-back areas as required by the *International Fire Code*.)) No solar-ready zone shall be less than 5 feet in any dimension nor less than 80 square feet of contiguous area.

[S] ((AT103.4)) AT103.1.2 (RB103.4) Obstructions and shadows. ((Solar-ready zones)) The *solar-ready zone* shall be free from obstructions, including but not limited to vents, chimneys, and roof-mounted equipment. Permanently installed objects adjacent to the *solar-ready zone* shall be located so that they do not cast shadows on the *solar-ready zone* when the sun is directly east, west, or south of the *solar-ready zone* at 45 degrees above the horizon. Such objects include but are not limited to taller portions of the building, parapets, chimneys, antennas, rooftop *equipment*, trees, and roof plantings. Shading from future tree growth need not be considered.

[S] AT103.1.3 Structural support. The supporting structure of the solar-ready zone shall be designed in accordance with Section R324.4, using a minimum of 4 pounds per square foot as an assumed photovoltaic panel weight.

[S] ((AT103.5 (RB103.5) Shading. The solar-ready zone shall be set back from any existing or new, permanently affixed object on the building or site that is located south, east or west of the solar zone a distance not less than two times the object's height above the nearest point on the roof surface. Such objects include, but are not limited to, taller portions of the building itself, parapets, chimneys, antennas, signage, rooftop equipment, trees and roof plantings.))

[S] ((AT103.6 (RB103.6) Capped roof penetration sleeve. A capped roof penetration sleeve shall be provided adjacent to a solar-ready zone located on a roof slope of not greater than 1 unit vertical in 12 units horizontal (8-percent slope). The capped roof penetration sleeve shall be sized to accommodate the future photovoltaic system conduit, but shall have an inside diameter of not less than 1-1/4 inches (32 mm).))

[S] ((AT103.7 (RB103.7) Roof load documentation. The structural design loads for roof dead load and roof *live load* shall be clearly indicated on the *construction documents*.))

[S] ((AT103.8 (RB103.8) Interconnection pathway. *Construction documents* shall indicate pathways for routing of conduit or plumbing from the solar-ready zone to the electrical service panel or service hot water system.))

[S] ((AT103.9)) AT103.2 (RB103.9) Electrical service reserved space. The main electrical service panel shall have a reserved space to allow installation of a dual pole circuit breaker for future solar electric installation and shall be *labeled* "For Future Solar Electric." ((The reserved space shall be positioned at the opposite (load) end from the input feeder location or main circuit location.))

[S] ((AT103.10)) AT103.3 (RB103.10) ((Construction documentation)) Posted certificate. A permanent certificate, indicating the boundaries and structural provisions of the solar-ready zone. ((and other requirements of this section,)) shall be posted near the electrical distribution panel, water heater or other conspicuous location. ((by the builder or *registered design professional*.))

[S] AT103.4 Construction documents. *Construction documents* shall indicate the boundaries and the assumed photovoltaic panel weight used for design in Section T103.1.3 for the *solar-ready zone*.