ORDINANCE NO. O-14-07

AN ORDINANCE TO AMEND CHAPTER 5
OF THE CITY CODE ENTITLED "BUILDINGS," TO INCLUDE IN ARTICLE II,
ENTITLED “THE INTERNATIONAL RESIDENTIAL CODE (2003)”, A NEW SECTION
R326 "GAITHERSBURG GREEN RESIDENTIAL CRITERIA".

BE IT ORDAINED, by the Mayor & City Council of the City of Gaithersburg, in public meeting assembled, that Chapter 5 of the City Code is hereby amended to read as follows:

CHAPTER 5

BUILDINGS

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ARTICLE II. THE INTERNATIONAL RESIDENTIAL CODE (2003)

SEC. 5 – 5 – Modification

The International Residential Code (2003), adopted by Section 5-4, is hereby modified as follows:

Add new Section R326 “Gaithersburg Green Residential Criteria” to read as follows:

Building Requirements

SCOPE: The provisions of Section R326 shall only apply to new construction and additions that increase the gross floor area of a dwelling by more than fifty percent. The provisions of Section R326 may be modified by the building code official to the extent necessary to accommodate historic preservation considerations on any dwelling unit that is located in a historic district or is designated as a historic structure.

1) **Energy Performance:** Improve overall energy performance by designing and building high performing ENERGY STAR qualified homes by meeting or exceeding the following requirements[1]:

   a) *Cooling equipment*: 13 SEER A/C; OR ENERGY STAR qualified heat pump (11.5 EER/ 8.5 HSPF)
   b) *Heating equipment*: ENERGY STAR qualified gas furnace (90 AFUE); OR ENERGY STAR qualified heat pump; OR ENERGY STAR qualified boiler (85 AFUE); OR 85 AFUE oil furnace. Homes with heat pumps in Climate Zone 4

[1] Requirements ‘a-g’ meet those included in the ENERGY STAR Qualified Homes National Builder Option Package (BPO) (as of September 19, 2007). Requirements ‘h-i’ exceed the BPO program and are included in LEED Homes and Green Communities criteria.

must have an HSPF ≥ 8.5, which exceeds the ENERGY STAR minimum of 8.2 HSPF.

c) *Thermostat*: install ENERGY STAR qualified programmable thermostat with an "Adaptive Recovery" technology to prevent the excessive use of electric back-up heating.

d) *Ductwork*: Leakage ≤ 4 cfm to outdoors / 100 sq. ft.; AND R-6 min. insulation on ducts in unconditioned spaces.

e) *Envelope*: The building envelope shall meet or exceed the following requirements:
   i) Infiltration (ACH50): 6 in CZ 3-4; AND
   ii) Insulation levels that meet or exceed the current IRC; AND
   iii) Completed Thermal Bypass Inspection Checklist.

f) *Windows*: All windows and skylights must meet or exceed the ENERGY STAR specifications for Climate Zone 4 (~~CZ 4:~~ U-value ≤ 0.40 and SHGC ≤ 0.45).

g) *Water heater*:

Gas (EF):	40 Gal = 0.61	60 Gal = 0.57	80 Gal = 0.53
Electric (EF):	40 Gal = 0.93	50 Gal = 0.92	80 Gal = 0.89
Oil or Gas:	Integrated with space heating boiler		

h) *Appliances*: Reduce electric load due to appliances by selecting and installing ENERGY STAR qualified clothes washers, dishwashers, and refrigerators.

i) *Lighting:* Reduce electric load due to lighting by selecting and installing the following measures:
   i) Efficient exterior lighting- All exterior lighting shall have automatic photocell, motion, or timer controls. Outdoor lighting shall have a horizontal cutoff to eliminate light trespass from the building and site and to minimize impact on nocturnal environments. Use downlighting instead of uplighting.
   ii) Efficient interior lighting- Install at least four ENERGY STAR-labeled lighting fixtures or ENERGY STAR Advanced Lighting Package in all interior units. Install compact fluorescent lamps (CFLs) or equivalent in at least 80% of applicable light fixtures.

2) **Healthy Living Environment:** Protect occupants from exposure to contaminants by meeting or exceeding the following ventilation, source control, and source removal measures[2]:

a) *Heating, Ventilation, and Air Conditioning (HVAC) sizing*: Size heating and cooling equipment in accordance with the Air Conditioning Contractors of America Manual, Parts J and S, to prevent short-cycling of heating or air conditioning and ensure adequate dehumidification. However, the HVAC unit may be upsized at the discretion of the building code official.

b) *Garage isolation*: Provide a continuous air barrier between the conditioned (living) space and any unconditioned garage space to prevent the migration of any contaminants into the living space. In single-family houses with attached

[2] Requirements 'a-e' are derived from the Enterprise Foundation's Green Communities Criteria and requirement 'f' is derived from ENERGY STAR with Indoor Air Package Specifications (as of September 19, 2007).

garages, install a CO alarm inside the house on the wall that is attached to the garage or is outside the sleeping area.

c) *Water heaters- mold prevention*: Use tankless hot water heaters or install conventional hot water heaters in rooms with drains or catch pans piped to the exterior of the dwelling and with non-water sensitive floor covering.
d) *Water heaters- minimizing CO*: Specify direct vented or combustion sealed water heaters if the heater is located in a conditioned space.
e) *Cold water pipe insulation*: Insulate exposed cold water pipes in climates and building conditions susceptible to moisture condensation.
f) *Building Materials:* Building materials shall meet or exceed the following requirements:
    i) Structural plywood conforming to PS1 and PS2 and oriented strand board shall be made with exterior-type adhesives. Exterior-type adhesive is evident by the appearance of “Exposure 1” or “Exterior” in the panel trademark.
    ii) Particleboard and medium density fiberboard (MDF) shall be certified compliant with the low formaldehyde emission standards ANSI A208.1 and A208.2, respectively.
    iii) Hardwood plywood shall be compliant with ANSI/HPV HP-1-2004 and U.S. HUD Title 24, Part 3280.
    iv) Carpets, carpet pad, and carpet adhesives shall carry the Carpet and Rug Institute (CRI) Green Label or documented to meet the CRI Green Label testing program criteria for low-emitting products. Products labeled with the CRI Green Label Plus also meet this requirement.
    v) Permeability rating of finishes used on the interior side of a home’s exterior walls in hot humid and humid mixed climates shall be greater than ‘1’.

3) **Waste Management:** Divert construction, demolition, and land clearing materials from landfill disposal and reduce the demand for virgin resources by developing a *Construction, Demolition, and Landclearing (CDL) Waste Management Plan* with a goal to divert a minimum of 50% (by weight) of CDL waste from the landfill by one, or a combination of the following activities: salvage, reuse, source-separated CDL recycling, or co-mingled recycling.
    i) The plan should include such CDL materials, but not limited to: acoustical ceiling tiles, appliances, asphalt, asphalt shingles, brick, cabinets, cardboard packaging, carpet and carpet pad, concrete, doors, drywall, fixtures, fluorescent lights and ballasts, garage doors, glass (window), glass (other), green waste and land clearing debris, gypsum board, metals, paint, plastic, wood, field office waste (office paper, aluminum cans, glass, plastic, and office cardboard), and other salvage materials. The plan must be submitted as part of the permit application and will address the materials used or deconstructed on site, management method, hauler, destination, approximate quantities, and handling procedures.
    ii) The plan shall be posted at the job site and implementation shall include:
        (1) Waste prevention and recycling activities will be discussed at each safety meeting

(2) As each new subcontractor comes on-site, the recycling coordinator will present him/her with a copy of the Waste Management Plan and provide a tour of the recycling areas.
(3) The subcontractor will be expected to make sure all their crews comply with the Waste Management Plan.
(4) All recycling containers will be clearly labeled.
(5) Lists of acceptable/unacceptable materials will be posted throughout the site.

4) **Homeowner Education**: Educate the homeowner about the home's green features and the operation and maintenance of key features and equipment related to optimizing home performance by completing the following:

a) *Owner's Manual*: Provide a homeowner manual, to be included in the submittal of building plans, that includes the following:
   i) A guide for homeowners and renters that explains the intent, benefits, use and maintenance of green building features, and encourages additional green activities such as recycling, landscaping, and use of healthy cleaning materials;
   ii) Instructions and a routine maintenance plans for all appliances, HVAC operation, water-system turnoffs, lighting equipment and other systems that are part of each occupancy unit; and
   iii) An occupancy turnover plan that describes in detail the process of educating the tenant about proper use and maintenance of all building systems.
b) *Homeowner and New Resident Orientation*: Provide a walk-through and orientation to the homeowner or new resident that reviews the building's green features, operations, and maintenance.

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ADOPTED, this 15th day of October, 2007 by the City Council of Gaithersburg, Maryland.

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SIDNEY A. KATZ, MAYOR and
President of the City Council

DELIVERED to the Mayor of the City of Gaithersburg, Maryland, this 15th day of October, 2007. APPROVED by the Mayor of the City of Gaithersburg, this 15th day of October, 2007.

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SIDNEY A. KATZ, MAYOR

THIS IS TO CERTIFY that the foregoing ordinance as adopted by the City Council of Gaithersburg, in a public meeting assembled, on the 15th day of October, 2007 and that the same was approved by the Mayor of the City of Gaithersburg on the 15th day of October, 2007. This Ordinance will become effective on the 5th day of November, 2007.

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David B. Humpton, City Manager