

ORDINANCE NO. \_\_\_\_\_

**An Ordinance of the City of Plano, Texas, repealing in its entirety, City of Plano Ordinance No. 2004-8-10, codified as Article XVIII, Energy Conservation code, of Chapter 6 of the Code of Ordinances; and adopting the 2009 Edition of the International Energy Conservation Code, with certain additions, deletions and amendments, as the Energy Conservation Code of the city of Plano; and providing a repealer clause, a severability clause, a savings clause, a penalty clause, and an effective date.**

WHEREAS, On August 9, 2004, by Ordinance No. 2004-8-10, the City Council of the City of Plano established an Energy Conservation Code and provided regulations thereunder, and such Ordinances were codified as Article XVIII, Energy Conservation Code, of Chapter 6 of the Code of Ordinances of the City of Plano; and

WHEREAS, October 19, 2010, and November 16, 2010 the Building Standards Commission held public hearings to discuss the adoption of the 2009 Edition of the International Energy Conservation Code, a publication of the International Code Council (I.C.C.), along with the Appendices of such Code, and to receive input from the general public and all persons who may be affected by the proposed adoption; and

WHEREAS, upon recommendation of the Building Standards Commission and upon full review and consideration of all matters attendant and related thereto, the City Council is of the opinion that the 2009 Edition of the International Energy Conservation Code, along with the Appendices of such Code and the local amendments thereto, should be approved and adopted as the Energy Conservation Code of the City of Plano.

**NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PLANO, TEXAS, THAT:**

**Section I.** The following ordinances or sections thereof, all of which are codified as Article XVIII, Energy Conservation Code, of Chapter 6 of the Code or Ordinances of the City of Plano, are hereby repealed in their entirety:

Ordinance No. 2004-8-10, duly passed and approved by the City Council of the City of Plano on August 9, 2004

**Section II.** A new Article XVIII, Energy Conservation Code, of Chapter 6 of the Code of Ordinances of City of Plano is hereby adopted and shall read in its entirety as follows:

**ARTICLE XVIII. ENERGY CONSERVATION CODE**

**DIVISION 1. GENERALLY**

**Sec. 6-684. Penalty.**

Any person, firm or corporation found to be violating any term or provision of this Ordinance, shall be subject to a fine in accordance with Section 1-4(a) of the City Code of Ordinances for each offense. Every day a violation continues shall constitute a separate offense.

**Sec. 6-685 Adopted.**

The 2009 Edition of the International Energy Conservation Code, a publication of the International Code Council (I.C.C.), along with the Appendices of such Code, is hereby adopted and designated as the Energy Conservation Code of the City to the same extent as if such Code were copied verbatim in this Article, subject to deletions, additions, and amendments prescribed in this Article. A copy of the 2009 Edition of the International Energy Conservation Code is on file in the office of the City Secretary.

DIVISION 2. AMENDMENTS

**.Sec. 6-686. Deletions, Additions, Amendments.**

The following deletions, additions, and amendments to the International Energy Conservation Code adopted herein are hereby approved and adopted:

***Chapter 1, Administration***

***Amend Section 101.4.2 Historic Buildings to read as follows:***

**101.4.2 Historic Buildings.** Any building or structure that is listed in the State or National Register of Historic Places; designated as a historic property under local or state designation law or survey; certified as a contributing resource with a National Register listed or locally designated historic district; or with an opinion or certification that the property is eligible to be listed on the National or State Registers of Historic Places either individually or as a contributing building to a historic district by the State Historic Preservation Officer of the Keeper of the National Register of Historic Places, shall comply with all of the provisions of this code.

**Exception:** Whenever a provision or provisions shall invalidate or jeopardize the historical designation or listing, that provision or provisions may be exempted.

***Section 103.1.1; add Section 103.1.1 to read as follows:***

**103.1.1 Alternative compliance.** A building certified by a national, state, or local accredited energy efficiency program and determined by the Energy Systems Laboratory to be in compliance with the energy efficiency requirements of this section may, at the option of the Code Official, be considered in compliance. The United States Environmental Protection Agency's Energy Star Program certification of energy code equivalency shall be considered in compliance.

***Section 202; add the following definition:***

**GLAZING AREA.** Total area of the glazed fenestration measured using the rough opening and including sash, curbing or other framing elements that enclose conditioned space. Glazing area includes the area

of glazed fenestration assemblies in walls bounding conditioned basements. For doors where the daylight opening area is less than 50 percent of the door area, the glazing area is the daylight opening area. For all other doors, the glazing area is the rough opening area for the door including the door and the frame.

*Section 401 GENERAL; change to read as follows:*

**401.1 Scope.** This chapter and Appendix R, The Residential Green Building Standard, applies to Single Family residential buildings.

*Section 401.2, Item #1; change to read as follows:*

1. Sections 402.1 through 402.3, 403.2.1 and 404.1 (prescriptive) and the use of Tables 402.1.1 and 402.1.3 are limited to a maximum *glazing area* of 15% window area to floor area ratio; or
2. *{language unchanged}*

*Section 402.2.12; Add Section 402.2.12 to read as follows:*

**Section 402.2.12 Insulation installed in walls.** Insulation batts installed in walls shall be totally surrounded by an enclosure on all sides consisting of framing lumber, gypsum, sheathing, wood structural panel sheathing or other equivalent material approved by the building official.

*\*Section 405.4.1; add the following sentence to the end of paragraph:*

*RemRate<sup>TM</sup>, Energy Gauge<sup>TM</sup>, and IC3 are deemed acceptable performance simulation programs.*

*Add Appendix R, Residential Green Building to read as follows:*

## **APPENDIX R Residential Green Building Standard**

### **GENERAL**

**Section R101. Purpose.** The purpose of this appendix is to regulate the design, construction and selection of effective conservation of energy efficiency, conservation of water, and indoor air quality for new single family residential buildings by establishing a green building standard 15% above energy code requirement.

### **DEFINITIONS**

**Section R102. Definitions.** For the purposes of this appendix, the terms, phrases and words listed in this section and their derivatives shall have the indicated meanings.

**A/C CONDENSER** – The outside fan unit of the air conditioning system designed to liquefy refrigerant vapor by removal of heat from freon gas, turning gas back to liquid and pumping the liquid back to the coil in a furnace.

**AFUE - Annual Fuel Utilization Efficiency.** The AFUE number represents how efficiently a furnace converts fuel to energy. The higher the AFUE, the greater the efficiency. The U.S. government's established minimum AFUE rating for a furnace is 78 percent.

**DUCT** – A tube or conduit utilized for conveying air. Air passages of self-contained systems are not to be construed as air ducts.

**ENERGY SYSTEMS LABORATORY - (ESL)** is a division of the Texas Engineering Experiment Station and a member of the Texas A&M University System. Senate Bill 5, in 2001, assigned ESL an important role in the implementation of state energy standards and assistance with calculation of emissions reduction benefits from energy efficiency and renewable energy initiative.

**GREEN BUILDING** - Structures and their surrounding landscapes designed, constructed and maintained to decrease energy and water usage and costs, to improve the efficiency and longevity of building systems and to decrease the burdens imposed on the environment and public health.

**GREEN BUILT NORTH TEXAS** - An initiative of the Homebuilders Association of Greater Dallas that provides climate-specific guidelines and verification systems for residential and multifamily green buildings which can be found at [www.greenbuiltnorthtexas.com](http://www.greenbuiltnorthtexas.com).

**GREEN BUILT NORTH TEXAS-CERTIFIABLE** - A proposed project that is not required to be registered with the Home Builders Association of Greater Dallas, but is planned, designed and constructed to meet or exceed a certified rating using version 2.0 of the Green Built North Texas rating system.

**HERS – Home Energy Rating System.** A home energy rating is an analysis of a home's projected energy efficiency in comparison to a 'reference home' based on the 2006 International Energy Conservation Code. A home energy rating involves both an analysis of a home's construction plans, as well as onsite inspections and testing by a certified Home Energy Rater. This analysis yields a projected, pre-construction HERS Index.

**HERS® Index** – Energy use index. A HERS Index of 100 represents energy use of the “American Standard Building” and an Index of 0 (zero) indicates a building using no net purchased energy (a Zero Energy Building). The lower a home's HERS Index, the more energy efficient.

**HOME ENERGY RATER-** Contractor who performs a standardized evaluation of the energy efficiency of a home. The rater conducts onsite inspections, including a blower door test (to test the leakiness of the house) and a duct test (to test the leakiness of the ducts). Results of tests with data from the software analysis are used to generate a final HERS Index score for a home.

**HEATING SEASONAL PERFORMANCE FACTOR (HSPF)** – Measurement used to gauge the efficiency of the heating mode of heat pumps. The higher the number, the greater the efficiency. (i.e. 6.8 HSPF.)

**LEED** - Leadership in Energy and Environmental Design green building rating systems nationally accepted standards for green building developed by the USGBC.

**NFRC LABEL** – National Fenestration Rating Council label appears on windows, doors, and skylights. The label gives ratings for the U-Factor, the Solar Heat Gain Coefficient (SHGC), Visible Light Transmittance (VT), Air Leakage (AL), and Condensation Resistance (CR).

**RADIANT BARRIERS** - Materials that are installed in buildings to reduce summer heat gain and winter heat loss, and hence to reduce building heating and cooling energy usage. A thin sheet or coating of a highly reflective material, usually aluminum, applied to one or both sides of a number of substrate materials.

**RESNET - RESIDENTIAL ENERGY SERVICES NETWORK** - An industry not-for-profit membership corporation which created the national standards for building.

**R VALUE** - A measure of a material's resistance to the passage of heat. A higher R value indicates more insulating "power". Inverse of U factor.

**SEASONAL ENERGY EFFICIENCY RATIO (SEER)** – Measure of efficiency by which the cooling process of air conditioners and heat pumps is rated. The higher the SEER, the greater the efficiency. (i.e. 13 SEER)

**SOLAR HEAT GAIN COEFFICIENT (SHGC)** - The fraction of solar radiation admitted through a window, patio door or skylight. The lower an SHGC, the less solar heat it transmits.

**THERMOSTAT** – An automatic control device used to maintain temperature at a fixed or adjustable set point.

**U-FACTOR** - Measures heat transfer through a material such as a window, door, or skylight. The lower the U-Factor, the greater resistance to heat flow. Inverse of R value.

**USGBC** - The U.S. Green Building Council, a nonprofit organization comprised of leaders from the building industry formed to encourage sustainability by promoting buildings that are environmentally responsible, profitable and healthy places to live and work.

### **Section R103. Requirements.**

In order to meet 15% above minimum energy Code provisions for energy efficiency, all new single-family residential homes must:

1. Submit an International Code Compliance Calculator (IC3) Energy Certificate to the building official which describes NOx emissions savings.
2. Provide a post construction HERS certificate documenting an 85 HERS Index or less.
3. Provide a landscape (turf and trees) that will survive stage 3 drought restrictions and a 2" deep mulch required in all beds.
4. Provide a water heater within 30 ft. of fixtures or on demand system or recirculating system or parallel piping system from a central manifold (PEX)

### **Section R104. Compliance.**

Single family residential homes can demonstrate compliance by:

1. Use of the International Code Compliance Calculator (IC3) software with a 15% above code result  
Or
2. Prescriptive options outlined in City approved Energy Code Review Sheet.  
Or
3. Registration and completion of the Green Built North Texas (GBNT) program as it exists or may be amended.  
Or
4. Registration and completion of the Environmental Protection Agency's most current edition of the ENERGY STAR® program.

### **Section R105. Indoor Air Quality.**

The minimum standard for indoor air quality of single-family residential structures shall meet the following requirements:

1. The main HVAC trunk line plenum in direct contact with heating or cooling equipment on the supply or return side must be constructed of sheet metal (no duct board), or equivalent material approved by the Building Official.
2. Heating and cooling equipment shall only be used during construction after manufacturer specified filter is installed. Used filters must be replaced with a new manufacturer recommended filter prior to the homeowner occupying the structure.
3. Every home must be tested (no batch testing allowed) by a Residential Energy Services Network (RESNET) HERS inspector/rater who is accredited through a RESNET approved HERS provider. The HERS provider must register with the City on an annual basis.
4. A Minimum of one programmable thermostat is required on every story.
5. A return air path shall be provided for any room that can be closed off by a door (except for baths, kitchens, closets, pantries, mechanical rooms, and laundry rooms).
6. All Joints in the air distribution system including ducts, plenums, and equipment shall be sealed with duct mastic.
7. Central vacuums, where provided, shall be vented outdoors.

### **Section R106. Exterior and Wet Walls.**

Vinyl wallpaper is not allowed on the inside of exterior wall or either side of wet walls such as bathrooms, kitchen, or laundry rooms.

### **Section R107. Roofing.**

Provide metal drip edge at all exposed roof decking.

### **Section R108. Water Conservation.**

In addition to the City's Landscape Ordinance and other applicable regulations as they stand or may be amended, the following must be accomplished:

1. Bedding must be mulched to a depth of 2-4 inches using recycled content mulch, which includes wood construction waste.

2. A portable drip irrigation bag or zoned bubbler system must be installed for each installed tree.

**Section III.** All provisions of the Code of Ordinances of the City of Plano in conflict with the provisions of this Ordinance are hereby repealed, and all other provisions of the Code of Ordinances of the City of Plano, not in conflict with the provisions of this Ordinance, shall remain in full force and effect.

**Section IV** It is the intention of the City Council that this Ordinance, and every provision thereof, shall be considered severable, and the invalidity or unconstitutionality of any section, clause, provision or portion of this Ordinance shall not affect the validity or constitutionality of any other portion of this Ordinance.

**Section V.** The repeal of any Ordinance or part of Ordinances effectuated by the enactment of this Ordinance shall not be construed as abandoning any action now pending under or by virtue of such Ordinance or as discontinuing, abating, modifying or altering any penalty accruing or to accrue, or as affecting any rights of the municipality under any section or provisions of any Ordinances at the time of passage of this Ordinance.

**Section VI.** Any person, firm or corporation found to be violating any term or provision of this Ordinance, shall be subject to a fine in accordance with Section 1-4(a) of the City Code of Ordinance for each offense. Every day a violation continues shall constitute a separate offense.

**Section VII.** This Ordinance shall become effective from and after its passage and publication as required by law.

DULY PASSED AND APPROVED this the 10th day of  
January, 2011.

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Pat Evans, MAYOR

ATTEST:

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Diane Zucco, CITY SECRETARY

APPROVED AS TO FORM:

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Diane C. Wetherbee, CITY ATTORNEY