City Hall
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File Number: 09-00953zt **Final Action Date:**

AN ORDINANCE OF THE MIAMI CITY COMMISSION AMENDING ORDINANCE NO. 11000, AS AMENDED, THE ZONING ORDINANCE OF THE CITY OF MIAMI, FLORIDA, TO CREATE SECTION 951 ENTITLED "HEAT ISLAND EFFECT - ROOF" TO ADD SECTIONS THAT PROVIDE FOR ENVIRONMENTALLY RESPONSIBLE CONSTRUCTION OF BUILDING ROOFING SYSTEMS DESIGNED TO DECREASE THE ABSORPTION AND REMITTANCE OF ATMOSPHERIC HEAT IN THE CITY OF MIAMI; CONTAINING A SEVERABILITY CLAUSE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Miami ("City") is committed to reducing elevated temperatures and associated air-quality issues stemming from urban heat island effects; and

WHEREAS, during the past eight (8) years, the City has launched a comprehensive and aggressive environmental program to clean streets, waterways, brownfields, storm drains, and to improve air and water quality; and

WHEREAS, the City Commission has adopted the recommendations of MiPlan, the City's Climate Action Plan, which calls for promotion of green building programs such as the United States Green Building Council ("USGBC") Leadership in Energy and Environmental Design ("LEED") rating system; and

WHEREAS, the USGBC LEED rating system promotes sustainable sites, water conservation, energy efficiency, conservation of materials and resources, and indoor air quality; and

WHEREAS, MiPlan promotes various methods to achieve reduction in energy consumption which is adversely affected by elevated temperatures in the urban-core; and

WHEREAS, heat absorption and remittance from standard roofing materials raises localized temperatures, increases energy consumed to cool buildings and associated green house gas emissions, deteriorates air-quality, and may harm local plant and animal life sensitive to increased temperatures; and

WHEREAS, roofs designed to reduce heat island effect either through enhanced reflective materials (cool roofs) or incorporating vegetation (green roofs) reduce costs and energy consumption associated with building cooling systems, provide habitat for wildlife, and increase the life-cycle of roofs; and

WHEREAS, green roofing systems will not only reduce the absorption and remittance of atmospheric heat, but also decrease stormwater runoff volumes, thereby reducing strain on public storm drains and subsequent discharge of potentially harmful sediment to local water bodies; and

WHEREAS, the Miami Planning Advisory Board, at its meeting held on September 16, 2009,

Item No. P.9, following and advertised public hearing, adopted Resolution No. PAB 09-033, by a vote of seven to zero (7-0), recommending approval as presented; and

WHEREAS, the City Commission after careful consideration of this matter deems it advisable and in the best interest of the general welfare of the City of Miami and its citizens to amend its Zoning Ordinance as hereinafter set forth;

NOW, THEREFORE, BE IT ORDAINED BY THE COMMISSION OF THE CITY OF MIAMI, FLORIDA, AS FOLLOWS:

Section 1. The recitals and findings in the Preamble to this ordinance are adopted by reference and incorporated as if fully set forth in this Section.

Section 2. Article 9 of Ordinance No. 11000, the Zoning Code of the City of Miami, Florida, is amended to create Section 951 entitled "Heat Island Effect - roof" in the following particulars{1}:

"ARTICLE 9. GENERAL AND SUPPLEMENTARY REGULATIONS

* * *

Sec. 951. Heat Island Effect - Roof

951.1 Intent

The requirements of this ordinance are intended to reduce the heat island effect in the City of Miami and to reduce energy consumption and bills for buildings within the City.

951.2 Definitions

Cool roof is a roof that reflects the sun's heat and emits absorbed radiation back into the atmosphere.

Heat island effect is an elevated temperature over an urban area when compared to rural areas, typically caused by the increased presence of dark, heat absorbing materials, such as asphalt and dark roofs, in urban areas.

Solar reflectance is the fraction of solar energy reflected by a material.

951.3 Applicability

The provisions of this ordinance are applicable in all zoning designations throughout the City, except they shall not apply in R1 and R2, to newly constructed buildings and to repair or replacement of greater than 50% by area of existing roofs after the effective date of this ordinance. All repairs or replacement of existing roofing shall be reviewed by the Zoning Department for compliance with this ordinance. The following are exempted from the requirements of this ordinance:

(a) The portion of the roof acting as a substructure for and covered by a rooftop deck, vegetation associated with an extensive or intensive green roof as defined by US Environmental Protection Association, or any area utilized by photovoltaic and solar equipment.

(b) A rooftop deck covering a maximum of 1/3 of the rooftop total gross area.

951.4 Solar reflectance.

All roof exterior surfaces shall have a minimum solar reflectance as specified in Sections 951.5 through 951.7 when (i) tested in accordance with ASTM E903 or ASTM E1918, (ii) tested with a portable reflectometer at near ambient conditions, (iii) labeled by the Cool Roof Rating Council, or (iv) labeled as an Energy Star qualified roof product. Any product that has been rated by the Cool Roof Rating Council or by Energy Star shall display a label verifying the rating of the product.

951.5 Requirements for Low Sloped Roofs

Roofing materials used in roofs with slopes of a rise of zero (0) units in a horizontal length (0:12 pitch) up to and including roofs with slopes of a rise of two (2) units in a horizontal length of 12 units (2:12 units) ("low-sloped") shall meet the following requirements:

(a) Low-sloped roofs constructed as part of a new building shall utilize roofing products that meet or exceed an initial reflectance value of 0.72 or a three-year installed reflectance value of 0.5 as determined by the Cool Roof Rating Council or by Energy Star.

(b) Exception. Where more than 50% of the total gross area of the low-sloped roof is covered with vegetation associated with an extensive or intensive green roof as defined by the US EPA, the remainder of the roof shall have a reflectance value of a minimum of 0.30 and the rooftop deck exception in Section 951.3 applies.

(c) Exception. Ballasted roofs with a minimum of 15 lbs/sq. ft. or ballast over the entire roof surface may have a reflectance value of a minimum of 0.30. For the purposes of this section, "ballast" shall mean river rock aggregate or larger, pavers or other means of weighing down a roofing membrane over a substrate to resist wind uplift.

951.6 Requirements for Steep Sloped Roofs

Roofing materials used in roofs with slopes of a rise greater than two (2) units in a horizontal length (2:12 pitch) ("steep-sloped") shall meet the following requirements:

(a) Steep sloped roofs shall have an initial solar reflectance of 0.15 or greater.

951.7 Requirements for Roofs with Multiple Slopes

Roofs with multiple slopes shall be subject to those requirements applicable to the slope which covers the largest area of the building footprint.

* * *"

Section 3. If any section, part of section, paragraph, clause, phrase or word of this Ordinance is declared invalid, the remaining provisions of this Ordinance shall not be affected.

Section 4. This Ordinance shall become effective thirty (30) days after approval its adoption and signature of the Mayor.{2}

APPROVED AS TO FORM AND CORRECTNESS:

JULIE O. BRU
CITY ATTORNEY

Footnotes:

{1} Words/and or figures stricken through shall be deleted. Underscored words and/or figures shall be added. The remaining provisions are now in effect and remain unchanged. Asterisks indicate omitted and unchanged material.

{2} This Ordinance shall become effective as specified herein unless vetoed by the Mayor within ten days from the date it was passed and adopted. If the Mayor vetoes this Ordinance, it shall become effective immediately upon override of the veto by the City Commission or upon the effective date stated herein, whichever is later.