T&E ITEM #5-6
April 28, 2010

Worksession

MEMORANDUM

April 26, 2010

TO: Transportation, Infrastructure, Energy & Environment Committee

FROM: Amanda Mihill, Legislative Analyst

SUBJECT: **Worksession:** Expedited Bill 10-10, Buildings – Energy Efficiency – Repeal and Executive Regulation 26-09, 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes

Expedited Bill 10-10, Buildings – Energy Efficiency – Repeal, sponsored by the Council President at the request of the County Executive, was introduced on March 23, 2010. A public hearing was held on April 13, at which 6 people testified (4, including the Executive, in support of Bill 10-10 and 2 in opposition to Bill 10-10).

Bill 10-10 would repeal the requirement that certain residential buildings meet certain ENERGY STAR standards; and generally amend the law relating to buildings, energy, and environmental policy.

Background

The Council enacted Bill 30-07, Buildings – Energy Efficiency on April 22, 2008. Bill 30-07 required certain covered buildings to meet the ENERGY STAR standard by January 1, 2010. Bill 30-07 defined "covered building" as a newly constructed single family residential building or a multi-family residential building that is not covered by the County Green Buildings Law or is not eligible to earn an ENERGY STAR rating.

Bill 30-07 contained an uncodified provision which would delay the ENERGY STAR standard's effective date from January 1 to April 1, 2010, if:

- the Director of the Department of Environmental Protection certifies by October 1, 2009 that an alternative approach would achieve the same energy efficiency goals and be less costly to builders and buyers of covered buildings; or
- the Sustainability Working Group finds that there is an insufficient number of qualified home energy performance raters doing business in the County.

On December 1, 2009, the Council enacted Expedited Bill 44-09, Buildings – Energy Efficiency – Deferral which deferred the effective date for requiring certain residential buildings to meet ENERGY STAR standards from January 1 to April 1, 2010. According to the Executive's

transmittal memorandum for Bill 44-09 (©9), DEP analyzed several alternative standards to the ENERGY STAR requirement and concluded that the 2009 International Energy Conservation Code, with the addition of a blower door test to verify compliance, would achieve the same energy goals as Bill 30-07. DEP concluded that the cost of complying with the IECC 2009 Code would be comparable, but could not conclude with certainty that IECC 2009 would cost less than the ENERGY STAR standard.

In his transmittal memorandum for Bill 10-10, the Executive noted that the IECC 2009 includes 2 verification paths – a blower door test or visual inspection of various components of a building's air barrier and insulation. The Executive is convinced that IECC 2009, regardless of the choice of verification, will achieve the energy efficiency goals of Bill 30-07. The Executive stated that he was reluctant to specify one verification method over another given the consensus-based code development process and was concerned that requiring a blower door test would increase the cost of constructing a new home by $200-$400. At the public hearing, after questioning by Councilmember Berliner, Stan Edwards indicated that DEP believed the Executive's view was "prudent" in terms of comparability to the ENERGY STAR standards. In conversations with Council staff, DPS staff indicated that they will require additional visual inspections, including an insulation inspection, which in their view makes it less likely that a house will be too leaky. DEP and DPS staff will be available at the worksession to discuss their views and provide information on energy efficiency and the building codes.

On March 25, the Council received Executive Regulation 26-09, Adoption of the 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes. As a Method (2) regulation, within 60 days after receiving it, the Council must either approve or disprove the regulation or extend time for Council action. A draft resolution approving the 2009 codes is on ©86. The Council has not received any correspondence related to the adoption of the 2009 codes separate from the issues presented in Bill 10-10.

Issue for Committee Discussion

The primary issue Council staff has identified for Committee consideration is whether the Committee concurs with the Executive's conclusion that the 2009 building codes, regardless of verification method, achieves the energy efficiency goals the Council espoused when it adopted Bill 30-07. Both ENERGY STAR and the 2009 codes require a detailed visual inspection and a duct blaster test, which is used to measure duct leakage. The major difference in verification methods between ENERGY STAR and the 2009 codes is the blower door test, which is used to determine the air tightness of a house. A blower door test is used to determine compliance with ENERGY STAR, but the test is optional under the 2009 codes. The central question for the Committee is: should the County require a blower door test to verify that the County's energy efficiency goals are met? Industry members have raised several concerns associated with the blower door test. Council staff identifies some advantages and disadvantages of using this test below.

Advantages

- indicates whether the house will meet the County's energy efficiency goals;
- indicates whether the house is built too tight, which could result problems

Disadvantages

- happens late in the process, after walls are "closed in" so it costs more to find and fix problems;
- will cost additional money to conduct the

associated with lower indoor air quality;
- the test is the best diagnostic test available to determine tightness.

test;
- industry representatives argue that the test is unreliable and results can vary.

To address this issue, Council staff has identified the following options for Committee consideration:

1. Adopt 2009 codes and retain the ENERGY STAR requirement. If the Committee is not convinced that the 2009 building codes will achieve comparable energy efficiency goals to the ENERGY STAR standard, the Committee could recommend the Council adopt the 2009 codes and not approve Bill 10-10.

2. Adopt 2009 codes and do not retain the ENERGY STAR requirement. If the Committee concurs with the Executive and is convinced that the 2009 codes will achieve the same energy efficiency goals as ENERGY STAR, with either a detailed visual inspection or a blower door test, the Committee could recommend that the Council adopt the 2009 codes and approve Bill 10-10.

3. Adopt 2009 codes, do not retain the ENERGY STAR requirement, and require a blower-door test to verify energy conservation. If the Committee believes that the 2009 codes should result in the same energy efficiency goals, but is not convinced that a visual inspection is sufficient to ensure that the County's energy efficiency goals will be met, the Committee could recommend adopting the 2009 codes with a local modification to require a blower door test and approve Bill 10-10. **One related option** would be to require a blower door test for only a certain percentage of homes (e.g., 25%) and/or sunset the blower door test requirement after a certain timeframe (e.g., 1 year). This option would allow the Council to revisit this issue prior to the sunset date to determine whether houses built to the 2009 codes are achieving the same level of energy efficiency as required under ENERGY STAR.

F:\LAW\BILLS\1010 Buildings-Energy Efficiency-Repeal\T&E Memo.Doc

Expedited Bill No. 10-10
Concerning: Buildings – Energy Efficiency - Repeal
Revised: 3/19/2010 Draft No. 1
Introduced: March 23, 2010
Expires: September 23, 2011
Enacted:
Executive:
Effective: April 1, 2010
Sunset Date: None
Ch. _____, Laws of Mont. Co. _____

COUNTY COUNCIL
FOR MONTGOMERY COUNTY, MARYLAND

By: Council President at the request of the County Executive

AN EXPEDITED ACT to:

(1) repeal the requirement that certain residential buildings meet certain ENERGY STAR standards; and

(2) generally amend the law relating to buildings, energy, and environmental policy.

By repealing
Montgomery County Code
Chapter 8, Buildings
Article VIII. Energy Efficiency

2008 Laws of Montgomery County, ch. 7, § 5

Boldface	*Heading or defined term.*
Underlining	*Added to existing law by original bill.*
[Single boldface brackets]	*Deleted from existing law by original bill.*
Double underlining	*Added by amendment.*
[[Double boldface brackets]]	*Deleted from existing law or the bill by amendment.*
* * *	*Existing law unaffected by bill.*

The County Council for Montgomery County, Maryland approves the following Act:

Sec. 1. Article VIII of Chapter 8 is repealed as follows:

[Article VIII. Energy Efficiency]

[8-54. Definitions.]

[In this Article, the following words have the meanings indicated:

"*Covered building*" means a newly constructed:

(1) single-family residential building; or

(2) multi-family residential building which is:

(A) not a covered building under Section 8-48; and

(B) eligible to earn the ENERGY STAR rating.

"*Department*" means the Department of Permitting Services.

"*Director*" means the Director of the Department or the Director's designee.

"*ENERGY STAR rating*" means the ENERGY STAR rating developed by the federal Environmental Protection Agency which measures a building's energy efficiency.

"*Home Energy Rating System*" or "*HERS*" means the energy efficiency rating system for residential buildings developed by RESNET.

"*Qualified home energy performance rater*" means an individual who:

(1) is certified by RESNET as a home energy performance rater; or

(2) meets other equivalent requirements approved by the Director.

"*RESNET*" means the Residential Energy Services Network.

"*Performance path*" means the process developed by the federal Environmental Protection Agency under which a building may achieve the ENERGY STAR rating if it:

(1) achieves the applicable HERS index score; and

(2) is verified and field-tested by a qualified home energy performance rater.

"*Prescriptive path*" means the process developed by the federal Environmental Protection Agency under which a building may achieve the ENERGY STAR rating if it:

(1) complies with the applicable ENERGY STAR Builder Option Package; and

(2) is verified and field-tested by a qualified home energy performance rater.]

[8-55. ENERGY STAR standard.]

[A covered building must achieve the ENERGY STAR rating under the performance or prescriptive path.]

[8-56. Building permits; use and occupancy certificates.]

[(a) Design plans. An applicant for a building permit for a covered building must submit to the Department:

(1) design plans for the building that are likely to achieve the standard under Section 8-55, as certified by a qualified home energy performance rater; and

(2) any other document or information the Department finds necessary to decide whether the building will achieve the standard under Section 8-55.

(b) Building permit. The Department must require compliance with Section 8-55 as a condition of any building permit issued for a covered building.

(c) Final use and occupancy certificate. The Department must not issue a final use and occupancy certificate for a covered building, if a use and occupancy certificate is otherwise required, unless it finds that the building complies with Section 8-55.]

[8-57. Regulations.]

[The County Executive must adopt regulations under Method (2) to administer this Article. Those regulations must specify:

(a) any process for becoming a qualified home energy performance rater that the Director finds is equivalent to the RESNET certification process;

(b) any standards and procedures under which the Director may approve full or partial waivers of Section 8-55 when compliance would be impractical or unduly burdensome and the waiver would serve the public interest; and

(c) standards and procedures for any enforcement mechanism that the Department finds necessary to accomplish the purposes of this Article.]

Sec. 2. Section 5 of Chapter 7 of the 2008 Laws of Montgomery County, as amended by Section 1 of Chapter 32 of the 2009 Laws of Montgomery County, is repealed as follows:

[(a) Section 8-55, as added by Section 4 of this Act, applies to any covered building for which a building permit application is filed on or after April 1, 2010.

(b) By October 1, 2009, the County Executive must adopt, and submit to the Council under County Code Section 2A-15, regulations required by Section 8-57, as added by Section 4 of this Act.]

Sec. 3. Expedited Effective Date. The Council declares that this Act is necessary for the immediate protection of the public interest. This Act takes effect on April 1, 2010.

LEGISLATIVE REQUEST REPORT

Expedited Bill 10-10
Buildings—Energy Efficiency—Repeal

DESCRIPTION: Repeals the requirement that certain residential buildings meet ENERGY STAR standards.

PROBLEM: Bill 30-07, Buildings – Energy Efficiency required "covered buildings" to meet the Energy Star standard for energy efficiency. In this context, covered buildings include (1) all single family homes; and (2) multi-family buildings that are eligible for the Energy Star rating and not covered by the County's Green Buildings Law. Bill 44-09, Buildings – Energy Efficiency – Deferral deferred the effective date of these provisions to April 1, 2010.

Bill 30-07 included language that authorized the Department of Environmental Protection (DEP) to "suspend" the applicability of the Energy Star standard until April 1, 2010 if DEP found an alternative standard that: (1) achieved the same energy efficiency goals; and (2) was less costly to builders and buyers of covered buildings. Following a comprehensive analysis of a number of alternative standards, DEP concluded that the 2009 International Energy Conservation Code (IECC 2009), with a local modification that would require a blower door test as a method of verifying compliance, would result in building energy performance that was comparable to the Energy Star standard.

Maryland adopted IECC 2009 as the State energy code (effective January 1, 2010) and mandated that all local jurisdictions adopt this code by June 1, 2010. As adopted by the International Code Council (ICC), IECC 2009 includes two paths for verification – a blower door test or visual inspection of various components of a building's air barrier and insulation. This bill recognizes that the ICC's consensus-based code development process determined that IECC 2009 will achieve the same energy performance regardless of the verification option selected by the builder.

GOALS AND OBJECTIVES: To repeal the ENERGY STAR mandate that applies to single-family homes and certain other residential buildings.

COORDINATION: Department of Permitting Services

FISCAL IMPACT: Completed.

ECONOMIC IMPACT: To be requested.

EVALUATION: To be requested.

EXPERIENCE ELSEWHERE:

SOURCE OF INFORMATION: Hadi Mansouri, Chief, Division of Building Construction, DPS
Stan Edwards, Chief, Compliance Division, DEP

APPLICATION WITHIN MUNICIPALITIES: To be determined.

PENALTIES: Class A

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Isiah Leggett
County Executive

MEMORANDUM

March 16, 2010

TO: Nancy Floreen, Council President

FROM: Isiah Leggett, County Executive

SUBJECT: Proposed Legislation to Repeal the Energy Star Standard for Covered Buildings

I am forwarding to Council for introduction an Expedited Bill that would repeal provisions of the County Code which were added by Bill 30-07, Buildings – Energy Efficiency that require "covered buildings" to meet the Energy Star standard for energy efficiency. In this context, covered buildings include: (1) single family homes; and (2) multi-family buildings that are eligible for the Energy Star rating and not covered by the County's Green Buildings Law (i.e., buildings that are three stories or less). I am also forwarding a Legislative Request Report for this bill.

Bill 30-07 made the Energy Star standard applicable to any covered building for which a building permit application is filed on or after January 1, 2010. Bill 44-09, Buildings – Energy Efficiency – Deferral (which the Council passed on December 10, 2009) deferred the applicability of the bill to building permit applications filed on or after April 1, 2010.

Bill 30-07 included language that authorized the Department of Environmental Protection (DEP) to "suspend" the applicability of the Energy Star standard until April 1, 2010 if DEP found an alternative standard that: (1) achieved the same energy efficiency goals; and (2) was less costly to builders and buyers of covered buildings. Following a comprehensive analysis of a number of alternative standards, DEP concluded that the 2009 International Energy Conservation Code (IECC 2009), with a local modification that would require a blower door test as a method of verifying compliance, would result in building energy performance that was comparable to the Energy Star standard. The blower door test is projected to cost $200-$400 for the average sized home.

Maryland adopted IECC 2009 as the State energy code (effective January 1, 2010) and mandated that all local jurisdictions adopt this code by June 1, 2010. As adopted by the International Code Council (ICC), IECC 2009 includes two paths for verification – a blower door test or visual inspection of various components of a building's air barrier and insulation. Based on discussions with the Department of Permitting Services (DPS) and DEP, I am convinced that IECC 2009 will achieve the energy efficiency goals of Bill 37-07 regardless of

the verification option selected by the builder. Recognizing that the ICC's consensus-based code development process includes representatives from across the construction industry, including code regulators and industry representatives, I am reluctant to specify one verification method is more effective than the other. In addition, mandating a blower door test would increase the cost of constructing a new home by $200-$400 (or more if multiple tests were required), something I do not recommend given the current state of the construction industry.

Representatives of DPS can provide more information to Council on IECC 2009, and the processes used by builders and DPS to ensure that buildings comply with applicable energy codes. In addition, it would be appropriate for DPS and DEP to update the Council periodically on the status of changes to building codes like IECC, as well as voluntary standards like Energy Star. Significant changes to codes and standards are likely in the years ahead due to increased interest in improving the energy efficiency of all buildings, and the development of new energy related technologies and practices.

Attachments

cc: Kathleen Boucher, Assistant Chief Administrative Officer
Carla Reid, Director, Department of Permitting Services
Robert Hoyt, Director, Department of Permitting Services

Bill 10-10

RAN
CC
S&F
LL
AM
OLO

056033

OFFICE OF MANAGEMENT AND BUDGET

Isiah Leggett
County Executive

Joseph F. Beach
Director

MEMORANDUM

April 14, 2010

TO: Nancy Floreen, President, County Council

FROM: Joseph F. Beach, Director

SUBJECT: Expedited Bill 10-10, Buildings – Energy Efficiency - Repeal

RECEIVED
MONTGOMERY COUNTY
COUNCIL
2010 APR 19 AM 8:53

The purpose of this memorandum is to transmit a revised fiscal and economic impact statement to the Council on the subject legislation.

LEGISLATION SUMMARY

Bill 10-10 would repeal the requirement that single-family homes and certain other residential buildings meet ENERGY STAR standards.

FISCAL AND ECONOMIC SUMMARY

This bill, in conjunction with Executive Regulation 26-09, will have no net fiscal impact on the County. [Executive Regulation 26-09 ("2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes") will, among other things, meet the intent of the ENERGY STAR requirements through the adoption of the State-mandated 2009 International Energy Conservation Code.]

Since Expedited Bill 10-10 repeals the requirement that certain buildings meet ENERGY STAR requirements, it would have an economic impact on the owner of an affected building: the owner would no longer have to incur the cost of verifying that the building meets ENERGY STAR requirements.

The following contributed to and concurred with this analysis: Stan Edwards, Department of Environmental Protection; Hadi Mansouri, Department of Permitting Services; David Platt, Department of Finance; John Greiner, Office of Management and Budget.

JFB:jg

c: Kathleen Boucher, Assistant Chief Administrative Officer
Dee Gonzalez, Offices of the County Executive
Bob Hoyt, Director, Department of Environmental Protection
Stan Edwards, Department of Environmental Protection
Carla Reid, Director, Department of Permitting Services
Hadi Mansouri, Department of Permitting Services
David Platt, Department of Finance
John Greiner, Office of Management and Budget
John Cuff, Office of Management and Budget

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

Isiah Leggett
County Executive

MEMORANDUM

November 12, 2009

TO: Phil Andrews, Council President

FROM: Isiah Leggett, County Executive

SUBJECT: Proposed Legislation

I am forwarding for your consideration an expedited bill that would modify the applicability of Bill 30-07, Buildings – Energy Efficiency (which the Council passed on April 22, 2008) to make it applicable to covered buildings for which a building permit application is filed on or after April 1, 2010. I am also forwarding a Legislative Request Report for this bill.

Bill 30-07 requires the following "covered buildings" to meet the Energy Star standard for energy efficiency: (1) all single family homes; and (2) multi-family buildings that are eligible for the Energy Star rating and not covered by the County's Green Buildings Law (i.e., buildings that are three stories or less). Under Bill 30-07, the Energy Star standard is applicable to covered buildings for which a building permit application is filed on or after January 1, 2010.

Bill 30-07 included language that authorized the Department of Environmental Protection (DEP) to "suspend" the applicability of the Energy Star standard until April 1, 2010 if DEP found an alternative standard that: (1) achieved the same energy efficiency goals; and (2) was less costly to builders and buyers of covered buildings.

After enactment of Bill 30-07, DEP conducted a comprehensive analysis of the following alternative standards: (1) the 2009 International Energy Conservation Code (IECC 2009); (2) the National Association of Home Builder's National Green Building Standard; and (3) the Department of Energy's Builder Challenge. DEP concluded that IECC 2009, with a local modification that would require a blower door test as a method of verifying compliance, would achieve the same energy goals as the Energy Star standard. DEP also concluded that the cost of complying with this alternative standard would be *comparable to* the cost of complying with Energy Star. However, based on available data, DEP could not conclude with certainty that the cost of complying with this alternative standard would be *less than* the cost of complying with Energy Star.

The State recently adopted IECC 2009 as the State energy code standard (effective October 1, 2009) and mandated that all local jurisdictions adopt the IECC 2009 by April 1, 2010. The Department of Permitting Services (DPS) has drafted proposed regulations that would amend the County's building code to adopt IECC 2009. The proposed regulations will be published in the December 2009 County Register and submitted to Council in early 2010.

In light of the comparability of the IECC 2009 and Energy Star standards, I recommend that the Council make a final decision regarding the appropriate energy conservation standard for covered buildings under Bill 30-07 at the same time that it considers the proposed regulations to adopt the IECC 2009 for other types of new buildings. This would allow the Council to obtain a full understanding of how the IECC 2009 relates to the Energy Star standard before making a final decision regarding the appropriate standard for single family homes and multi-family buildings that are three stories or less.

I look forward to working with the Council as it considers this bill.

Attachments (2)

cc: Kathleen Boucher, Assistant Chief Administrative Officer
Robert Hoyt, Director, Department of Environmental Protection
Carla Reid, Director, Department of Permitting Services
Leon Rodriguez, County Attorney

Testimony on Behalf of County Executive Isiah Leggett
Regarding Expedited Bill 10-10, Buildings-Energy Efficiency

Stan Edwards, Chief
Division of Environmental Policy & Compliance
Department of Environmental Protection

April 13, 2010

Good afternoon. My name is Stan Edwards. I am the Chief of the Division of Environmental Policy & Compliance in the Department of Environmental Protection (DEP). Thank you for the opportunity to testify on behalf of the County Executive in support of Expedited Bill 10-10, which would repeal provisions of current law which were added by Bill 30-07, Buildings – Energy Efficiency and require "covered buildings" to meet the Energy Star standard for energy efficiency. In this context, covered buildings include (1) all single family homes; and (2) multi-family buildings that are eligible for the Energy Star rating and not covered by the County's Green Buildings Law (i.e., buildings that are 3 stories or less).

Bill 30-07 made the Energy Star standard applicable to covered buildings for which a building permit application was filed on or after January 1, 2010. Bill 44-09, Buildings – Energy Efficiency – Deferral (which the Council passed on December 10, 2009) deferred the effective date of Bill 30-07 to April 1, 2010.

Bill 30-07 included language that authorized DEP to "suspend" the applicability of the Energy Star standard until April 1, 2010 if DEP found an alternative standard that: (1) achieved the same energy efficiency goals; and (2) was less costly to builders and buyers of covered buildings. Working with the Department of Permitting Services, DEP conducted a comprehensive analysis of a number of alternative standards. This analysis concluded that the 2009 International Energy Conservation Code (IECC 2009) contained methods and materials related to energy efficiency that would result in building energy performance comparable to the Energy Star standard. Maryland adopted IECC 2009 as the State energy code (effective January 1, 2010) and mandated that all local jurisdictions adopt this code by June 1, 2010.

The primary difference between IECC 2009 and the current Energy Star standard is the process for verifying compliance. Energy Star requires a blower door test. As adopted by the International Code Council (ICC), IECC 2009 includes two paths for verification – a blower door test or visual inspection of various components of a building's air barrier and insulation. Based on discussions with DEP and DPS, the County Executive is convinced that IECC 2009 will achieve the energy efficiency goals of Bill 37-07 regardless of the verification option selected by the builder. Recognizing that the ICC's consensus-based code development process includes representatives from across the construction industry, including code regulators and industry representatives, he is reluctant to specify one verification method is more effective than the other.

Representatives of DPS can provide more information to Council on IECC 2009, and the processes used by builders and the Department to ensure buildings comply with applicable energy codes. In addition, it would be appropriate for DPS and DEP to update the Council periodically on the status of changes to building codes like IECC, as well as voluntary standards

like Energy Star. Significant changes to codes and standards are likely in the years ahead due to increased interest in improving the energy efficiency of all buildings, and the development of new energy related technologies and practices.

I would be happy to address any questions the Council may have.

MARYLAND-NATIONAL CAPITAL BUILDING INDUSTRY ASSOCIATION
1738 Elton Road, Suite 200, Silver Spring, Maryland 20903
(301) 445-5400 / Fax (301) 445-5499
Email : communications@mncbia.org
Website : www.mncbia.org

Comments on Behalf of the Custom Builders Council
on
Expedited BILL 10-10, Buildings – Energy Efficiency – Repeal
Public Hearing before the Montgomery County Council
April 13, 2010

Good afternoon, I am Larry Cafritz, representing the Custom Builders Council (CBC). Our builders specialize in building one-of-a-kind homes for specific customers on specific lots. I am testifying today in support of the County Executive's Expedited Bill 10-10, Buildings – Energy Efficiency.

Energy loss, in residential construction, is often due to the lack of insulation and lack of 'air-tightness'. We support efforts to clarify and improve energy efficiency. We believe that a component of being "sustainable" is to effect change in a cost-effective manner.

We believe that adopting the *IECC 2009* increases the energy efficiency of new homes to the Energy Star guideline, and meets the intent of Bill 30-07; we believe that it achieves that goal in the more cost-expeditious manner.

While current building code requires wall and ceiling insulation, and insulation in unconditioned spaces, there has been no insulation inspection. The new code addresses energy loss by adding the following requirements and inspections:

1) *Prior to drywall installation, the inspector must follow* a *thorough and detailed 17-step inspection process (see the attached four-page list) to verify air seal and insulation (in the walls, ceilings, floors, attics, window and door jambs, and behind recessed lighting and electrical boxes, among other places, as well as various systems and components).*

2) *In addition, the code requires that the air duct system be sealed and tested for tightness using a duct blaster test.*

When a house under construction fails to pass these new inspections, it requires that the inefficiencies be addressed ***before*** the walls *are* 'closed-in' ... this corrects the inefficiencies at the ***most efficient*** point in the construction cycle. Consequently, any deficiencies can be fixed at a time that is much less disruptive to buyers and builders schedules and at a more reasonable cost -- when compared to fixing a problem if identified by a blower door test ***after*** home completion. (The blower door test, designed to measure air exchange and done after the house is completed, adds a redundant step at an additional cost ... It is wasteful and counter productive to unnecessarily require independent third party testing for something that can be addressed, in a more efficient and cost effective manner, via the new inspection processes.)

Custom Builders, because of the desires and demands of our customers, are often on the cutting edge of innovations and new building practices, which must be balanced by

practical, bottom-line measures. The IECC 2009 establishes energy efficiency, and recognizes that the best time to address inefficiencies is to correct them while a house is under construction, ***not after*** it has been completed.

For these reasons, the CBC supports Bill 10-10 and respectfully requests that the Council adopt the legislation, as drafted by the County Executive.

The Members of the CBC look forward to working with the Council and Staff in the April 28 T&E worksession to answer questions about practices that effectively, and sustainably, increase energy efficiency in new residential single-family homes.

Thank you for the opportunity to provide comments this afternoon.

Attachment: *Residential Energy Efficiency*, pages 29-32 of the 2009 International Energy Conservation Code

TABLE 402.2.5
STEEL-FRAME CEILING, WALL AND FLOOR INSULATION
(*R*-VALUE)

WOOD FRAME *R*-VALUE REQUIREMENT	COLD-FORMED STEEL EQUIVALENT *R*-VALUE[a]
Steel Truss Ceilings[b]	
R-30	R-38 or R-30 + 3 or R-26 + 5
R-38	R-49 or R-38 + 3
R-49	R-38 + 5
Steel Joist Ceilings[b]	
R-30	R-38 in 2 × 4 or 2 × 6 or 2 × 8 R-49 in any framing
R-38	R-49 in 2 × 4 or 2 × 6 or 2 × 8 or 2 × 10
Steel-Framed Wall	
R-13	R-13 + 5 or R-15 + 4 or R-21 + 3 or R-0 + 10
R-19	R-13 + 9 or R-19 + 8 or R-25 + 7
R-21	R-13 + 10 or R-19 + 9 or R-25 + 8
Steel Joist Floor	
R-13	R-19 in 2 × 6 R-19 + 6 in 2 × 8 or 2 × 10
R-19	R-19 + 6 in 2 × 6 R-19 + 12 in 2 × 8 or 2 × 10

a. Cavity insulation *R*-value is listed first, followed by continuous insulation *R*-value.
b. Insulation exceeding the height of the framing shall cover the framing.

402.2.6 Floors. Floor insulation shall be installed to maintain permanent contact with the underside of the subfloor decking.

402.2.7 Basement walls. Walls associated with conditioned basements shall be insulated from the top of the *basement wall* down to 10 feet (3048 mm) below grade or to the basement floor, whichever is less. Walls associated with unconditioned basements shall meet this requirement unless the floor overhead is insulated in accordance with Sections 402.1.1 and 402.2.6.

402.2.8 Slab-on-grade floors. Slab-on-grade floors with a floor surface less than 12 inches (305 mm) below grade shall be insulated in accordance with Table 402.1.1. The insulation shall extend downward from the top of the slab on the outside or inside of the foundation wall. Insulation located below grade shall be extended the distance provided in Table 402.1.1 by any combination of vertical insulation, insulation extending under the slab or insulation extending out from the building. Insulation extending away from the building shall be protected by pavement or by a minimum of 10 inches (254 mm) of soil. The top edge of the insulation installed between the *exterior wall* and the edge of the interior slab shall be permitted to be cut at a 45-degree (0.79 rad) angle away from the *exterior wall*. Slab-edge insulation is not required in jurisdictions designated by the *code official* as having a very heavy termite infestation.

402.2.9 Crawl space walls. As an alternative to insulating floors over crawl spaces, crawl space walls shall be permitted to be insulated when the crawl space is not vented to the outside. Crawl space wall insulation shall be permanently fastened to the wall and extend downward from the floor to the finished grade level and then vertically and/or horizontally for at least an additional 24 inches (610 mm). Exposed earth in unvented crawl space foundations shall be covered with a continuous Class I vapor retarder. All joints of the vapor retarder shall overlap by 6 inches (153 mm) and be sealed or taped. The edges of the vapor retarder shall extend at least 6 inches (153 mm) up the stem wall and shall be attached to the stem wall.

402.2.10 Masonry veneer. Insulation shall not be required on the horizontal portion of the foundation that supports a masonry veneer.

402.2.11 Thermally isolated sunroom insulation. The minimum ceiling insulation *R*-values shall be R-19 in Zones 1 through 4 and R-24 in Zones 5 through 8. The minimum wall *R*-value shall be R-13 in all zones. New wall(s) separating a sunroom from *conditioned space* shall meet the *building thermal envelope* requirements.

402.3 Fenestration. (Prescriptive).

402.3.1 *U*-factor. An area-weighted average of fenestration products shall be permitted to satisfy the *U*-factor requirements.

402.3.2 Glazed fenestration SHGC. An area-weighted average of fenestration products more than 50 percent glazed shall be permitted to satisfy the SHGC requirements.

402.3.3 Glazed fenestration exemption. Up to 15 square feet (1.4 m^2) of glazed fenestration per dwelling unit shall be permitted to be exempt from *U*-factor and SHGC requirements in Section 402.1.1. This exemption shall not apply to the *U*-factor alternative approach in Section 402.1.3 and the Total UA alternative in Section 402.1.4.

402.3.4 Opaque door exemption. One side-hinged opaque door assembly up to 24 square feet (2.22 m^2) in area is exempted from the *U*-factor requirement in Section 402.1.1. This exemption shall not apply to the *U*-factor alternative approach in Section 402.1.3 and the total UA alternative in Section 402.1.4.

402.3.5 Thermally isolated sunroom *U*-factor. For Zones 4 through 8, the maximum fenestration *U*-factor shall be 0.50 and the maximum skylight *U*-factor shall be 0.75. New windows and doors separating the sunroom from *conditioned space* shall meet the *building thermal envelope* requirements.

402.3.6 Replacement fenestration. Where some or all of an existing fenestration unit is replaced with a new fenestration product, including sash and glazing, the replacement fenestration unit shall meet the applicable requirements for *U*-factor and SHGC in Table 402.1.1.

402.4 Air leakage (Mandatory).

402.4.1 Building thermal envelope. The *building thermal envelope* shall be durably sealed to limit infiltration. The sealing methods between dissimilar materials shall allow for differential expansion and contraction. The following shall be caulked, gasketed, weatherstripped or otherwise sealed with an air barrier material, suitable film or solid material:

1. All joints, seams and penetrations.

2. Site-built windows, doors and skylights.
3. Openings between window and door assemblies and their respective jambs and framing.
4. Utility penetrations.
5. Dropped ceilings or chases adjacent to the thermal envelope.
6. Knee walls.
7. Walls and ceilings separating a garage from conditioned spaces.
8. Behind tubs and showers on exterior walls.
9. Common walls between dwelling units.
10. Attic access openings.
11. Rim joist junction.
12. Other sources of infiltration.

402.4.2 Air sealing and insulation. Building envelope air tightness and insulation installation shall be demonstrated to comply with one of the following options given by Section 402.4.2.1 or 402.4.2.2:

402.4.2.1 Testing option. Building envelope tightness and insulation installation shall be considered acceptable when tested 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 shall occur after rough in and after installation of penetrations of the building envelope, including penetrations for utilities, plumbing, electrical, ventilation and combustion appliances.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed;
2. Dampers shall be closed, but not sealed, including exhaust, intake, makeup air, backdraft and flue dampers;
3. Interior doors shall be open;
4. Exterior openings for continuous ventilation systems and heat recovery ventilators shall be closed and sealed;
5. Heating and cooling system(s) shall be turned off;
6. HVAC ducts shall not be sealed; and
7. Supply and return registers shall not be sealed.

402.4.2.2 Visual inspection option. Building envelope tightness and insulation installation shall be considered acceptable when the items listed in Table 402.4.2, applicable to the method of construction, are field verified. Where required by the *code official*, an *approved* party independent from the installer of the insulation shall inspect the air barrier and insulation.

402.4.3 Fireplaces. New wood-burning fireplaces shall have gasketed doors and outdoor combustion air.

402.4.4 Fenestration air leakage. Windows, skylights and sliding glass doors shall have an air infiltration 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 according to NFRC 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and *listed* and *labeled* by the manufacturer.

Exceptions: Site-built windows, skylights and doors.

402.4.5 Recessed lighting. Recessed luminaires installed in the *building thermal envelope* shall be sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires shall be 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 shall be sealed with a gasket or caulk between the housing and the interior wall or ceiling covering.

402.5 Maximum fenestration *U*-factor and SHGC (Mandatory). The area-weighted average maximum fenestration *U*-factor permitted using trade-offs from Section 402.1.4 or 404 shall be 0.48 in Zones 4 and 5 and 0.40 in Zones 6 through 8 for vertical fenestration, and 0.75 in Zones 4 through 8 for skylights. The area-weighted average maximum fenestration SHGC permitted using trade-offs from Section 405 in Zones 1 through 3 shall be 0.50.

SECTION 403
SYSTEMS

403.1 Controls (Mandatory). At least one thermostat shall be provided for each separate heating and cooling system.

403.1.1 Programmable thermostat. Where the primary heating system is a forced-air furnace, at least one thermostat per dwelling unit shall be capable of controlling the heating and cooling system on a daily schedule to maintain different temperature set points at different times of the day. This thermostat shall include the capability to set back or temporarily operate the system to maintain zone temperatures down to 55°F (13°C) or up to 85°F (29°C). The thermostat shall initially be programmed with a heating temperature set point no higher than 70°F (21°C) and a cooling temperature set point no lower than 78°F (26°C).

403.1.2 Heat pump supplementary heat (Mandatory). Heat pumps having supplementary electric-resistance heat shall have controls that, except during defrost, prevent supplemental heat operation when the heat pump compressor can meet the heating load.

403.2 Ducts.

403.2.1 Insulation (Prescriptive). Supply ducts in attics shall be insulated to a minimum of R-8. All other ducts shall be insulated to a minimum of R-6.

Exception: Ducts or portions thereof located completely inside the *building thermal envelope*.

403.2.2 Sealing (Mandatory). All ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed.

Joints and seams shall comply with Section M1601.4.1 of the *International Residential Code*.

Duct tightness shall be verified by either of the following:

1. Postconstruction test: Leakage to outdoors shall be less than or equal to 8 cfm (226.5 L/min) per 100 ft² (9.29 m²) of *conditioned floor area* or a total leakage less than or equal to 12 cfm (12 L/min) per 100 ft² (9.29 m²) of *conditioned floor area* when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the entire system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test.
2. Rough-in test: Total leakage shall be less than or equal to 6 cfm (169.9 L/min) per 100 ft² (9.29 m²) of *conditioned floor area* when tested at a pressure differential of 0.1 inches w.g. (25 Pa) across the roughed in system, including the manufacturer's air handler enclosure. All register boots shall be taped or otherwise sealed during the test. If the air handler is not installed at the time of the test, total leakage shall be less than or equal to 4 cfm (113.3 L/min) per 100 ft² (9.29 m²) of *conditioned floor area*.

Exceptions: Duct tightness test is not required if the air handler and all ducts are located within *conditioned space*.

TABLE 402.4.2
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 inside of an air barrier.
Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.
Windows and doors	Space between window/door jambs and framing is sealed.
Rim joists	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.
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.
Garage separation	Air sealing is provided between the garage and conditioned spaces.
Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception—fixtures in conditioned space.
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
Shower/tub on exterior wall	Showers and tubs on exterior walls have insulation and an air barrier separating them from the exterior wall.
Electrical/phone box on exterior walls	Air barrier extends behind boxes or air sealed-type boxes are installed.
Common wall	Air barrier is installed in common wall 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.

403.2.3 Building cavities (Mandatory). Building framing cavities shall not be used as supply ducts.

403.3 Mechanical system piping insulation (Mandatory). Mechanical system piping capable of carrying fluids above 105°F (41°C) or below 55°F (13°C) shall be insulated to a minimum of R-3.

403.4 Circulating hot water systems (Mandatory). All circulating service hot water piping shall be insulated to at least R-2. Circulating hot water systems shall include an automatic or readily *accessible* manual switch that can turn off the hot-water circulating pump when the system is not in use.

403.5 Mechanical ventilation (Mandatory). Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

403.6 Equipment sizing (Mandatory). Heating and cooling equipment shall be sized in accordance with Section M1401.3 of the *International Residential Code*.

403.7 Systems serving multiple dwelling units (Mandatory). Systems serving multiple dwelling units shall comply with Sections 503 and 504 in lieu of Section 403.

403.8 Snow melt system controls (Mandatory). Snow- and ice-melting systems, supplied through energy service to the building, shall include automatic controls capable of shutting off the system when the pavement temperature is above 50°F, and no precipitation is falling and an automatic or manual control that will allow shutoff when the outdoor temperature is above 40°F.

403.9 Pools (Mandatory). Pools shall be provided with energy-conserving measures in accordance with Sections 403.9.1 through 403.9.3.

403.9.1 Pool heaters. All pool heaters shall be equipped with a readily *accessible* on-off switch to allow shutting off the heater without adjusting the thermostat setting. Pool heaters fired by natural gas shall not have continuously burning pilot lights.

403.9.2 Time switches. Time switches that can automatically turn off and on heaters and pumps according to a preset schedule shall be installed on swimming pool heaters and pumps.

Exceptions:

1. Where public health standards require 24-hour pump operation.
2. Where pumps are required to operate solar- and waste-heat-recovery pool heating systems.

403.9.3 Pool covers. Heated pools shall be equipped with a vapor-retardant pool cover on or at the water surface. Pools heated to more than 90°F (32°C) shall have a pool cover with a minimum insulation value of R-12.

Exception: Pools deriving over 60 percent of the energy for heating from site-recovered energy or solar energy source.

SECTION 404
ELECTRICAL POWER AND LIGHTING SYSTEMS

404.1 Lighting equipment (Prescriptive). A minimum of 50 percent of the lamps in permanently installed lighting fixtures shall be high-efficacy lamps.

SECTION 405
SIMULATED PERFORMANCE ALTERNATIVE (Performance)

405.1 Scope. This section establishes criteria for compliance using simulated energy performance analysis. Such analysis shall include heating, cooling, and service water heating energy only.

405.2 Mandatory requirements. Compliance with this section requires that the mandatory provisions identified in Section 401.2 be met. All supply and return ducts not completely inside the *building thermal envelope* shall be insulated to a minimum of R-6.

405.3 Performance-based compliance. Compliance based on simulated energy performance requires that a proposed residence (*proposed design*) be shown to have an annual energy cost that is less than or equal to the annual energy cost of the *standard reference design*. Energy prices shall be taken from a source *approved* by the *code official*, such as the Department of Energy, Energy Information Administration's *State Energy Price and Expenditure Report*. *Code officials* shall be permitted to require time-of-use pricing in energy cost calculations.

Exception: The energy use based on source energy expressed in Btu or Btu per square foot of *conditioned floor area* shall be permitted to be substituted for the energy cost. The source energy multiplier for electricity shall be 3.16. The source energy multiplier for fuels other than electricity shall be 1.1.

405.4 Documentation.

405.4.1 Compliance software tools. Documentation verifying that the methods and accuracy of the compliance software tools conform to the provisions of this section shall be provided to the *code official*.

405.4.2 Compliance report. Compliance software tools shall generate a report that documents that the *proposed design* complies with Section 405.3. The compliance documentation shall include the following information:

1. Address or other identification of the residence;
2. An inspection checklist documenting the building component characteristics of the *proposed design* as listed in Table 405.5.2(1). The inspection checklist shall show results for both the *standard reference design* and the *proposed design*, and shall document all inputs entered by the user necessary to reproduce the results;
3. Name of individual completing the compliance report; and

MARYLAND-NATIONAL CAPITAL BUILDING INDUSTRY ASSOCIATION
1738 Elton Road, Suite 200, Silver Spring, Maryland 20903
(301) 445-5400 / Fax (301) 445-5499
Email : communications@mncbia.org
Website : www.mncbia.org

Expedited BILL 10-10, Buildings – Energy Efficiency – Repeal
Public Hearing before the Montgomery County Council
April 13, 2010

Good afternoon, I am Raquel Montenegro, representing the Maryland National Capital Building Industry Association (MNCBIA). The MNCBIA represents over 600 companies and the interests of more than 15,000 individuals in the building and development industry.

The Building Industry strongly supports energy efficiency measures, and sustainable practices. Many of our members build homes with appliances, windows and doors, and heating and cooling systems that often meet, and exceed Energy Star guidelines, and these home builders' business practices have been at the forefront of green building. It is important to note that, consequently, according to the EPA, homes built today are, on average 30% more energy efficient than homes built just ten years ago.

The MNCBIA supports Bill 10-10; we believe that adopting the International Efficient Construction Code (IECC) 2009 will result in new homes increasing their energy efficiency to Energy Star's requirement without incurring an unnecessary cost. We support the County's Executive decision to use "the visual inspection of various components of a building's air barrier and insulation" as the path to verification.

We appreciate the County Executive's recognition of the current economic instability, and his acknowledgment that our builders are striving to keep their costs in check, even if 'it is only' an additional cost of $200-400.

From the industry's perspective, there are several additional substantive reasons not to rely on the "blower door test" as a path for verification of energy efficiency.

- The door blower test is ***not*** a scientific measured process; it does not result in the same outcome, when repeated, or when done by two different raters – the velocity of the wind, the temperature of the air, the amount of humidity – do affect the barometric pressure inside the house which then alters the results. Sometimes the variation can range by as much as 10-20%.

- The tester must calculate the volume of cubic feet in the structure; depending on how accurate (or inaccurate) the measurements are, the final result of the blower door test can vary, by as much as 15%.

- The blower door test, which is conducted after a house is complete, ***does not pinpoint*** where the energy-inefficiencies occur ... it simply measures the 'air exchange.

BUILDING HOMES, CREATING NEIGHBORHOODS

Rather than rely on a test that is conducted ***after*** a house is finished, the additional inspections required by IECC 2009 will catch inefficiencies, ***during construction***, when the builder, with his subcontractor, can actually fix them within the construction schedule.

The IECC 2009 increases the energy-efficiency of new homes to the Energy Star guidelines, provides a means to verify the energy-efficiency, and meets the intent of Bill 30-07; we believe that it achieves that goal in the more cost-expeditious manner.

For these reasons, the MNCBIA supports Bill 10-10 and respectfully requests the Council to adopt the legislation, as drafted by the County Executive.

We appreciate your consideration of our perspective on the applicability of the IECC 2009 and Bill 10-10 and we look forward to working with Council and Council staff at the April 28 worksession to provide additional information that supports effective, and sustainable, energy efficiency in new residential single-family homes.

Thank you.

Expedited BILL 10-10
Montgomery County, MD
Public Hearing April 13, 2010

Good afternoon, I am Randy Melvin- Director Research and Standards for Winchester Homes, Inc. I am testifying on behalf of Winchester Homes, Inc. in support of County Executive's Expedited Bill 10-10.

For those of you may not be familiar with Winchester, we are a Bethesda Maryland based builder/developer. We are also the builder of Camberly Homes, our luxury line of homes. By listening to our customers, continuously improving our products and processes, and giving back to the communities where we work and live we have had the good fortune to be able to build over 18,000 homes in the area over the past 30 years. Over the past several year's improvements to our homes wrapping, flashing, windows and numerous other details have all contributed to enhanced air tightness and energy efficiency.

We have learned from our experiences, which include building EnergyStar Certified Homes, and recently completed energy related research, on our homes, that the information a blower door test, (a blower door test is a means of measuring air tightness of a home at a point in time under specific circumstances) in field practice, is not an exact science. While we believe it is a natural tendency to assume a blower door test would provide superior information to a visual air sealing inspection, our research, as well as others, have found this is not the case. The 2009 International Energy Conservation Code further substantiates this position by allowing the choice of either a specifically defined visual inspection or a blower door test for means of verifying the approximate air tightness of a home.

To briefly describe our research, we asked the energy experts at the NAHB Research Center to identify any gaps between our current 2006 energy codes built homes the requirements of the 2009 International Energy Conservation Code or equivalent to be adopted. They examined 4 of our homes, one of which had previously received Energy Star Certification. The homes represent a cross section of our product line. (Including towns , typical size single family home, large single family home, different jurisdiction/subdivisions, built by different subcontractors, and containing single and multiple zone heating and cooling systems.) The homes had previously been built under normal production and county inspection process under the 2006 energy code. We, our subcontractors, and inspectors had no knowledge we would be testing these homes. One of the specific items of interest was the air tightness and blower door tests were completed on each of these homes among other items. The result of the blower door tests are as follows:

Blower Door Test Results:

Model	Volume FT^3	Pressure ACH_{50}	Depress ACH_{50}	Average ACH_{50}	Required by 2009 IECC
Newbury (Typical Single)	44,838	6.5*	5.5	6.0	$\leq$7.0 ACH_{50}
Sinclair (Typical Single With Sunroom)	44,523	6.5*	5.5	6.0	$\leq$7.0 ACH_{50}
Southridge (Large Single Energy Star)	61,598	5.9	5.1	5.5	$\leq$7.0 ACH_{50}
Liberty (End Unit Townhouse)	27,078	7.1	5.9	6.5	$\leq$7.0 ACH_{50}

*Post test adjustment required

All the homes passed the air tightness requirements of the 2009 IECC or equivalent, even in the absence of the 2009 IECC detailed visual inspection. With the addition of the detailed inspection during construction it would clearly provide assurances of well sealed homes on a consistent basis.

Please note that because large homes have more interior volume relative to exterior surface area it is easier for them to meet air sealing requirements than with small homes. All else being equal, large homes will have less air leakage on a sq./ft. basis than smaller homes.

What was of particular interest and clearly demonstrates the inexact science of the blower test in a field application, is that when we compared the results of our blower door test done by a RESNET approved, nationally know Research Energy Engineer, with the RESNET approved Rater who had previously done the blower door test for the EnergyStar rating on this home, we found 100% variation. Specifically the Energy Star rater data showed the home to be 3.39 ACH_{50} or twice as air tight as the research center had calculated. Other have also found variations between rating on the same home by different raters are not uncommon.

Reasons for considerable variations in Bower Door test results, for the same home, include, but by no means are limited to all of the following:

- Variable interpretation and application for volume calculations for the same home. While RESNET provides the following definition for a homes volume calculation; "Determine conditioned and indirectly conditioned volume of space by multiplying conditioned floor area by ceiling height. The house may need to be split into different spaces with different ceiling heights and added to each other for both conditioned and indirectly conditioned spaces. For areas with vaulted ceilings, volume must be calculated geometrically." it is not uniformly interpreted and or executed with consistent level of detail, such as taking the time to detail every option in a home such as tray ceilings, bulkheads (dropped ceilings), bay windows that may impact the volume. In addition other variation are common such as variability in how floor area is measured. E.G. measuring walls to interior of drywall vs. outside face of brick veneer. It is interesting to note that while the Research Center calculated the volume of the Southridge at 61,590 ft^3 the EnergyStar RESNET rater calculated the exact same home to at 52,956 ft^3.

- Operator error in operating equipment. (E.G pressure hose forgotten to be stuck through the door)

- A cracked window was not observed during the test

- Calibration of the equipment was inaccurate at the time of the test

- Fire place damper open or closed (we have found this one item alone causes a variation of 400-450 CFM)

- One window or more sashes in a home not observed to be slightly cracked open.

- Tester is rushed and completes only 5 depressure tests in lieu of 5 pressure and 5 depressure.

- Errors in calculations even if starting with accurate raw data.

In conclusion, the developers of the 2009 IECC understood provided a choice of methods in verifying the air tightness of residential dwellings. While no method of inspection or measurement is perfect, the detailed visual inspection has many benefits and the blower door test clearly has many imperfections. We believe to the benefit of both consumers and builders alike, as provide for in the 2009 IECC, both of these methods of air tightness verification should be retained.

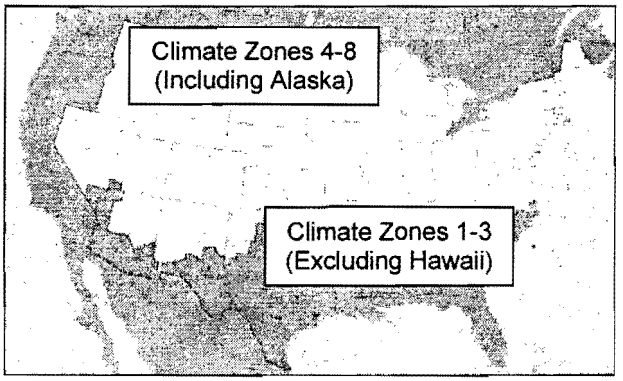
ENERGY STAR Qualified Homes
National Builder Option Package

The requirements for the ENERGY STAR Builder Option Package (BOP) are specified in the table below.

To qualify as ENERGY STAR using this BOP, a home must meet the requirements specified and be verified and field-tested in accordance with the HERS Standards by a RESNET-accredited Provider. Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built.[1]

	Hot Climates [2] (2004 IRC Climate Zones 1,2,3)	**Mixed and Cold Climates** [2] (2004 IRC Climate Zones 4,5,6,7,8)
Cooling Equipment (Where Provided)	Right-Sized [3]: • ENERGY STAR qualified A/C *(14.5 SEER / 12 EER)*; OR • ENERGY STAR qualified heat pump [4] *(14.5 SEER / 12 EER / 8.2 HSPF)*	Right-Sized [3]: • 13 SEER A/C; OR • ENERGY STAR qualified heat pump [4] *(14.5 SEER / 12 EER / 8.5 HSPF)*
Heating Equipment	• 80 AFUE gas furnace; OR • ENERGY STAR qualified heat pump [3,4] *(14.5 SEER / 12 EER / 8.2 HSPF)*; OR • 80 AFUE boiler; OR • 80 AFUE oil furnace	• ENERGY STAR qualified gas furnace *(90 AFUE)*; OR • ENERGY STAR qualified heat pump [3,4] *(See Note 3 for specifications)*; OR • ENERGY STAR qualified boiler *(85 AFUE)*; OR • ENERGY STAR qualified oil furnace *(85 AFUE)*
Thermostat [4]	ENERGY STAR qualified thermostat (except for zones with radiant heat)	
Ductwork	Leakage [5]: ≤ 4 cfm to outdoors / 100 sq. ft.; AND R-6 min. insulation on ducts in unconditioned spaces [6]	
Envelope	• Infiltration [7,8] (ACH50): 7 in CZ's 1-2 | 6 in CZ's 3-4 | 5 in CZ's 5-7 | 4 in CZ 8; AND • Insulation levels that meet or exceed the 2004 IRC [9]; AND • Completed Thermal Bypass Inspection Checklist [10]	
Windows	Windows that meet or exceed version 4.0 of the ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights (additional requirements for CZ 2 & 4)[11,12,13]	
Water Heater [14,15]	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 [16]: Integrated with space heating boiler	
Lighting and Appliances [17,18]	Five or more ENERGY STAR qualified appliances, light fixtures, ceiling fans equipped with lighting fixtures, water heaters, and/or ventilation fans	

Note: Due to the unique nature of some state codes and/or climates, EPA has agreed to allow regionally-developed definitions of ENERGY STAR in California, Hawaii, and the Pacific Northwest to continue to define program requirements. The States of Montana and Idaho may use either the requirements of the national program or the regionally-developed program in the Pacific Northwest.



Map is for illustrative purposes only and is based on figure N1101.2 from the 2004 International Residential Code (IRC).

ENERGY STAR Qualified Homes
National Builder Option Package Notes

1. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:

    a. In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;

    b. In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Furthermore, qualification shall still be allowed if the rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation).

2. The appropriate climate zone shall be determined by the 2004 International Residential Code (IRC), Figure N1101.2.

3. Cooling equipment shall be sized according to the latest editions of ACCA Manuals J and S, ASHRAE 2001 Handbook of Fundamentals, or an equivalent procedure. Maximum oversizing limit for air conditioners and heat pumps is 15% (with the exception of heat pumps in Climate Zones 5 - 8, where the maximum oversizing limit is 25%). The following operating conditions shall be used in the sizing calculations and verified where reviewed by the rater:

    Outdoor temperatures shall be the 99.0% and 1.0% design temperatures as published in the ASHRAE Handbook of Fundamentals for the home's location or most representative city for which design temperature data are available; Indoor temperatures shall be 75 F for cooling and 70 F for heating; Infiltration rate shall be selected as "tight", or the equivalent term.

    In specifying equipment, the next available size may be used. In addition, indoor and outdoor coils shall be matched in accordance with ARI standards.

    The stated efficiency requirements are aligned with the increased requirements for ENERGY STAR labeled central air conditioners and air-source heat pumps that went into effect as of January 1, 2009. Equipment manufactured before January 1 is still eligible to earn the ENERGY STAR based on the old performance level. Therefore, there will be a transition period when labeled equipment is commercially available at both the old and new performance levels. Builders must transition to equipment meeting these new ENERGY STAR requirements as stocks of equipment qualified at the old performance levels are exhausted.

4. Homes with heat pumps in Climate Zones 4 and 5 must have an HSPF ≥ 8.5, which exceeds the ENERGY STAR minimum of 8.2 HSPF. Homes with heat pumps in Climate Zones 6, 7, and 8 cannot be qualified using this BOP, but can earn the label using the ENERGY STAR Performance Path requirements. In homes in all Climate Zones with heat pumps that have programmable thermostats, the thermostat must have "Adaptive Recovery" technology to prevent the excessive use of electric back-up heating.

5. Ducts must be sealed and tested to be ≤ 4 cfm to outdoors / 100 sq. ft. of conditioned floor area, as determined and documented by a RESNET-certified rater using a RESNET-approved or equivalent ASTM-approved testing protocol. Duct leakage testing can be waived if all ducts and air handling equipment are located in conditioned space (i.e., within the home's air and thermal barriers) AND the envelope leakage has been tested to be ≤ 3 ACH50 OR ≤ 0.25 CFM 50 per sq. ft. of the building envelope.

6. EPA recommends, but does not require, locating ducts within the home's conditioned space (i.e., inside the air and thermal barriers), and using a minimum of R-4 insulation for ducts inside the conditioned space to prevent condensation.

7. Envelope leakage must be determined by a RESNET-certified rater using a RESNET-approved testing protocol.

8. To ensure consistent exchange of indoor air, whole-house mechanical ventilation is recommended, but not required.

9. Insulation levels of a home must meet or exceed Sections N1102.1 and N1102.2 of the 2004 IRC. These sections allow for compliance to be determined by meeting prescriptive insulation requirements, by using U-factor alternatives, or by using a total UA alternative. These sections also provide guidance and exceptions that may be used. However, note that the U-factor for steel-frame envelope assemblies addressed in Section N1102.2.4 shall be calculated using the ASHRAE zone method, or a method providing equivalent results, and not a series-parallel path calculation method as is stated in the code. Additionally, Section N1102.2.2, which allows for the reduction of ceiling insulation in space constrained roof/ceiling assemblies, shall be limited to 500 sq. ft. or 20% of ceiling area, whichever is less. In all cases, insulation shall be inspected to Grade I installation as defined in the RESNET Standards by a RESNET-certified rater.

    Note that the fenestration requirements of the 2004 IRC do not apply to the fenestration requirements of the National Builder Option Package. Therefore, if UA calculations are performed, they must use the IRC requirements (with the exception of fenestration) plus the fenestration requirements contained in the national BOP. For more information, refer to the "Codes and Standards Information" document.

10. The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label.

11. Window performance levels must meet or exceed ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights— version 4.0, with additional requirements for climate zones 2 and 4. Refer to the county-level BOPs on EPA's Web site for the specific window performance levels required in each county of the country. Additional information about version 5.0 of the

program requirements for windows, which is more stringent and offers additional savings, can be found at www.energystar.gov/windows.

12. All decorative glass and skylight window area counts toward the total window area to above-grade conditioned floor area (WFA) ratio. For homes with a WFA ratio >18%, the following additional requirements apply:
    a. In IRC Climate Zones 1, 2, and 3, an improved window SHGC is required, and is determined by:
    Required SHGC = [0.18 / WFA] x [ENERGY STAR SHGC]
    Where the ENERGY STAR SHGC is the minimum required SHGC of the climate-appropriate window specified in this BOP.
    b. In IRC Climate Zones 4, 5, 6, 7, and 8, an improved window U-Value is required, and is determined by:
    Required U-Value = [0.18 / WFA] x [ENERGY STAR U-Value]
    Where the ENERGY STAR U-Value is the minimum required U-Value of the climate-appropriate window specified in this BOP.
13. Up to 0.75% WFA may be used for decorative glass that does not meet ENERGY STAR requirements. For example, a home with total above-grade conditioned floor area of 2,000 sq. ft. may have up to 15 sq. ft. (0.75% of 2,000) of decorative glass.
14. More efficient water heating equipment represents a significant opportunity for energy savings and a meaningful way to differentiate ENERGY STAR qualified homes from those with standard equipment. An ENERGY STAR qualified water heater not only satisfies the Water Heater efficiency requirements, but also counts toward the requirement for five or more ENERGY STAR qualified lighting products or appliances as detailed in the Lighting and Appliances guideline.
15. To determine domestic hot water (DHW) EF requirements for additional tank sizes, use the following equations:

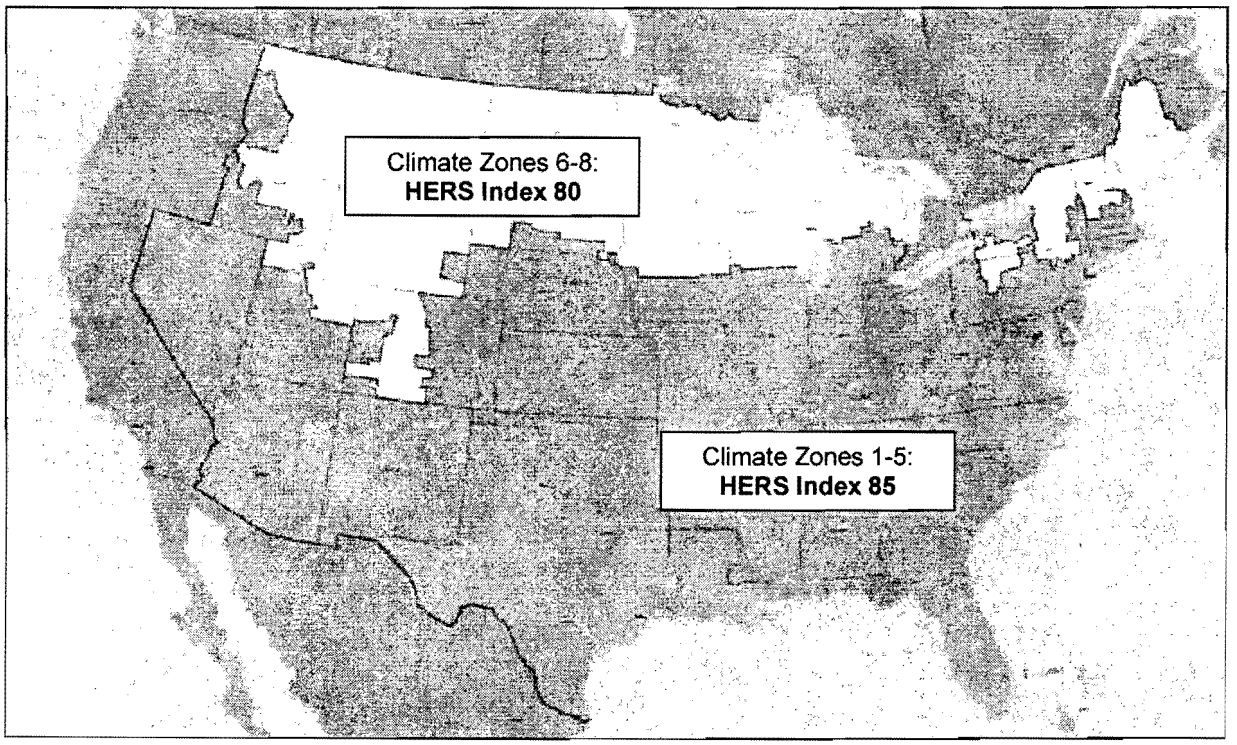
    Gas DHW EF ≥ 0.69 - (0.002 x Tank Gallon Capacity); Electric DHW EF ≥ 0.97 - (0.001 x Tank Gallon Capacity).
16. In homes with gas or oil hydronic space heating, water heating systems must have an efficiency ≥ 0.78 EF. This may be met through the use of an instantaneous water heating system or an indirect storage system with a boiler that has a system efficiency ≥ 85 AFUE. Homes with tankless coil hot water heating systems cannot be qualified using this BOP, but can earn the label using the ENERGY STAR Performance Path requirements.
17. Any combination of ENERGY STAR qualified products listed may be installed to meet this requirement. ENERGY STAR qualified ventilation fans include range hood, bathroom, and inline fans. ENERGY STAR qualified lighting fixtures installed in the following locations shall not be counted: storage rooms (e.g., closets, pantries, sheds), or garages. Eligible appliances include ENERGY STAR qualified refrigerators, dish washers, and washing machines.
18. Efficient lighting fixtures represent a significant opportunity for persistent energy savings and a meaningful way to differentiate ENERGY STAR qualified homes from those meeting minimum code requirements. To learn more about the benefits of increasing the use of efficient fixtures through the installation of the ENERGY STAR Advanced Lighting Package (ALP), refer to www.energystar.gov/alp.

ENERGY STAR Qualified Homes
National Performance Path Notes

ENERGY STAR Performance Requirements:

To qualify as ENERGY STAR, a home must meet the minimum requirements specified below and be verified and field-tested in accordance with the RESNET Standards by a RESNET-accredited Provider. Note that compliance with these guidelines is not intended to imply compliance with all local code requirements that may be applicable to the home to be built.[1]

Maximum HERS Index Required to Earn the ENERGY STAR[2]



Note: Due to the unique nature of some state codes and/or climates, EPA has agreed to allow regionally-developed definitions of ENERGY STAR in California, Hawaii, and the Pacific Northwest to continue to define program requirements. The States of Montana and Idaho may use either the requirements of the national program or the regionally-developed program in the Pacific Northwest.

ENERGY STAR Mandatory Requirements:

<table>
<tr><td>Envelope [3,4,5]</td><td>Completed Thermal Bypass Inspection Checklist</td></tr>
<tr><td>Ductwork [6,7]</td><td>Leakage ≤ 6 cfm to outdoors / 100 sq. ft.</td></tr>
<tr><td>ENERGY STAR Products</td><td>Include at least one ENERGY STAR qualified product category:
▪ Heating or cooling equipment [8,9]; OR
▪ Windows that meet the following eligibility requirements [10]; OR
<table>
<tr><td>ENERGY STAR Window Zone:</td><td>Southern</td><td>South / Central</td><td>North / Central</td><td>Northern</td></tr>
<tr><td>Window U-Value:</td><td>≤ 0.65</td><td>≤ 0.40</td><td>≤ 0.40</td><td>≤ 0.35</td></tr>
<tr><td>Window SHGC:</td><td>≤ 0.40</td><td>≤ 0.40</td><td>≤ 0.55</td><td>Any</td></tr>
</table>
▪ Water heating equipment; OR
▪ Five or more ENERGY STAR qualified light fixtures [11,12], appliances [13], ceiling fans equipped with lighting fixtures, and/or ventilation fans [14]</td></tr>
<tr><td>ENERGY STAR Scoring Exceptions</td><td>▪ On-site power generation may not be used to achieve the HERS Index required to qualify the home.
▪ A maximum of 20% of all screw-in light bulb sockets in the home may use compact fluorescent lamps (CFLs) to achieve the HERS index required to qualify the home. CFLs used for this purpose must be ENERGY STAR qualified.</td></tr>
</table>

ENERGY STAR Qualified Homes
National Performance Path Notes

1. Where requirements of the local codes, manufacturers' installation instructions, engineering documents, or regional ENERGY STAR programs overlap with the requirements of these guidelines, EPA offers the following guidance:
    a. In cases where the overlapping requirements exceed the ENERGY STAR guidelines, these overlapping requirements shall be met;
    b. In cases where overlapping requirements conflict with a requirement of these ENERGY STAR guidelines (e.g., slab insulation is prohibited to allow visual access for termite inspections), then the conflicting requirement within these guidelines shall not be met. Furthermore, qualification shall still be allowed if the rater has determined that no equivalent option is available that could meet the intent of the conflicting requirement of these ENERGY STAR guidelines (e.g., switching from exterior to interior slab edge insulation).
2. The appropriate climate zone for each building site shall be determined by the 2004 International Residential Code (IRC), Table N1101.2. The HERS Index must be calculated in accordance with the RESNET Mortgage Industry National Home Energy Rating Standards.
3. The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label.
4. Envelope leakage must be determined by a RESNET-certified rater using a RESNET-approved testing protocol.
5. To ensure consistent exchange of indoor air, whole-house mechanical ventilation is recommended, but not required.
6. Ducts must be sealed and tested to be ≤ 6 cfm to outdoors / 100 sq. ft. of conditioned floor area, as determined and documented by a RESNET-certified rater using a RESNET-approved testing protocol. If total duct leakage is ≤ 6 cfm to outdoors / 100 sq.ft. of conditioned floor area, then leakage to outdoors does not need to be tested. Duct leakage testing can be waived if all ducts and air handling equipment are located in conditioned space (i.e., within the home's air and thermal barriers) AND the envelope leakage has been tested to be ≤ 3 ACH50 OR ≤ 0.25 CFM 50 per sq. ft. of the building envelope. Note that mechanical ventilation will be required in this situation.
7. EPA recommends, but does not require, locating ducts within conditioned space (i.e., inside the air and thermal barriers), and using a minimum of R-4 insulation for ducts inside conditioned space to prevent condensation.
8. All cooling equipment, regardless of whether it is used to satisfy the ENERGY STAR products requirement, must be sized according to the latest editions of ACCA Manuals J and S, ASHRAE 2001 Handbook of Fundamentals, or an equivalent computation procedure. Maximum oversizing limit for air conditioners and heat pumps is 15% (with the exception of heat pumps in Climate Zones 5 - 8, where the maximum oversizing limit is 25%). This can be accomplished either by the rater performing the calculations or reviewing documentation provided by the professional contractor or engineer who calculated the sizing (e.g., HVAC contractor). The following operating conditions shall be used in the sizing calculations and verified where reviewed by the rater:

    Outdoor temperatures shall be the 99.0% design temperatures as published in the ASHRAE Handbook of Fundamentals for the home's location or most representative city for which design temperature data are available. Note that a higher outdoor air design temperature may be used if it represents prevailing local practice by the HVAC industry and reflects extreme climate conditions that can be documented with recorded weather data; Indoor temperatures shall be 75^0 F for cooling; Infiltration rate shall be selected as "tight", or the equivalent term.

    In specifying equipment, the next available size may be used. In addition, indoor and outdoor coils shall be matched in accordance with ARI standards.
9. In homes with heat pumps that have programmable thermostats, the thermostat must have "Adaptive Recovery" technology to prevent the excessive use of electric back-up heating.
10. Where windows are used to meet the ENERGY STAR qualified product requirement, they shall be ENERGY STAR qualified or meet or exceed the listed eligibility requirements listed in this document, which are aligned with the ENERGY STAR Program Requirements for Residential Windows, Doors, and Skylights— version 4.0. To determine the ENERGY STAR window zone assigned to each county of the country, download the applicable county-level BOP on EPA's Web site and refer to the top right corner of the document. Additional information about version 5.0 of the program requirements for windows, which is more stringent and offers additional savings, can be found at www.energystar.gov/windows.
11. For the purposes of meeting the ENERGY STAR requirement, qualified lighting fixtures in the following locations cannot be counted: storage rooms (e.g., closets, pantries, sheds), or garages.
12. To learn more about the benefits of increasing the use of efficient fixtures through the installation of the ENERGY STAR Advanced Lighting Package (ALP), refer to www.energystar.gov/alp.
13. Eligible appliances include ENERGY STAR qualified refrigerators, dish washers, and washing machines.
14. ENERGY STAR qualified ventilation fans include range hood, bathroom, and inline fans.

ENERGY STAR Qualified Homes
Thermal Bypass Inspection Checklist

The Thermal Bypass Inspection Checklist must be completed for homes to earn the ENERGY STAR label. The Checklist requires visual inspection of framing areas where air barriers are commonly missed and inspection of insulation to ensure proper alignment with air barriers, thus serving as an extra check that the air and thermal barriers are continuous and complete. State, local, and regional codes, as well as regional ENERGY STAR program requirements, supersede the items specified in this Checklist.

Guidance on Completing the Thermal Bypass Inspection Checklist:

1. Accredited HERS Providers and certified home energy raters shall use their experience and discretion in verifying that each Inspection Checklist item is installed per the inspection guidelines (e.g., identifying minor defects that the Provider or rater deems acceptable versus identifying major defects that undermine the intent of the Checklist item).

2. Alternative methods of meeting the Checklist requirements may be used in completing the Checklist, if the Provider deems them to be equivalent, or more stringent, than the Inspection Checklist guidelines.

3. In the event an item on the Checklist cannot be verified by the rater, the home cannot be qualified as ENERGY STAR, unless the builder assumes responsibility for verifying that the item has met the requirements of the Checklist. This option is available at the discretion of the Provider or rater but may not be used to verify more than six (6) items on the Inspection Checklist. This responsibility will be formally acknowledged by the builder signing-off on the Checklist for the item(s) that they verified. The column titled "N/A" should be used when the checklist item is not present in the home or when local code requirements take precedent.

4. The Checklist may be completed for a batch of homes using a RESNET-approved sampling protocol when qualifying homes as ENERGY STAR. For example, if the approved sampling protocol requires rating one in seven homes, then the Checklist will be completed for the one home which was rated.

5. In the event that a Provider or rater finds an item that is inconsistent with the Checklist Inspection guidelines, the home cannot be qualified as ENERGY STAR until the item is corrected in a manner that meets the ENERGY STAR requirements. If correction of the item is not possible, the home cannot earn the ENERGY STAR label.

6. The Provider or rater is required to keep a hard copy record of the completed and signed Checklist. The signature of a builder employee is also required if the builder verified compliance with any item on the Checklist.

7. For purposes of this Checklist, an air barrier is defined as any solid material that blocks air flow between a conditioned space and an unconditioned space, including necessary sealing to block excessive air flow at edges and seams. Additional information on proper air sealing of thermal bypasses can be found on the Building America Web site (www.eere.energy.gov/buildings/building_america) and in the EEBA Builder's Guides (www.eeba.org). These references include guidance on identifying and sealing air barriers, as well as details on many of the items included in the Checklist.

ENERGY STAR Qualified Homes
Thermal Bypass Inspection Checklist

Home Address:_____ City:_____ State:_____

Thermal Bypass	Inspection Guidelines	Corrections Needed	Builder Verified	Rater Verified	N/A
1. Overall Air Barrier and Thermal Barrier Alignment	**Requirements:** Insulation shall be installed in full contact with sealed interior and exterior air barrier except for alternate to interior air barrier under item no. 2 *(Walls Adjoining Exterior Walls or Unconditioned Spaces)*				
	All Climate Zones:				
	1.1 Overall Alignment Throughout Home	☐	☐	☐	☐
	1.2 Garage Band Joist Air Barrier (at bays adjoining conditioned space)	☐	☐	☐	☐
	1.3 Attic Eave Baffles Where Vents/Leakage Exist	☐	☐	☐	☐
	Only at Climate Zones 4 and Higher:				
	1.4 Slab-edge Insulation (A maximum of 25% of the slab edge may be uninsulated in Climate Zones 4 and 5.)	☐	☐	☐	☐
	Best Practices Encouraged, Not Req'd.:				
	1.5 Air Barrier At All Band Joists (Climate Zones 4 and higher)	☐	☐	☐	☐
	1.6 Minimize Thermal Bridging (e.g., OVE framing, SIPs, ICFs)	☐	☐	☐	☐
2. Walls Adjoining Exterior Walls or Unconditioned Spaces	**Requirements:** • Fully insulated wall aligned with air barrier at both interior and exterior, **OR** • Alternate for **Climate Zones 1 thru 3**, sealed exterior air barrier aligned with RESNET Grade 1 insulation fully supported • Continuous top and bottom plates or sealed blocking				
	2.1 Wall Behind Shower/Tub	☐	☐	☐	☐
	2.2 Wall Behind Fireplace	☐	☐	☐	☐
	2.3 Insulated Attic Slopes/Walls	☐	☐	☐	☐
	2.4 Attic Knee Walls	☐	☐	☐	☐
	2.5 Skylight Shaft Walls	☐	☐	☐	☐
	2.6 Wall Adjoining Porch Roof	☐	☐	☐	☐
	2.7 Staircase Walls	☐	☐	☐	☐
	2.8 Double Walls	☐	☐	☐	☐
3. Floors between Conditioned and Exterior Spaces	**Requirements:** • Air barrier is installed at any exposed fibrous insulation edges • Insulation is installed to maintain permanent contact with sub-floor above including necessary supports (e.g., staves for blankets, netting for blown-in) • Blanket insulation is verified to have no gaps, voids or compression. • Blown-in insulation is verified to have proper density with firm packing				
	3.1 Insulated Floor Above Garage	☐	☐	☐	☐
	3.2 Cantilevered Floor	☐	☐	☐	☐
4. Shafts	**Requirements:** Openings to unconditioned space are fully sealed with solid blocking or flashing and any remaining gaps are sealed with caulk or foam (provide fire-rated collars and caulking where required)				
	4.1 Duct Shaft	☐	☐	☐	☐
	4.2 Piping Shaft/Penetrations	☐	☐	☐	☐
	4.3 Flue Shaft	☐	☐	☐	☐
5. Attic/ Ceiling Interface	**Requirements:** • All attic penetrations and dropped ceilings include a full interior air barrier aligned with insulation with any gaps fully sealed with caulk, foam or tape • Movable insulation fits snugly in opening and air barrier is fully gasketed				
	5.1 Attic Access Panel (fully gasketed and insulated)	☐	☐	☐	☐
	5.2 Attic Drop-down Stair (fully gasketed and insulated)	☐	☐	☐	☐
	5.3 Dropped Ceiling/Soffit (full air barrier aligned with insulation)	☐	☐	☐	☐
	5.4 Recessed Lighting Fixtures (ICAT labeled and sealed to drywall)	☐	☐	☐	☐
	5.5 Whole-house Fan (insulated cover gasketed to the opening)	☐	☐	☐	☐
6. Common Walls Between Dwelling Units	**Requirements:** Gap between drywall shaft wall (i.e., common wall) and the structural framing between units is fully sealed at all exterior boundary conditions				
	6.1 Common Wall Between Dwelling Units	☐	☐	☐	☐

Home Energy Rating Provider: _____ Rater Inspection Date: _____ Builder Inspection Date: _____

Home Energy Rater Company Name: _____ Builder Company Name: _____

Home Energy Rater Signature: _____ Builder Employee Signature: _____

EXEC REG

055336

CHS
CC
SBF
LL
AG
OLO
AM

Isiah Leggett
County Executive

OFFICE OF THE COUNTY EXECUTIVE
ROCKVILLE, MARYLAND 20850

RECEIVED
MONTGOMERY COUNTY
COUNCIL
2010 MAR 25 PM 3:41

MEMORANDUM

March 25, 2010

Method 2

TO: Nancy Floreen, President
Montgomery County Council

FROM: Isiah Leggett, County Executive

SUBJECT: Executive Regulation 26-09
"Adoption of the 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes"

The purpose of this memorandum is to transmit Executive Regulation 26-09, "Adoption of the 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes," for review and consideration by the County Council. Executive Regulation 26-09 adopts the 2009 editions of the International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes. These editions are the most up-to-date versions of the model codes and will keep Montgomery County in conformance with the Maryland Building Performance Standard. This regulation applies to the construction of public and private structures within the County, and would supersede Executive Regulation 28-07.

The regulation was advertised in the December 2009 issue of the Montgomery County Register with a comment deadline of January 15, 2010. The comments that were received are attached. A public hearing was held on December 17, 2009. Two people presented testimony during the hearing: Mr. John Stovall and Mr. Randy Melvin, both representing the Codes and Standards Committee for the Maryland National Capital Building Industry Association (MNCBIA). The testimony was primarily favorable to the adoption of the 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes. However, they requested additional clarification or justification for several items, which were also included in MNCBIA's written comments. The Department reviewed all the comments and addressed each of the concerns expressed directly with those who commented, to their satisfaction.

A Fiscal Impact Statement is also attached.

If there are any questions, please call Hadi Mansouri, Division Chief at 240-777-6233.

Attachments

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Montgomery County Regulation on:

ADOPTION OF THE 2009 INTERNATIONAL BUILDING, ENERGY CONSERVATION, MECHANICAL, FUEL-GAS, AND RESIDENTIAL CODES

DEPARTMENT OF PERMITTING SERVICES

Issued by:
The County Executive
Regulation No. [28-07] 26-09
Authority: Code Sections 8-13 and 8-14
Supersedes: Regulations No. [24-4] 28-07
Council Review: Method 2 under Code Section 2A-15
Register Vol. 26, Issue 12
Comment Deadline: January 15, 2010
Effective Date:
Sunset Date: None

SUMMARY: This regulation adopts the [2006] 2009 editions of the International Building Code (IBC), the International Energy Conservation Code (IECC), the International Fuel Gas Code (IFGC), the International Mechanical Code (IMC), and the International Residential Code (IRC) with amendments. It governs all buildings and structures within Montgomery County.

ADDRESS: Department of Permitting Services
255 Rockville Pike, Second Floor
Rockville, Maryland 20850-4166

STAFF CONTACT: Hadi Mansouri, Chief, Division of Building Construction 240-777-6233

BACKGROUND INFORMATION: Inasmuch as the International Code Council (ICC) publishes the international series (I-series) of construction standards every three years, and the State of Maryland adopts these standards and obligates its political subdivisions to adopt the standards within a specific time period. Montgomery County must adopt these standards within the prescribed period.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 1. This regulation is adopted pursuant to Sections 8-13 and 8-14 of the Montgomery County Code (MCC), 1994, as amended, and applies to the construction, alteration, addition, repair, removal, demolition, use, location, occupancy, and/or maintenance of all buildings and structures, and their service equipment, within Montgomery County. It supersedes Executive Regulations [24-04]28-07, dated [April 1, 2005]May 13, 2008, and all previous regulations adopting the BOCA and the International Code Council (ICC) standards. Its purpose is to adopt the [2006]2009 editions of the IBC, the IECC, the IFGC, the IMC, and the IRC with amendments necessary to achieve uniformity and consistency with Maryland and Montgomery County laws and ordinances, as well as department/division policies and procedures. Where this regulation differs from the Montgomery County Fire Safety Code it does not preempt or negate any more restrictive provisions of that code.

Sec. 2. Wherever the IBC references the ICC Electrical Code, replace the reference with Chapter 17 of the Montgomery County Code. Wherever the IBC references the ICC/ANSI A117.1, replace the reference with the Maryland Accessibility Code.

AMENDMENTS TO THE [2006]2009 INTERNATIONAL BUILDING CODE (IBC)

Sec. 3. Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."

Sec. 4. Section 101.2. Number the existing exception as #1 and add a second exception (#2) to read as follows: Existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code.

Sec. 5. Sections 101.4.3, 101.4.4, and 101.4.5. Delete.

Sec. 6. Section 101.4.[2]1. Delete and replace as follows: The provisions of the International Fuel Gas Code shall apply to the installation of Liquefied Petroleum gas systems and appliances, fuel gas appliances and related accessories as covered in this code. These requirements apply to the inlet connections of appliances and to the installation and operation of residential and commercial gas appliances and related accessories. The provisions of the International Fuel Gas Code apply to the extent that they are adopted in this regulation.

Sec. 7. Section 102.6. [Delete]Replace the phrase "the International Property Maintenance Code or" with the phrase "the Montgomery County Fire Safety Code and".

Sec. 8. Sections 103, [107]108, [110]111, and [112]113, except [112.2]113.2. Delete.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 9. Section 105.1. Add the following: A separate permit is required for each legal address and for each separate building at a legal address.

Sec. 10. Section 105.2. Delete all except subsections 105.2.1, 105.2.2, and 105.2.3.

Sec. 11. Sections [105]105.3, 105.4, 105.5, 105.6, and 105.7. Delete.

Sec. 12. Section 10[8]9.1. Add a second sentence to read: Required fees shall be paid for each separate permit application.

Sec. 13. Sections 10[8]9.2 through 10[8]9.6. Delete.

Sec. 14. Section 11[9]0.3.10. Add the following: The final inspection must be requested and approved before a building (or portion thereof) including equipments and appliances are used or occupied, whether or not a valid certificate of use and occupancy exists.

Sec. 15. [Section 305.2. Change 2½ to 2] Sections 114 and 115. Delete.

Sec. 16. [Section 308.2. Change the word "five" to "eight," and the word "six" to "nine."]Section 305.2. Change 2½ to 2.

Sec. 17. [Section 308.3.1. Change 2½ to 2] Section 308.2. Change the word "five" to "eight," and the word "six" to "nine."

Sec. 18. [Section 308.5.2. In code text and exception, change 2 ½ to 2].Section 308.3.1. Change 2½ to 2 in the definition of Child Care Facilities.

Sec. 19. [Section 310.1. After the description for Group R-3 occupancies, add the following:

Exceptions:

1. A family day care home, which is a dwelling in which child day care services are provided: a) in the home where the registrant is the provider and a resident, or where the registrant is not a resident, but more than half of the children cared for are residents; b) for not more than eight children, including the children of the provider, who are less than six years of age, and; c) where staffing complies with state and local regulations, but no more than two non-resident staff members are on site at any time, may be classified as Group R-3, or as a one- or two-family dwelling conforming to the IRC; or

2. A group day care home, which is a dwelling in which child day care services are provided: a) in the home where the licensee is the provider and a resident; b) for nine to 12 children, including the children of the provider, and; c) where staffing complies with state and local regulations, but no more than three non-resident staff members are on site at any time, may be classified as Group R-3, or as a one- or two-family dwelling conforming to the IRC.

In the first sentence of Group R-4 change "five" to "eight".]Section 308.5.2. In code text and exception, change 2 ½ to 2.

Sec. 20. [Section 509.2. In the third condition, add the following sentence:" For the purposes of determining the number of stories above grade, a story above the 3-hour horizontal assembly shall be considered a story above grade regardless of the location of the average grade plane]Section 310.1. After the description for Group R-3 occupancies, add the following:

Exceptions:

1. A family day care home, which is a dwelling in which child day care services are provided: a) in the home where the registrant is the provider and a resident, or where the registrant is not a resident, but more than half of the children cared for are residents; b) for not more than eight children, including the children of the provider, who are less than six years of age, and; c) where staffing complies with state and local regulations, but no more than two non-resident staff members are on site at any time, may be classified as Group R-3, or as a one- or two-family dwelling conforming to the IRC; or

2. A group day care home, which is a dwelling in which child day care services are provided: a) in the home where the licensee is the provider and a resident; b) for nine to 12 children, including the children of the provider, and; c) where staffing complies with state and local regulations, but no more than three non-resident staff members are on site at any time, may be classified as Group R-3, or as a one- or two-family dwelling conforming to the IRC.

In the first sentence of Group R-4 change "five" to "eight".

Sec. 21. [Section 509.2. Add a sixth condition to read as follows:"6. A fire command center complying with section 911 shall be provided."]Section 403.2.1.2. Delete.

Sec. 22. [Section 707.14.1. Add the following sentence at the end of the section: Where an enclosed elevator lobby is provided, exit access corridors shall not be interrupted by an elevator lobby] Section 403.4.4. Delete the phrase "Section 510 of the International Fire

Code" and replace with "the Montgomery County Fire Safety Code".

Sec. 23. [Section 716.5.3. Replace the first sentence of Exception 2 with the following: "In buildings, other than Group H occupancies, equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, smoke dampers are not required where:" In Exception 2, paragraph 2.1, add the word "Domestic" in front of the word "Kitchen."]Section 411.1. Number the existing exception as #1 and add a second exception (#2) to read as follows: An amusement which is a multilevel play structure that is not more than 10 feet in height and has an aggregate horizontal projection not exceeding 160 square feet.

Sec. 24. [Section 903.1.1. Delete and replace with the following: 903.1.1 Alternative Protection. Where water as an extinguishing agent is not compatible with the fire hazard, or is prohibited by a law, statute, or ordinance, the affected area must be protected by an approved automatic fire-extinguishing system utilizing an extinguishing agent that is compatible with the fire hazard.]Section 419. Delete.

Sec. 25. [Section 903.1.3. Add the following sentence at the end of the section: Unless specifically permitted by this Code, automatic sprinkler systems in occupancies other than one and two family dwellings shall be installed in accordance with Section 903.3.1.1 or 903.3.1.2.]Section 422.3. Change "30" to "15". Change "2.8" to "1.4" and change "nonambulatory patient" to "occupant".

Sec. 26. [Section 905.3. After the section title add the following two sentences: In new installations where the code requires either Class II or III standpipes, Class I standpipes shall be installed. Occupant use hose is prohibited in new or existing buildings]Chapter 4. Add a new section 424 Residential Occupancies.

424.1 All R occupancies shall have appropriate radon control features prescribed in Appendix F in the International Residential Code, 2009 edition.

Sec. 27. [Section 907.3.3. Delete.]Section 501.2. Delete "and existing" in the first line. In the second sentence, Change the phrase "4 inches (102 mm)" to "6 inches (153 mm), except R-3 occupancies which shall be permitted to be 5 inches (127 mm)."

Sec. 28. [Section 909.9. Add the following sentence at the end of the section: In all cases, the design fire size shall not be less than 5000 Btu/s (5275 kW) unless approved by the building official and the fire official.]Section 509.2. Add two more conditions as follows:

8. For purposes of determining the number of stories above grade, a story above the 3-hour horizontal assembly shall be considered a story above grade regardless of the location of the average grade plane.

9. A fire command center complying with Section 911 shall be provided.

Sec. 29. [Section 909.16. In the third sentence, replace the words "approved location adjacent to the fire alarm control panel" with "location approved by the building official and the fire official".]Section 703.6. Amend item 3 to add a sentence as follows: "The sign or stenciling shall identify the fire resistance rating in hours."

Sec. 30. [Section 911. Replace the second sentence with the following, "The fire command center shall have a door directly to the exterior of the building on the address side. The exterior door to the fire command center shall be within 50 feet of a fire department access road. A fire department access box shall be provided within 6 feet of the exterior door to the fire command center. The exterior door to the fire command center shall be identified on the exterior face as the fire command center in a manner acceptable to the fire official."]Section 708.14.1. Add the following sentence at the end of the section: Where an enclosed elevator lobby is provided, exit access corridors shall not be interrupted by an elevator lobby.

Sec. 31. [Table 1004.1.1. Add an entry for "Shell Office Spaces" with an occupant load factor of 65 gross square feet per person.]Section 716.5.3. Replace the first sentence of Exception 2 with the following: "In buildings, other than Group H occupancies, equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, smoke dampers are not required where:"

Sec. 32. [Section 1009.3, Exception 4. Change 7.75 to 8.25 and in both occurrences Change 10 to 9]Section 903.1.1. Delete and replace with the following: 903.1.1 Alternative Protection. Where water as an extinguishing agent is not compatible with the fire hazard, or is prohibited by a law, statute, or ordinance, the affected area must be protected by an approved automatic fire-extinguishing system utilizing an extinguishing agent that is compatible with the fire hazard.

Sec. 33. [Section 1013.1. After the first occurrence of the phrase "floor or grade below" insert the phrase "and retaining walls with a difference in grade level on either side of the wall exceeding 30 inches (762 mm) and within 2 feet (610 mm) of a walk, path, parking lot, or driveway on the high side."]Section 903.2.1.2. Add a fourth condition to read as follows:

4. The assembly occupancy is one of the following (1) Bars with live entertainment, (2) Dance halls, (3) Discotheques, (4) Nightclubs, or (5) Assembly occupancies with festival seating as defined in the Life Safety Code, 2009 edition.

Sec. 34. [Section 1013.2. Add a third exception: Exception 3. In occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, interior guards shall be permitted to be not less than 36 inches high.]Section 903.2.8. Add an exception to read as follows:

An automatic sprinkler system throughout the building is not required when all of the following conditions are met:

1. The building is a mixed use building, that is not otherwise required to be protected throughout by automatic sprinklers;
2. There is only one dwelling unit in the building;
3. The dwelling unit is separated from the remainder of the building by fire barriers in accordance with Section 707 and horizontal assemblies in accordance with Section 712 having a fire resistance rating not less than 2 hours;
4. The means of egress from the dwelling unit is independent from the other occupancies; and,
5. The dwelling unit is protected throughout with automatic sprinklers. The automatic sprinkler system installed for this exception shall be permitted to be designed in accordance with Section 903.3.1.3.

Sec. 35. [Section 1015.2.1. Add the following exception: Exception 3. In buildings of Group R-2 four stories or less in height above the grade plane that are served by two required exterior stairways connected by an open-ended corridors shall be in compliance with Section 1023.6, Exception 4, and shall be provided with remoteness between the near edge of the required landings that are separated by a distance of at least one fourth the length of the maximum overall diagonal dimension of the area served.]Section 903.3.1.3. Add the following sentences at the end of the section: Automatic sprinkler systems in day care homes with 12 clients or less located in converted one and two family dwellings or townhouses shall be permitted to be installed in accordance with NFPA 13D. Unless specifically permitted by this Code, automatic sprinkler systems in occupancies, other than one and two family dwellings or townhouses, shall be installed in accordance with Section 903.3.1.1 or 903.3.1.2.

Sec. 36. [Section 1017.1 Replace Exception 4 with the following: A fire resistance rating is not required for corridors within single-tenant Group B occupancies.]Section 905.3. After the section title add the following two sentences:
In new installations where the code requires either Class II or III standpipes, Class I standpipes shall be installed. Occupant use hose is prohibited in new or existing buildings.

Sec. 37. [Section 1018. Add a new section 1018.3 to read as follows:

Section 1018.3. Fire Department Access to Floors. Not less than one exit stair which serves all stories of the building shall be accessible by an internal corridor from the main entrance of the building or the fire department response location.]Section 909.9. Add the following sentence at the end of the section: In all cases, the design fire size shall not be less than 5000 Btu/s (5275 kW) unless approved by the building official and the fire official.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 38. [Section 1024.1, Exception 1, Item 1.1. Add two sentences at the end of the item that read as follows:

The door to the exterior of the building shall be in direct sight of the point of the termination of the exit. For the purposes of this section, the use of exit signs or other exit markings shall not be considered as making the way to the exterior "readily visible and identifiable".]Section 909.16. In the third sentence, replace the words "approved location adjacent to the fire alarm control panel" with "location approved by the building official and the fire official".

Sec. 39. [Chapter 11. Delete and replace with the Maryland Accessibility Code.]Section 911.1.1. Replace with the following, "The fire command center shall have a door directly to the exterior of the building on the address side. The exterior door to the fire command center shall be within 50 feet of a fire department access road. A fire department access box shall be provided within 6 feet of the exterior door to the fire command center. The exterior door to the fire command center shall be identified on the exterior face as the fire command center in a manner acceptable to the fire official."

Sec. 40. [Table 1607.1 Item 30 Roofs. Modify the uniform live load value for "Ordinary flat, pitched and curved roofs" to 30 pounds per square foot.]Section 911.1.5.

Amend item 2 to read "The fire department communications system which may include an in-building public safety radio enhancement system monitoring panel."

Amend item 11 to read "Fire pump status indicators and remote starting."

Add an item 18 which reads, "A shunt trip device to disconnect the electrical service to the building."

Sec. 41. [Section 1608.2. After the title add the following sentence: "Design ground snow loads for Montgomery County shall be not less than 30 pounds per square foot."]Section 915.1. Replace with the following: Emergency responder radio coverage shall be assured in all newly constructed below ground floors of a building, all floors in buildings greater than 25000 ft² per floor, and to all floors of buildings greater than 3 stories in height.

Sec. 42. [Section 1612.3. After the heading, delete the text and replace with the following: The Floodplain District in Montgomery County is established in Section 3 of Executive Regulation 108-92 AM, Floodplain Regulations, per the authority in Article III, Chapter 19 of the Montgomery County Code.]Add Sections 915.2 and 915.3 as follows:

Section 915.2. Every floor area in a building or structure which can not achieve the required level of emergency responder radio coverage as established by Montgomery County Department of Technology Services shall be provided with an in-building public

safety radio enhancement system in accordance with the Montgomery County Fire Safety Code.

Section 915.3. Inspection and Testing. Emergency responder radio coverage and in-building public safety radio enhancement system must be tested, and inspected by approved individuals. The results of the testing and inspection shall be certified to the code official prior to issuance of an occupancy permit.

Sec. 43. [Add a new section as follows: Section 1801.2.2 Special conditions. Design and construction of all buildings and structures within 1000 feet of a known municipal solid waste (MSW) landfill site that does not currently have an operational land fill gas (LFG) monitoring and removal system, shall require special engineering of foundation systems, including walls and floor slabs, to provide for the safety of occupants against hazards from LFG concentration. Special subsurface investigations shall be conducted, at the owner's expense, by an approved and qualified engineer or geologist to determine the extent of the potential hazard. The study must identify the potential hazards, and mitigation plans for the site must be incorporated into the construction documents and approved prior to issuance of a building permit. All buildings and structures within 1000 feet of the boundary of a MSW landfill shall be equipped with a methane gas detector with an alarm activation level of 20% of the lower explosive limit (LEL 1% by volume).]Table 1004.1.1. Add an entry for "Shell Office Spaces" with an occupant load factor of 65 gross square feet per person.

Sec. 44. [Section 1805.2.1. After the word "locality", in method number 1, insert (Depth shall be a minimum of 24 inches below the adjacent finish grade).]Section 1003.5. In exception #2, replace the phrase "a single riser or with two risers and a tread" to "three risers or less".

Sec. 45. [Chapter 29. Delete.]Section 1007.3. Delete Exceptions 1, 2, and 3.

Sec. 46. [Sections 3001.2, 3001.3, and 3001.4. Delete and replace with the following: 3001.2 Standards. The Maryland Department of Labor, Licensing, and Regulation, Division of Labor and Industry, regulates the design, installation, inspection, and testing of all hoisting and conveying equipment.]Section 1007.4. Delete Exception 2.

Sec. 47. [Section 3107.1. Add the following at the end of the sentence: and Chapter 59 of the Montgomery County Code, 1994, as amended.]Section 1008.1.2. Add a sentence at the end to read: "Doors in exit enclosures shall swing in the direction of egress travel unless the door opening serves an individual living unit that opens directly into an exit enclosure."

Sec. 48. [Add a new Section 3110 to read as follows:

Section 3110. In-Building Signal Amplification System.

Section 3110.1. General. The provisions of this Section shall apply to all newly

constructed below ground floors of a building, all floors in buildings greater than 25000 ft² per floor, and to all floors of buildings greater than 3 stories in height of Type I and II constructions. Exception: The requirements of this section shall not apply to areas within an individual dwelling unit.

Section 3110.2. Where Required. Every floor area in a building or structure which can not achieve the required level of radio coverage as established by Montgomery County Department of Technology Services shall be provided with an in-building signal amplification system.

Section 3110.3. Inspection and Testing. Radio coverage and in-building signal amplification systems must be tested, and inspected by approved individuals. The results of the testing and inspection shall be certified to the code official prior to issuance of an occupancy permit.]Section 1008.1.9.10. In Exception #3, delete all text after the phrase "…openable from the egress side".

Sec. 49. [Section 3401.2. Add the following at the end of the first sentence: Existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code]Section 1009.13. At end of the section add the phrase "or ladder complying with Section 7.2.9 of the Life Safety Code, 2009 edition".

Sec. 50. [Appendix F. Appendix F is hereby adopted in its entirety.]Section 1012.6. At the end of the last sentence add the phrase "unless, in the opinion of the AHJ, an extension in the same direction of the stair or ramp creates a hazard in the means of egress."

Sec. 51. [Appendix G. Appendix G is hereby adopted in its entirety and amended as follows:

Section G102.1. Insert after International Building Code the phrase "and the provisions of Article III, Chapter 19 of the Montgomery County Code, and Executive Regulation 108-92 AM."

Section G102.2. Replace the parentheses and the phrase within the parentheses with the effective date of this regulation.]Section 1012.7. Change "1 ½" to "2 ¼".

Sec. 52. [Appendix H. Appendix H is hereby adopted in its entirety and amended as follows:

Section H 101.1. Insert at the beginning of this section "The provisions of this chapter shall apply to signs that are permitted by the Montgomery County Zoning Ordinance".

Section H 101.2, Delete.

Section H102.1, Delete definitions for "Combination sign", "Pole Sign", and "Projecting

Sign."

Add definition of "Supported Sign" as follows: 'A sign that is attached to a structure like a pole, column, frame, or brace, as its sole means of support, and is not a ground sign and is not attached to a building.

Delete and replace the definition of "sign" as follows: "Any device, fixture, placard, or structure that uses any color, form, graphics, illumination, symbol, or writing to attract attention or to communicate information".

Delete and replace the definition of "ground sign" as follows: "A sign erected on the ground or with its bottom edge within 12 inches of the ground, that has its support structure as an integral part of the sign, and where the dimensions closest to the ground is greater than height.

Delete and replace the definition of "wall sign" as follows: "Any sign that is attached to the wall of a building. There are two types of wall signs: Flat wall sign: A sign that is parallel to the wall of a building to which it is attached, but does not extend more than 12 inches from the building face; Projecting wall sign: A sign that is attached to a wall of a building and extends more than 12 inches from the building face.

Section H104, Delete.

Section H108, Delete.

Section H109. Add the words "and supported" between "ground" and "sign" in the title and in the first two sentences of H109.1

Section H109.2, Delete.

Section H112. Add the word "wall" between "projecting" and "sign" in the title and first sentence.]Section 1013.1. After the phrase "equipment platforms," add the phrase "retaining walls."

Sec. 53. [Appendix I. Appendix I is hereby adopted in its entirety]Section 1013.2. In exception #1 and #2, change "34 inches (864 mm)" to "36 inches (915 mm)". Add a fifth exception: Exception 5. In occupancies in Group R-3, and within individual dwelling units in occupancies in Group R-2, interior guards shall be permitted to be not less than 36 inches high.

Sec. 54. [Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."]Section 1013.3. Delete Exception #6.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 55. [Section 101.2. Add exception to read as follows: Energy conservation systems and components in existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alteration or additions, and change of occupancy, shall be permitted to comply with the Maryland Building Rehabilitation Code.]Section 1015.2.1. Add the following exception: Exception 3. In buildings of Group R-2 four stories or less in height above the grade plane that are served by two required exterior stairways connected by an open-ended corridors in compliance with Section 1026.6, Exception 4 shall be provided with remoteness between the near edge of the required landings that are separated by a distance of at least one fourth the length of the maximum overall diagonal dimension of the area served.

Sec. 56. [AMENDMENTS TO THE 2006 INTERNATIONAL MECHANICAL CODE (IMC) Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."]Section 1018.1. Replace Exception 4 with the following: A fire resistance rating is not required for corridors within single-tenant Group B occupancies.

Sec. 57. [Section 101.2. Add exception to read as follows: Mechanical systems in existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations, or additions, and change of occupancy shall be permitted to comply with the International Existing Building Code.]Section 1020. Add a new section 1020.3 to read as follows:

Section 1020.3. Fire Department Access to Floors. Not less than one exit stair which serves all stories of the building shall be accessible by an internal corridor from the main entrance of the building or the fire department response location.

Sec. 58. [Sections 106.4.3, 106.4.4, 106.5, and 109. Delete.]Section 1027.1, Exception 1, Item 1.1. Add two sentences at the end of the item that read as follows:

The door to the exterior of the building shall be in direct sight of the point of the termination of the exit. For the purposes of this section, the use of exit signs or other exit markings shall not be considered as making the way to the exterior "readily visible and identifiable".

Sec. 59. [Section 306.3. After the first sentence add the following: Access to the attic opening shall be provided by a permanent or pull-down stairway in all new construction. In existing installations, portable ladders shall be acceptable.]Chapter 11. Delete and replace with the Maryland Accessibility Code.

Sec. 60. [AMENDMENTS TO THE 2006 INTERNATIONAL FUEL GAS CODE (IFGC) Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."]Section 1405.13.2. Number the existing exception as #1 and add two

exceptions (#2 and #3) to read as follows:
Exception #2: In buildings four stories or less, the lowest part of the clear opening of the window shall be permitted to be at a height not less than 18 inches (457mm) above the finished floor surface of the room in which the window is located.
Exception #3: In buildings four stories or less, glazing between the floor and a height of 18 inches (457mm) shall be fixed or have openings through which a 4-inch (102mm) sphere cannot pass.

Sec. 61. [Section 102.2.1. Delete and replace to read as follows: As an alternative to the provisions of this code, fuel-gas piping systems, fuel-gas utilization equipment and related accessories in existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations, or additions, and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code.]Table 1607.1 Item 29 Roofs. Modify the uniform live load value for "Ordinary flat, pitched and curved roofs" to 30 pounds per square foot, nonreducible.

Sec. 62. [Sections 106.4.3, 106.4.4, 106.5, and 109. Delete.]Add a new section as follows:

Section 1607.14. Fire Truck Loading. Structural members subject to fire truck loading shall be designed for the concentrated loads applied by the vehicle to the structure as described below:

The maximum fire truck operating weight is 85,000 pounds distributed in three axles spaced 19 feet 6 inches and 4 feet 6 inches apart. The transverse wheel distance is 8 feet 2 inches. The front axle weighs 23,000 pounds and rear axles weigh 31,000 pounds each. When the ladder is up, the vehicle is raised and supported on four (4) outriggers spaced 10 feet apart along the length of the vehicle and 16 feet apart in the transverse direction. Depending upon the position of the ladder, any pair of two front, side or rear outriggers apply to the structure a force of 123,552 pounds (61,776 pounds per outrigger in accordance with NFPA 1901, Chapter 20.21.4.2) and the remaining two outriggers apply a force of zero (0) pounds. Outrigger pad dimensions are 2 feet 2 inches wide by 2 feet 6 inches long.

Sec. 63. [Chapter 4. Delete all except Sections 401.2, 402.6.1, 412, 413, and 414.]Section 1608.2. After the title add the following sentence: "Design ground snow loads for Montgomery County shall be not less than 30 pounds per square foot."

Sec. 64. [AMENDMENTS TO THE 2006 INTERNATIONAL RESIDENTIAL CODE (IRC) Section R101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."]Section 1612.3. After the heading, delete the text and replace with the following: The flood hazard map of Montgomery County is established in Section 3 of Executive Regulation 24-06 AM, Floodplain Regulations, per the authority in Article III, Chapter 19 of the Montgomery County Code.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 65. [Section r101.2. Add Exception to read as follows: Existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code.]Section 1704.4. Delete Exception 1.

Sec. 66. [Section 102.7. Delete the phrase "the International Property Maintenance Code."]Section 1704.4. Delete Exception 2.3. Amend exception 2.1 by adding the word "or" after the semicolon. Amend exception 2.2 by deleting the word "or".

Sec. 67. [Section R105.2, Items 1 & 2. Delete. Item 3. Change 4 to 4 ½ and 1219 to 1372. Sections R105.3.1.1, R105.3.2, and R105.5. Delete.]Table 1704.4 Items 10 and 11. Modify the inspection frequency from "periodic" to "continuous".

Sec. 68. [Section 107. Delete.]Table 1704.4 Item 11. Add the sentence to the first column, "The strength evaluation shall be demonstrated by field cured cylinders only."

Sec. 69. [Section R108.1. Replace the second sentence with the following: Required fees shall be paid for each separate permit application. Sections 108.2 through 108.5. Delete.]Add a new section as follows: Section 1801.3 Special conditions. Design and construction of all buildings and structures within 1000 feet of a known municipal solid waste (MSW) landfill site that does not currently have an operational land fill gas (LFG) monitoring and removal system, shall require special engineering of foundation systems, including walls and floor slabs, to provide for the safety of occupants against hazards from LFG concentration. Special subsurface investigations shall be conducted, at the owner's expense, by an approved and qualified engineer or geologist to determine the extent of the potential hazard. The study must identify the potential hazards, and mitigation plans for the site must be incorporated into the construction documents and approved prior to issuance of a building permit. All buildings and structures within 1000 feet of the boundary of a MSW landfill shall be equipped with a methane gas detector with an alarm activation level of 20% of the lower explosive limit (LEL 1% by volume).

Sec. 70. [Sections R109.1 through R109.1.6. Delete all except R109.1.2, R109.1.5, and R109.1.5.1 and replace with the following: R109.1 Types of inspections. The following inspections must be conducted for all buildings and structures:

1. Sign: The sign must be posted on the property within 3 days after the permit issuance date and must remain posted on the property for 30 days. The sign must be located on the side of the lot/parcel, which provides principal access to the street or right-of-the-way. It must be conspicuously posted not more than 5 feet from the front property line and mounted at least 30 inches, but not more than 60 inches, above the ground. NO BUILDING INSPECTION WILL BE PERFORMED PRIOR TO THE APPROVAL OF THIS INSPECTION.

2. Footings: Conducted prior to concrete placement and after excavations for all footings and thickened slabs are completed; after form work, reinforcing steel, concrete-encased electrode (for new dwellings), and grade stakes are in place; and after sediment control measures are installed according to the approved sediment control plan.

3. Foundation/parging or back-fill: Conducted after the exterior walls have been waterproofed and the exterior drain tiles have been installed

4. Concrete slab-on-ground floor: Conducted after the installation of the gravel base, vapor barrier, slab edge insulation, and required radon-control features prescribed in Appendix F. When a sump crock is used for radon venting, it must be in place at the time of this inspection.

5. Wall check (house location survey): The owner must have a house location survey prepared and certified by a Maryland Registered Land Surveyor and must submit a copy to the building official for approval prior to erecting the framing. A wall check not identified by a premise address and permit number will not be accepted. A FRAMING INSPECTION WILL NOT BE CONDUCTED WITHOUT AN APPROVED WALL CHECK.

6. Masonry fireplace/flue: Conducted after the fireplace and first flue liner section are completed.

7. Factory-built fireplace/flue: Conducted at the framing inspection after installation of the unit.

8. Framing ("close-in"): Conducted after the completion of all framing, rough electrical/mechanical construction, sprinkler, plumbing and gas piping and just prior to concealment with insulation or interior finishing materials. The plumbing/gas inspection approval must have been granted by the Washington Suburban Sanitary Commission (WSSC) prior to the request for a framing inspection. Also, the sprinkler close-in inspection approval must have been granted by the Department of Fire & Rescue Services (DFRS) prior to the request for a framing inspection. The rough wiring and mechanical inspections must be requested at the same time. WHEN THE FLOOR FRAMING IS LESS THAN 36 INCHES (914 MM) ABOVE THE SURFACE BELOW, A FRAMING INSPECTION SHALL BE REQUESTED PRIOR TO INSTALLATION OF ANY FLOOR DECKING.

9. Well and Septic Systems: Where a building is served by an on-site water system or an on-site sewage disposal system, prior to the final inspection, an "Interim Certificate of Potability" or "Certificate of Potability" and/or a "Certificate of Sewage Disposal", as appropriate, must be issued by the Department. Where a building is served by an on-

site water system or an on-site sewage disposal system, any condition of the permits issued for those systems shall be satisfied prior to the final inspection.

10. Final: Conducted after the building is completed and ready for occupancy, but prior to settlement on the house, unless the contract owner waives the requirement for final inspection and provides the building official with a written copy of the waiver. For new construction, final electrical, mechanical, and sprinkler inspections must be requested with the final building inspection, and the address numbers must be displayed in accordance with the requirements of the fire code. Note: A final approval from WSSC shall be obtained for all plumbing/gas installations prior to requesting final building inspections from the County. Also, The Sprinkler final inspection approval must have been granted by the Department of Fire & Rescue Services (DFRS) prior to the request for a final inspection. If an owner refuses access within a reasonable time after a house is completed, the building official may close the permit file, but this action will not relieve the owner from any obligation to comply with applicable codes. The final inspection must be requested and approved before a building (or portion thereof) is used or occupied.

11. Re-inspection: Any of the above inspections disapproved twice for the same violation will be subject to a re-inspection fee, as established in the Schedule of Permit and License Fees, which must be paid before any further inspections will be performed at the building site.]Section 1809.5. In item number 1, after the word "locality" insert: "Depth shall be a minimum of 24 inches below the adjacent finish grade."

Sec. 71. [Sections R110. Delete.]Add a new section as follows:

1901.2.1. For precast structures, in the case of a conflict between ACI 318 and PCI Design Handbook, the requirements of ACI 318 shall control the design.

Sec. 72. [Sections R112. Delete except R112.2.]Chapter 29. Delete.

Sec. 73. [Section R202. To the definition dwelling unit add: A dwelling unit may contain a family day care home, group day care home, a home occupancy or home health care practitioner complying with Chapter 59, Montgomery County Code. Note: A certificate of use and occupancy is required before any space dedicated for home occupancy or home health care practitioner can be used or occupied. See Chapters 8 and 59, Montgomery County Code.]Sections 3001.2, 3001.3, and 3001.4. Delete and replace with the following: 3001.2 Standards. The Maryland Department of Labor, Licensing, and Regulation, Division of Labor and Industry, regulates the design, installation, inspection, and testing of all hoisting and conveying equipment.

Sec. 74. [Table R301.2(1). Under the headings indicated insert the appropriate criteria, as follows: GROUND SNOW LOAD--30 pounds per square foot (psf); WIND-Speed--90 miles per

hour (mph); SEISMIC DESIGN CATEGORY—B; SUBJECT TO DAMAGE FROM-Weathering—severe, Frost line depth—24 inches (612 mm), Termite—moderate to heavy, and Decay—slight to moderate; WINTER DESIGN TEMP—13 degrees Fahrenheit (F); ICE SHIELD UNDERLAYMENT REQUIRED—yes; footnote i; FLOOD HAZARDS—yes; footnote h: (a), (b) July 2, 1979; AIR FREEZING INDEX—300; MEAN ANNUAL TEMPERATURE—55.]Section 3107.1. Add the following at the end of the sentence: "and Chapter 59 of the Montgomery County Code, 1994, as amended."

Sec. 75. [Sections R302.1. Delete the second Exception.]Section 3109.3. Change "4 feet (1290 mm)" to "5 feet (1524 mm)".

Sec. 76. [Section R305.1, Exception 2. Delete. Exception 3. Delete the first occurrence of the word "required." Delete the phrase "with no portion of the required floor area less than 5 feet" and replace it with the phrase "Any floor area having less than 5 feet of ceiling height shall not be considered part of the room area and shall not be allowed to have any permanent fixtures or furnishings such as, but not limited to, cabinets, counters, and shelves."]Section 3109.4.1. Change "48 inches (1219 mm)" to "60 inches (1524 mm)".

Sec. 77. [Sections R311.4.3. Exceptions 2 and 3 change 7¾ to 8¼.]Section 3302. Add a new section 3302.3 which reads "Construction safeguards shall also comply with NFPA 241, Standard for Safeguarding Construction, Alteration and Demolition Operations, 2004 edition."

Sec. 78. [Section R311.5.3.1. Change 7¾ to 8¼, 196 to 209.]Section 3401.1. Add the following at the end of the sentence: Existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code. Buildings undergoing repair, alterations, additions and change of occupancy shall also comply with the Montgomery County Fire Safety Code.

Sec. 79. [Section R311.5.3.2. Change 10 to 9 and 254 to 229 in both occurrences.]Appendix F. Appendix F is hereby adopted in its entirety.

Sec. 80. [Section R312.1. After the first occurrence of the phrase "floor or grade below" insert the phrase "and retaining walls with a difference in grade level on either side of the wall exceeding 30 inches (762 mm) and within 2 feet (610 mm) of a walk, path, parking lot, or driveway on the high side."]Appendix G. Appendix G is hereby adopted in its entirety and amended as follows:

Section G102.1. Insert after International Building Code the phrase "and the provisions of Article III, Chapter 19 of the Montgomery County Code, and Executive Regulation 24-06 AM."

(49)

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Section G102.2. Replace the parentheses and the phrase within the parentheses with the effective date of this regulation.

Sec. 81. [Section R313. To the title add: AND AUTOMATIC SPRINKLER SYSTEMS.

Section R 313.2.1. Delete all from "as required" to "hard wired", and insert "in accordance with Montgomery County Department of Permitting Services, Division of Building Construction Policy 06-7." Exceptions 1 and 2 delete.

Add a new subsection: R313.4. Automatic sprinkler system required. An approved automatic sprinkler system must be installed in detached one- and two-family dwellings and townhouses. The sprinkler system design, installation, inspection, and testing must be in accordance with the requirements of the fire code.

Add new subsection R313.5 Additions to one- and two- family dwellings and townhouses equipped with an approved sprinkler system. An approved automatic fire sprinkler system must be installed in additions to dwellings equipped with automatic sprinkler systems.

Add new subsection R313.6. Rehabilitation work in one- and two- family dwellings and townhouses equipped with an approved sprinkler system. An approved automatic fire sprinkler system shall be maintained or upgraded in areas undergoing rehabilitation work.

Add new subsection R313.7. Automatic sprinkler system for reconstruction. An approved automatic fire sprinkler system shall be installed when 50 percent or more of the gross floor area as defined in section 1002.1 of the IBC of the existing building is demolished.]Appendix H. Appendix H is hereby adopted in its entirety and amended as follows:

Section H 101.1. Insert at the beginning of this section "The provisions of this chapter shall apply to signs that are permitted by the Montgomery County Zoning Ordinance".

Section H 101.2, Delete.

Section H102.1, Delete definitions for "Combination sign", "Display Sign", "Pole Sign", "Portable Display Surface", and "Projecting Sign."

Add definition of "Supported Sign" as follows: 'A sign that is attached to a structure like a pole, column, frame, or brace, as its sole means of support, and is not a ground sign and is not attached to a building.

Delete and replace the definition of "sign" as follows: "Any device, fixture, placard, or structure that uses any color, form, graphics, illumination, symbol, or writing to attract attention or to communicate information".

Delete and replace the definition of "ground sign" as follows: "A sign erected on the ground or with its bottom edge within 12 inches of the ground, that has its support structure as an integral part of the sign, and where the dimensions closest to the ground is greater than height.

Delete and replace the definition of "wall sign" as follows: "Any sign that is attached to the wall of a building. There are two types of wall signs: Flat wall sign: A sign that is parallel to the wall of a building to which it is attached, but does not extend more than 12 inches from the building face; Projecting wall sign: A sign that is attached to a wall of a building and extends more than 12 inches from the building face.

Section H104, Delete.

Section H108, Delete.

Section H109. Add the words "and supported" between "ground" and "sign" in the title and in the first two sentences of H109.1

Section H109.2, Delete.

Section H110, Delete the text of H110.1 (including the exception) and replace with the following "Roof signs are prohibited." Delete Sections H110.2 through H110.5.

Section H111.3. Add the word "wall" between "projecting" and "sign".

Section H112. Add the word "wall" between "projecting" and "sign" in the title and first sentence.

Section H112.4. In the first sentence, delete all text starting with the word "except".

Section H113. Delete.

AMENDMENTS TO THE 2009 INTERNATIONAL ENERGY CONSERVATION CODE (IECC)

Sec. 82. [Section 323.1 Add a new sentence. Walls and ceiling of elevator shafts shall be covered with by not less than 5/8-inch (15.9 mm) Type X gypsum board.]Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."

Sec. 83. [Section R324.1. To the first paragraph add the phrase "and the Floodplain District Requirements, Article III, Chapter 19, of the Montgomery County Code, and Executive Regulation 108-92 AM."]Section 101.2. Add exception to read as follows: Energy conservation systems and components in existing buildings, as defined by the Maryland

Building Rehabilitation Code, undergoing repair, alteration or additions, and change of occupancy, shall be permitted to comply with the Maryland Building Rehabilitation Code.

AMENDMENTS TO THE 2009 INTERNATIONAL MECHANICAL CODE (IMC)

Sec. 84. [Add a new section as follows: Section R401.5. Special conditions. Design and construction of all buildings and structures within 1000 feet of a known municipal solid waste (MSW) landfill site that does not currently have an operational land fill gas (LFG) monitoring and removal system, shall require special engineering of foundation systems, including walls and floor slabs, to provide for the safety of occupants against hazards from LFG concentration. Special subsurface investigations shall be conducted, at the owner's expense, by an approved and qualified engineer or geologist to determine the extent of the potential hazard. The study must identify the potential hazards, and mitigation plans for the site must be incorporated into the construction documents and approved prior to issuance of a building permit. All buildings and structures within 1000 feet of the boundary of a MSW landfill shall be equipped with a methane gas detector with an alarm activation level of 20% of the lower explosive limit (LEL-1% by volume).]Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."

Sec. 85. [Section R403.1.4.1. Change the first exception to read: One-story detached accessory structures, excluding garages and carports, used as tool and storage sheds, playhouses and similar uses and not exceeding 400 square feet or less in floor area and an eave height of 10 feet (3048 mm) or less shall not be required to be protected. Delete second exception.]Section 101.2. Add exception to read as follows: Mechanical systems in existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations, or additions, and change of occupancy shall be permitted to comply with the International Existing Building Code.

Sec. 86. [Section R404.1. Delete second paragraph except items 1 and 4. Add "The wood sole plate at exterior walls on monolithic slabs and wood sill plate shall be anchored to the foundation with anchor bolts spaced a maximum of 4 feet (1220 mm) on center. There shall be a minimum of two bolts per plate section with one bolt located not more than 12 inches (305 mm) or less than seven bolt diameters from each end of the plate section. Bolts shall be at least 1/2 inch (12.7 mm) in diameter and shall extend a minimum of 7 inches (178 mm) into masonry or concrete. Interior bearing wall sole plates on monolithic slab foundations shall be positively anchored with approved fasteners. A nut and washer shall be tightened on each bolt to the plate. Sills and sole plates shall be protected against decay and termites where required by Sections R319 and R320. Cold-formed steel framing systems shall be fastened to the wood sill plates or anchored directly to the foundation as required in Section R505.3.1 or R603.1.1."]Sections 106.4.3, 106.4.4, 106.5, and 109. Delete.

Sec. 87. [Section R405.1. Add to the title "exterior drainage system". Delete the exception. Add

new subsection R 405.1.1. Concrete or masonry foundation interior drainage system. Weep holes at least 2 inches (51 mm) in diameter, spaced at a maximum of 6 feet (1828 mm) on center shall be installed in the footing connecting into the interior drains. Weep-hole inlets shall have a minimum of 6 inches (153 mm) of gravel for the full perimeter of the foundation, extending at least 12 inches (306 mm) from the inlets and covered by a layer of approved filter membrane.]Add new section 302.6 Supports and Anchorage. All appliances located on roofs shall rest on a manufacturer's standard perimeter support, self flashing roof curb, framed steel support, or 4 X 4 treated lumber as a minimum. The appliances shall be securely affixed in an approved manor to resist vibration and wind loads.

Sec. 88. [Section R406.1. Delete.]Add new section 306.1.1.1 Heating Appliances. Electric, fossil or solid fuel fired appliances shall not be installed under any stairway or landing.

Sec. 89. [Section R406.2. Delete the first sentence and replace with the following: Exterior foundation walls retaining earth and enclosing usable spaces below grade must be waterproofed with an approved waterproofing system or a membrane extending from the top of the footings to finished grades. Delete items 1, 2, 3, and 4. Add. "Waterproofing system shall be installed as required in the current International Code Council Evaluation Service report for the product."]Section 306.3. After the last sentence add the following: Access to the attic opening shall be provided by a permanent or pull-down stairway in all new construction. In existing installations, portable ladders shall be acceptable.

Sec. 90. [Section R506.2.3. Delete Exception 3.]Table 403.3 under heading "Specialty Shops" Add Automotive service or repair garages- note b.

Sec. 91. [Section R602.10.1. At the end of first paragraph, add the following sentence: Variation in or combination of bracing methods from story to story, from braced wall line to brace wall line within a story, and within braced wall line is permitted if a registered design professional in the state of Maryland certifies that the wind bracing system is adequate for all loads likely to be imposed on it.]Section 506.1 Add the words "and NFPA 96." To the end of the first sentence and the sentence "Where discrepancies occur the most astringent will apply." after the first sentence.

Sec. 92. [Add new section R602.10.3.1. Braced wall panel interior finish material. Braced wall panels shall have gypsum wall board installed on the side of the wall opposite the bracing material. Gypsum wall board shall be not less than ½ inch (12.7 mm) in thickness and be fastened in accordance with Table R702.3.5 for interior gypsum wall board.

Exceptions:

1. Wall panels that are braced in accordance with Method 5.
2. Wall panels that are braced in accordance with Section R602.10.6
3. When an approved interior finish material with an in-plane shear resistance equivalent to gypsum board is installed.
4. For Methods 2, 3, 4, 6, 7, and 8, gypsum wall board is permitted to be omitted provided the

percentage of bracing in Table R602.10.1 is multiplied by a factor of 1.5.]Section 506.3.2.5 Change "100" to "300".

Sec. 93. [Delete foot notes b and c from Table R602.10.5.]Section 506.3.9 Add the words "vertical and" in the heading after the word duct. In the first sentence change 20 feet to "12 feet" and after the first sentence add "Vertical cleanouts shall be provided on each floor". (NFPA96)

Sec. 94. [Add new subsection R602.10.5.1. Only full-height braced wall panels shall be used for calculating braced wall amount in accordance with Table R602.10.1.]Section 506.3.12.2 After the last sentence add "Follow NFPA 96 section 7.8.3 for additional termination requirements."

Sec. 95. [Add new subsection R602.10.5.2. Braced wall panel location. A braced wall panel shall be located at each end of a continuously sheathed braced wall line. A minimum 24-inch wood structural panel corner return shall be provided at both ends of a continuously-sheathed braced wall line. Exception: The first braced wall panel shall be permitted to begin 12 feet 6 inches from each end of the braced wall line provided a minimum 24-inch full-height wood structural panel is provided at both sides of a corner constructed in accordance with Figure R602.10.5 at the braced wall line ends.] Section 606.2.1 Under the heading exception, add the words "Return air" to the beginning of the first sentence. After the last sentence add "Supply smoke detectors shall not be required for fan units whose sole purpose is to remove air from the inside of the building to the outside of the building. (NFPA90A)

Sec. 96. [Add new subsection R602.10.5.3. Aspect ratio segments at garage door openings used with continuous structural panel sheathing. A 4:1 aspect ratio shall be permitted for full-height sheathed wall segments on either side of garage openings that support light frame roofs only, with roof covering dead loads of 3 psf (0.14 kN/m2) or less. For purposes of calculating the percentage of panel bracing required by Table R602.10.1, the length of the full height sheathing segment shall be equal to its measured length. This option is limited to one wall of the garage.]Section 606.2.1 Add to the words "Supply and" to the beginning of the heading. Add the words "supply and" after the word "in" in the first sentence and add "in the supply air duct or plenum downstream of the air filters and ahead of any branch connections," after (0.9 m3/s) in the first sentence.

Sec. 97. [Add new subsection R602.10.5.4. Aspect ratio segments used with continuous structural panel sheathing. Wall segments having a maximum 6:1 height to width ratio shall be permitted to be built in accordance with Figure R602.10.4.6 of the 2007 Supplement to IRC. The maximum 6:1 height-to-width ratio is based on height being measured from top of header to the bottom of the wall segment bottom-plate. For purposes of calculating the percentage of panel bracing required by Table R602.10.1, the width of the full-height sheathing segment shall be equal to its measured width. Corners at the ends of walls using this option shall be constructed in accordance with Figure R602.10.5. The number of wall segments having a maximum 6:1 height to width ratio in a wall line shall not exceed four. In multi-story buildings, wall segments having a maximum 6:1 height to width ratio are not permitted to be directly stacked vertically. For purposes of resisting

wind pressures acting perpendicular to the wall, in accordance with Section R301.2, the minimum requirements of Figure R602.10.4.6 of the 2007 Supplement to IRC shall be sufficient for wind speeds less than 110 mph in Exposure Category B. For Exposure Categories C and D, the header to jack stud strap requirements and the number of additional jack studs shall be in accordance with Table R602.10.4.6.of the 2007 Supplement to IRC.]Section 607.5.5 exception 2 Replace the first sentence of Exception 2 with the following: "In buildings, other than Group H occupancies, equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2, smoke dampers are not required where:"

Sec. 98. [Section 602.10.8. Connections. Delete all except first two sentences. Add

1. Where joists are perpendicular to braced wall lines above or below, blocking shall be provided between the joists at braced wall panel locations to permit fastening of wall plates in accordance with Table R602.3(1).
2. Where joists are parallel to braced wall lines above or below, a rim joist or other parallel framing member shall be provided at the wall to permit fastening of wall plates in accordance with Table R602.3(1).
3. Elevated post or pier foundations supporting braced wall panels shall be designed in accordance with accepted engineering practice.]Add new section 608 Emergency and Standby Power Systems

Sec. 99. [Section R613.2. Window sills. Replace 24 inches (610 mm) with 18" (457 mm).]Add new section [F] 608.1 Installation. Emergency and standby power systems required by the International Fire Code or the International Building Code shall be installed in accordance with NFPA 110 , NFPA 111 and the International Fire Code. Existing installations shall be maintained in accordance with the original approval.

Sec. 100. [Section M.1305.1.3. Add the following after the first sentence: Access to the attic opening shall be provided by a permanent or pull-down stairway in all new construction. In existing installations, portable ladders shall be acceptable.]Add new section [F] 608.1.1 Stationary Generators. Stationary emergency and standby power generators required by the International Building Code and the International Fire Code shall be listed in accordance with UL 2200.

Sec. 101. [Chapters 25 through 42. Delete.]Add new section [F] 608.2 Standby Power. Where the standby system is a generator set inside a building, the system shall be located in a separate room enclosed with a 2-hour fire barrier constructed in accordance with section 707 or horizontal assemblies constructed in accordance with section 712 of the International Building Code, or both. System supervision with manual start and transfer features shall be provided at the fire command center.

Sec. 102. [Add new Chapter 43. Site Work and Safeguards.

Section R4301. Storage and placement. Construction equipment and materials shall be stored and

placed so as not to endanger the public, the workers or adjoining property for the duration of the construction project.

Section R4302. Utility connections. Service utility connections shall be discontinued and capped in accordance with the approved rules and the requirements of the authority having jurisdiction.

Section R4303. Excavation and fill for buildings and structures shall be constructed or protected so as not to endanger life or property.

Section R4304. Fill supporting foundations. A building permit is required when fill is used to support the foundations of any building or structure. Special inspections of compacted fill shall be in accordance with Section 1704.7 of the International Building Code 2006.

Section R4305. Protection of Pedestrians

Section R4305.1. Protection required. Pedestrians shall be protected during construction, remodeling and demolition activities by a barrier when the distance from the construction to the lot line is 5 (1524 mm) feet or less.

Section R4305.2. Adjacent to excavations. Every excavation on a site located 5 feet (1524 mm) or less from the street lot line shall be enclosed with a barrier. Where located more than 5 feet (1524 mm) from the street lot line, a barrier shall be erected when and where required by the building official.

Section R4305.3. Barriers. Barriers shall be at least 42" high, have adequate strength, and shall be of a type which will warn of potential danger.

Section R4306. Protection of Adjoining Property. Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs. Provisions shall be made to control water runoff and erosion during construction or demolition activities.]Add new section 608.2.1 Ventilation Air. Ventilation air shall be supplied directly from a source outside the building by an exterior wall opening or from a source outside the building by a 2-hour fire rated air transfer system. (NFPA 110)

Sec. 103. [Appendix E. Appendix E is hereby adopted with the following modification: Delete all except subsections AE501 through AE606, with the following modification to Section AE502.3: In the last sentence, first paragraph, change 12 inches (305) to 24 inches (610).]Add new section 608.2.2 Discharge air. Discharge air shall be directed outside the building by an exterior wall opening or to an exterior opening by a 2-hour rated air transfer system. (NFPA 110)

Sec. 104. [Appendix F. Appendix F is hereby adopted in its entirety.]Add new section 608.2.3 Fire

Dampers. Fire dampers, shutters or other self closing devices shall not be permitted in ventilation or discharge air openings or ductwork for standby power systems. (NFPA 110)

Sec. 105. [Appendix G. Appendix G is hereby adopted in its entirety, with the following modifications: Section AG101.1, add the following sentence at the end: Swimming pools, Spas and Hot Tubs shall also comply with Chapter 51 of the Montgomery County Code. Section AG105.2: Item 1. Change 48 to 60 and 1219 to 1524; Item 9.2. Delete and substitute the following: 9.2. All doors with direct access to the pool through that wall must be equipped with an alarm that produces an audible warning when the door and its screen, if present, are opened. The alarm must be audible throughout the house during normal household activities. The alarm system may be equipped with a manual means to temporarily deactivate the system for a single opening. The deactivation switch(es) must be located at least 54 inches (1372 mm) above the threshold of the door; Item 9.3. Delete.]Add new section 608.2.4 Motor Operated Damper. Motor operated dampers, when used, shall be spring operated to open and motor closed. (NFPA 110)

AMENDMENTS TO THE 2009 INTERNATIONAL FUEL GAS CODE (IFGC)

Sec. 106. [Appendix H. Appendix H is hereby adopted in its entirety.]Section 101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."

Sec. 107. [Appendix K. Appendix K is hereby adopted in its entirety.]Section 102.2.1. Delete and replace to read as follows: As an alternative to the provisions of this code, fuel-gas piping systems, fuel-gas utilization equipment and related accessories in existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations, or additions, and change of occupancy shall be permitted to comply with the Maryland Building Rehabilitation Code.

Sec. 108. [This regulation is effective on]Sections 106.5.3, 106.5.4, 106.6, and 109.2 to 109.7 Delete.

Sec. 109. Chapter 4. Delete all except Sections 401.2, 402.6.1, 412, 413, and 414.

AMENDMENTS TO THE 2009 INTERNATIONAL RESIDENTIAL CODE (IRC)

Sec. 110. Section R101.1. Replace the parentheses and the phrase in the parentheses with "Montgomery County, Maryland."

Sec. 111. Section R101.2. Add Exception to read as follows: Existing buildings, as defined by the Maryland Building Rehabilitation Code, undergoing repair, alterations or additions and change of occupancy shall be permitted to comply with the Maryland Building

Rehabilitation Code.

Sec. 112. Section 102.7. Delete the phrase "the International Property Maintenance Code."

Sec. 113. Section R105.2, Items 1 & 2. Delete. Item 3. Change 4 to 4 ½ and 1219 to 1372. Item 10, delete. Sections R105.3.1.1, R105.3.2, and R105.5. Delete.

Sec. 114. Section 107. Delete.

Sec. 115. Section R108.1. Replace the second sentence with the following: Required fees shall be paid for each separate permit application. Sections 108.2 through 108.5. Delete.

Sec. 116. Sections R109.1 through R109.1.6. Delete all except R109.1.2, R109.1.5, and R109.1.5.1 and replace with the following: R109.1 Types of inspections. The following inspections must be conducted for all buildings and structures:

1. Sign: The sign must be posted on the property within 3 days after the permit issuance date and must remain posted on the property for 30 days. The sign must be located on the side of the lot/parcel, which provides principal access to the street or right-of-the-way. It must be conspicuously posted not more than 5 feet from the front property line and mounted at least 30 inches, but not more than 60 inches, above the ground. NO BUILDING INSPECTION WILL BE PERFORMED PRIOR TO THE APPROVAL OF THIS INSPECTION.

2. Footings: Conducted prior to concrete placement and after excavations for all footings and thickened slabs are completed; after form work, reinforcing steel, concrete-encased electrode (for new dwellings), and grade stakes are in place; and after sediment control measures are installed according to the approved sediment control plan.

3. Foundation/parging or back-fill: Conducted after the exterior walls have been waterproofed and the exterior drain tiles have been installed

4. Concrete slab-on-ground floor: Conducted after the installation of the gravel base, vapor barrier, slab edge insulation, and required radon-control features prescribed in Appendix F. When a sump crock is used for radon venting, it must be in place at the time of this inspection.

5. Wall check (house location survey): The owner must have a house location survey prepared and certified by a Maryland Registered Land Surveyor and must submit a copy to the building official for approval prior to erecting the framing. A wall check not identified by a premise address and permit number will not be accepted. A FRAMING INSPECTION WILL NOT BE CONDUCTED WITHOUT AN APPROVED WALL CHECK.

6. Masonry fireplace/flue: Conducted after the fireplace and first flue liner section are completed.

7. Factory-built fireplace/flue: Conducted at the framing inspection after installation of the unit.

8. Framing ("close-in"): Conducted after the completion of all framing, rough electrical/mechanical construction, sprinkler, plumbing and gas piping and just prior to concealment with insulation or interior finishing materials. The plumbing/gas inspection approval must have been granted by the Washington Suburban Sanitary Commission (WSSC) prior to the request for a framing inspection. Also, the sprinkler close-in inspection approval must have been granted by the Department of Fire & Rescue Services (DFRS) prior to the request for a framing inspection. The rough wiring and mechanical inspections must be requested at the same time. WHEN THE FLOOR FRAMING IS LESS THAN 36 INCHES (914 MM) ABOVE THE SURFACE BELOW, A FRAMING INSPECTION SHALL BE REQUESTED PRIOR TO INSTALLATION OF ANY FLOOR DECKING.

9. Insulation Inspection: Conducted after the completion of both floor and wall framing to verify that the installed insulation R-value matches the approved plans or specifications for the building.

10. Well and Septic Systems: Where a building is served by an on-site water system or an on-site sewage disposal system, prior to the final inspection, an "Interim Certificate of Portability" or "Certificate of Portability" and/or a "Certificate of Sewage Disposal", as appropriate, must be issued by the Department. Where a building is served by an on-site water system or an on-site sewage disposal system, any condition of the permits issued for those systems shall be satisfied prior to the final inspection.

11. Final and U/O: Conducted after the building is completed and ready for occupancy, but prior to settlement on the house, unless the contract owner waives the requirement for final inspection and provides the building official with a written copy of the waiver. For new construction, final electrical, mechanical, and sprinkler inspections must be requested with the final building inspection, and the address numbers must be displayed in accordance with the requirements of the fire code. Note: A final approval from WSSC shall be obtained for all plumbing/gas installations prior to requesting final building inspections from the County. Also, the Sprinkler final inspection approval must have been granted by the Department of Fire & Rescue Services (DFRS) prior to the request for a final inspection. If an owner refuses access within a reasonable time after a house is completed, the building official may close the permit file, but this action will not relieve the owner from any obligation to comply with applicable codes. The final inspection must be requested and approved before a

building (or portion thereof) is used or occupied.

12. Re-inspection: Any of the above inspections disapproved twice for the same violation will be subject to a re-inspection fee, as established in the Schedule of Permit and License Fees, which must be paid before any further inspections will be performed at the building site.

Sec. 117. Sections R110. Delete.

Sec. 118. Sections R112. Delete except R112.2.

Sec. 119. Section R202. To the definition dwelling unit add: A dwelling unit may contain a family day care home, group day care home, a home occupancy or home health care practitioner complying with Chapter 59, Montgomery County Code. Note: A certificate of use and occupancy is required before any space dedicated for home occupancy or home health care practitioner can be used or occupied. See Chapters 8 and 59, Montgomery County Code.

Delete in the first paragraph of definition of Attic, Habitable, "or unfinished" and "not"

Add definition for Storage, finished: A finished area having no more than two (2) 120V outlets and no other wiring methods (CATV, satellite, data communication, etc.), excluding lighting requirements.

Sec. 120. Table R301.2(1). Under the headings indicated insert the appropriate criteria, as follows: GROUND SNOW LOAD--30 pounds per square foot (psf); WIND-Speed--90 miles per hour (mph); TOPOGRAPHIC EFFECTS---No; SEISMIC DESIGN CATEGORY—B; SUBJECT TO DAMAGE FROM-Weathering---severe, Frost line depth—24 inches (612 mm), Termite—moderate to heavy, and Decay—slight to moderate; WINTER DESIGN TEMP—13 degrees Fahrenheit (F); ICE SHIELD UNDERLAYMENT REQUIRED—yes; footnote h; FLOOD HAZARDS—yes; footnote g; (a), (b) July 2, 1979; AIR FREEZING INDEX—300; MEAN ANNUAL TEMPERATURE—55.

Sec. 121. Section R305.1, Exception 1. Delete the first occurrence of the word "required." Delete the phrase "with no portion of the required floor area less than 5 feet" and replace it with the phrase "Any floor area having less than 5 feet of ceiling height shall not be considered part of the room area and shall not be allowed to have any permanent fixtures or furnishings such as, but not limited to, cabinets, counters, and shelves." SectionsR305.1.1 Delete.

Sec. 122. Sections R307.1. Delete "and in accordance with the requirements of Section P2701.5"

Sec. 123. Section R312.1. After the first occurrence of the phrase "floor or grade below" insert the phrase "and retaining walls with a difference in grade level on either side of the wall exceeding 30 inches (762 mm) and within 2 feet (610 mm) of a walk, path, parking lot, or

driveway on the high side."

Sec. 124. Section R313.1.1. Replace Section P2904 with NFPA 13D.

Sec. 125. Section R313.2. Delete "effective January 1, 2011".

Sec. 126. Section R313.2.1. Delete "Section P2904 or".

Sec. 127. Add new subsection R313.3. Rehabilitation work in one- and two- family dwellings and townhouses equipped with an approved sprinkler system. An approved automatic fire sprinkler system shall be maintained in areas undergoing rehabilitation work.

Add new subsection R313.4. Automatic sprinkler system for reconstruction. An approved automatic fire sprinkler system shall be installed when 50 percent or more of the gross floor area as defined in section 1002.1 of the IBC of the existing building is demolished.

Sec. 128. Section R319.1 Change "4 inches (102 mm)" to "5 inches (122.5 mm).

Sec. 129. Section 321.1 Add a new sentence. Walls and ceiling of elevator shafts shall be covered with by not less than 5/8-inch (15.9 mm) Type X gypsum board.

Sec. 130. Section 321.3. Delete.

Sec. 131. Section R322.1. To the first paragraph add the phrase "and the Floodplain District Requirements, Article III, Chapter 19, of the Montgomery County Code, and Executive Regulation 24-06 AM."

Sec. 132. Add a new section as follows: Section R401.5. Special conditions. Design and construction of all buildings and structures within 1000 feet of a known municipal solid waste (MSW) landfill site that does not currently have an operational land fill gas (LFG) monitoring and removal system, shall require special engineering of foundation systems, including walls and floor slabs, to provide for the safety of occupants against hazards from LFG concentration. Special subsurface investigations shall be conducted, at the owner's expense, by an approved and qualified engineer or geologist to determine the extent of the potential hazard. The study must identify the potential hazards, and mitigation plans for the site must be incorporated into the construction documents and approved prior to issuance of a building permit. All buildings and structures within 1000 feet of the boundary of a MSW landfill shall be equipped with a methane gas detector with an alarm activation level of 20% of the lower explosive limit (LEL-1% by volume).

Sec. 133. Section R403.1.4.1. Change the first exception to read: One-story detached accessory structures, excluding garages and carports, used as tool and storage sheds, playhouses and similar uses and not exceeding 400 square feet or less in floor area and an eave height of 10

feet (3048 mm) or less shall not be required to be protected. Delete second and third exceptions.

Sec. 134. Section R405.1. Add to the title "exterior drainage system". Delete the exception. Add new subsection R 405.1.1. Concrete or masonry foundation interior drainage system. Weep holes at least 2 inches (51 mm) in diameter, spaced at a maximum of 6 feet (1828 mm) on center shall be installed in the footing connecting into the interior drains. Weep-hole inlets shall have a minimum of 6 inches (153 mm) of gravel for the full perimeter of the foundation, extending at least 12 inches (306 mm) from the inlets and covered by a layer of approved filter membrane.

Sec. 135. Section R406.1. Delete.

Sec. 136. Section R406.2. Delete the first sentence and replace with the following: Exterior foundation walls retaining earth and enclosing usable spaces below grade must be waterproofed with an approved waterproofing system or a membrane extending from the top of the footings to finished grades. Delete items 1, 2, 3, and 4. Add. "Waterproofing system shall be installed as required in the current International Code Council Evaluation Service report for the product."

Sec. 137. Section R406.4. Delete.

Sec. 138. Section R506.2.3. Delete Exceptions 2 and 4.

Sec. 139. Section R612.2. Window sills. Replace 24 inches (610 mm) with 18" (457 mm).

Sec. 140. Section N1101.2. Add 2009 IECC after International Energy Conservation Code and delete the rest of the section.

Sec. 141. Section N1101.3 through Section N1104. Delete.

Sec. 142. Section M.1305.1.3. Add the following after the first sentence: Access to the attic opening shall be provided by a permanent or pull-down stairway in all new construction. In existing installations, portable ladders shall be acceptable.

Sec. 143. Section M1405.1. Replace the phrase "Chapters 34 through 43" with National Electric Code (NEC) 2008 adopted in Executive Regulation ER 15-09.

Sec. 144. Section M1406.2. Replace the phrase "Chapters 34 through 43" with National Electric Code (NEC) 2008 adopted in Executive Regulation ER 15-09.

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 145. Section M1407.1 Replace the phrase "Chapters 34 through 43" with National Electric Code (NEC) 2008 adopted in Executive Regulation ER 15-09.

Sec. 146. Chapters 25 through 43. Delete

Sec. 147. Add new Chapter 45. Site Work and Safeguards.

Section R4501. Storage and placement. Construction equipment and materials shall be stored and placed so as not to endanger the public, the workers or adjoining property for the duration of the construction project.

1. Disposal of Construction Debris/Material. Construction debris and/or materials shall be stored and disposed in a suitable manner so as not to endanger the public and not spread onto the lot and adjoining properties.

Section R4502. Utility connections. Service utility connections shall be discontinued and capped in accordance with the approved rules and the requirements of the authority having jurisdiction.

Section R4503. Excavation and fill for buildings and structures shall be constructed or protected so as not to endanger life or property.

Section R4504. Fill supporting foundations. A building permit is required when fill is used to support the foundations of any building or structure. Special inspections of compacted fill shall be in accordance with Section 1704.7 of the International Building Code 2009.

Section R4505. Protection of Pedestrians

Section R4505.1. Protection required. Pedestrians shall be protected during construction, remodeling and demolition activities by a barrier when the distance from the construction to the lot line is 5 (1524 mm) feet or less.

Section R4505.2. Adjacent to excavations. Every excavation on a site located 5 feet (1524 mm) or less from the street lot line shall be enclosed with a barrier. Where located more than 5 feet (1524 mm) from the street lot line, a barrier shall be erected when and where required by the building official.

Section R4505.3. Barriers. Barriers shall be at least 42" high, have adequate strength, and shall be of a type which will warn of potential danger.

Section R4506. Protection of Adjoining Property. Adjoining public and private property shall be protected from damage during construction, remodeling and demolition work. Protection shall be provided for footings, foundations, party walls, chimneys, skylights and roofs.

(63)

MONTGOMERY COUNTY EXECUTIVE REGULATION

Offices of the County Executive. 101 Monroe Street. Rockville, Maryland 20850

Subject: Adoption of the 2009 IBC, IRC, IECC, IMC, IFGC	Number: 26-09
Originating Department: Department of Permitting Services	Effective Date:

Sec. 148. Appendix C. Appendix C is hereby adopted in its entirety.

Sec. 149. Appendix E. Appendix E is hereby adopted with the following modification: Delete all except subsections AE501 through AE606, with the following modification to Section AE502.3: In the last sentence, first paragraph, change 12 inches (305) to 24 inches (610).

Sec. 150. Appendix F. Appendix F is hereby adopted in its entirety.

Sec. 151. Appendix G. Appendix G is hereby adopted in its entirety, with the following modifications

Section AG101.1, add the following sentence at the end: Swimming pools, Spas and Hot Tubs shall also comply with Chapter 51 of the Montgomery County Code.

Section AG105.2: Item 1. Change 48 to 60 and 1219 to 1524; Item 9.3. Delete.

Sec. 152. Appendix K. Appendix K is hereby adopted in its entirety.

Isiah Leggett, County Executive — 3/25/10 Date

Approved as to form and legality
Montgomery County, Md. County Attorney's Office
By

MARYLAND-NATIONAL CAPITAL BUILDING INDUSTRY ASSOCIATION
1738 Elton Road, Suite 200, Silver Spring, Maryland 20903
(301) 445-5400 / Fax (301) 445-5499
Email : communications@mncbia.org
Website : www.mncbia.org

Via E-Mail
January 14, 2010

Mr. Hadi Mansouri
Montgomery County Department of Permitting Services
Division of Building Construction
255 Rockville Pike, 2nd Floor
Rockville, Maryland 20850

Subj: MCER 26-09, Adoption of the 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes

Dear Hadi:

The Maryland-National Capital Building Industry Association (MNCIA) is pleased to provide you with additional comments on the proposed Montgomery County Executive Regulation No. 26-09. As we noted at the December 17 public hearing, the comments we presented (enclosed) were based on an earlier version of the proposed regulation. The MNCBIA's Codes & Standards Committee has reviewed all the amendments proposed by the County as it adopts the 2009 International Building, Residential and Energy Conservation Codes; our comments are below:

International Building Code

Sec. 45, 46, & 51. Sections 1007.3 and 1007.4 deleted exceptions. Section 1012.7. Change "1 ½ " to "2 ¼ ".

The Association recommends that Sec. 45, 46 & 51 be removed from the County's regulations.

The ICC has determined that, when buildings are equipped with an approved automatic sprinkler system in accordance with Section 903.3.1.1. or 903.3.1.2., there is no need for 'areas of refuge and 48 inch wide stairs' and therefore they are not required. Sec. 51 would further increase the width of stairs. Since new buildings in the County are mandated to have sprinkler systems, there is no reason for the County to exceed the ICC determination, without cause or rationale. The MNCBIA, therefore, sees no justification for approving Sec. 45, 46, and 51.

It is important to note that these changes, if adopted, would have a profound effect on the cost and efficiency of buildings. In addition, projects that have been placed on hold, due to the economic downturn, would be required to be redesigned at considerable expense. The proposed increase

is not under consideration in other Maryland jurisdictions, nor in Virginia and the District of Columbia.

Sec. 28. Section 509.2. Added condition 9: requires that a 'fire command center' complying with Section 911 be provided.

Sec. 28 covers both high-rise and mid-rise buildings. The County has not provided any rationale for requiring a 'fire command center' in mid-rise buildings. The Building Industry Association can find no justification for a 'fire command center' in mid-rise buildings. The International Code does not require this condition for mid-rise buildings nor do the surrounding jurisdictions in the Washington Metro Area. The BIA recognizes that, on a rare occasion, there may exist the need to require a fire command center.

An amendment that removes mid-rise buildings from complying with this condition would not preclude requiring a fire command center under certain circumstances such as the "Texas doughnut design". Therefore, MNCBIA recommends that Sec. 28 be amended to remove mid-rise buildings from this requirement.

International Residential Code

Sec. 130 & 132. Section R313.1.1. Design and installation of townhouse automatic fire sprinkler systems.
Section R313.2.1 Design and installation of one- and two-family dwellings automatic sprinkler systems.

For the first time, the ICC has added residential automatic sprinkler systems requirement in the main body of the code. The code (Section R313.2.1) allows design and installation of one- and two-family dwelling automatic sprinkler systems with either Section P2904 or NFPA 13D. The Code, through an oversight (that the ICC code process is expected to correct), allowed townhouse sprinkler systems to be designed and installed using Section P2904 but did not mention NFPA 13D as an alternative. The BIA supports the use of P2904 or NFPA 13 D to design sprinklers systems; the option will offer consumers a choice as well as cost savings when using P2904.

The Association therefore recommends that Sec. 132 not be approved as written in order to leave the choice of P2904 or NFPA 13D in the residential code (Section R313.2.1). Sec. 130 should be amended to read "...in accordance with Section P2904 **or NFPA 13D**."

Previous Testimony: Our previous recommendations and comments (refer to enclosed December 17 Testimony) remain the same regarding IBC 1009.4.2 and IRC Wall Bracing, as well as IECC, Chapter 11 of the IRC and the alternative to ENERGY STAR.

Effective Date: Given the complexity of the amended 2009 Code proposed for adoption by Montgomery County, the Association requests that DPS provide 2-3 public forums on MCER 26-09 to brief the affected stakeholders on the new requirements, and that the 90-day transition period begin after the briefings occur on the new code. This will provide the opportunity and time for the industry, reviewers and inspectors to become familiar with the new requirements, additional DPS inspections and to transition the necessary construction documents, contracts, and subcontractors.

The Building Industry anticipates that the adoption of the County's proposed amended version of the 2009 I-Codes will cumulatively continue to drive up the hard cost of designing and constructing a dwelling unit by several thousand dollars. Some of this additional cost can be mitigated while concurrently maintaining the integrity of the model codes; the BIA believes this can be accomplished by:

- amending the County's currently proposed above-2009 International Code requirements (Refer to this letter's reference to Sec. 45, 46, 51 and 28),
- allowing the more cost effective P2904 residential fire sprinkler systems as provided for in the 2009 IRC (Refer to this letter Sec. 130 and 132), and
- allowing the use of the 2009 IECC with more energy efficient equipment, which is an energy neutral tradeoff (Refer to enclosure).

In these fragile and challenging economic conditions, we believe that cost containment/reductions are essential to the county, its citizens and the building community.

We appreciate the County's careful consideration of industry's comments, and look forward to answering any question you may have regarding them.

Sincerely yours,

Randy Melvin, Chair
Codes & Standards Committee

Enclosure

MARYLAND-NATIONAL CAPITAL BUILDING INDUSTRY ASSOCIATION
1738 Elton Road, Suite 200, Silver Spring, Maryland 20903
(301) 445-5400 / Fax (301) 445-5499
Email : communications@mncbia.org
Website : www.mncbia.org

MARYLAND-NATIONAL CAPITAL BUILDING INDUSTRY ASSOCIATION
TESTIMONY ON
MONTGOMERY COUNTY ADOPTION OF THE 2009 IBC, IRC and IECC WITH AMENDMENTS
PUBLIC HEARING
2:30 PM, THURSDAY, DECEMBER 17, 2009
255 Rockville Pike,
2nd Floor, Seneca Conference Room
Rockville, Maryland 20850

My name is John Stovall. I am the Chairman of the Codes & Standards Committee of the Maryland-National Capital Building Industry Association, and an architect with NS Architects in Rockville.

The Committee has reviewed the County's proposed amendments to the 2009 International Building Code (IBC), International Residential Code (IRC), and International Energy Conservation Code (IECC) as announced in the Montgomery County Register of December 1, 2009. Based on our review, the Association is here today to support, in principle, Executive Regulation No. 26-09 with the following additional comments and recommendations that need your attention. In addition, we are providing the building industry's views in anticipation of the County's acceptance of the 2009 IECC as an alternative to Energy Star.

International Building Code

1009.4.2. Four story townhouses can be constructed under the R-2 and R-3 Use Groups of the IBC. For consistency between the IBC and IRC, we recommend that the following amendment be added:

1009.4.2, Exception 5. Change 7.75 to 8.25 and in both occurrences Change 10 to 9.

Sec. 45 & 46. Sections 1007.3 and 1007.4 deleted exceptions. The Association would like to understand what information led to the deletion of these exceptions. If adopted, this modification will have a profound effect on the cost and efficiency of buildings. The ICC has determined that areas of refuge at stair landings and 48" wide stairs are not required if the buildings are provided with an approved automatic

sprinkler system. We recommend that this amendment not be adopted.

Sec. 51. **Section 1012.7. Change "1 ½" to "2 ¼".** The Association would appreciate understanding why this change was made to 1012.7 Clearance. What information supports this change? If Section 45 is enacted, this will further increase the required width of stairs.

International Residential Code

Sec. 81 The changes proposed in Sec. 81 may be already incorporated in the 2009 Code Section R313 Automatic Sprinkler Systems. Note the effective date January 1, 2011 in R313.2 may need to be changed. Since the Plumbing code is cited in R313.2.1 of the 2009 code, WSSC should be requested to retain relevant sections of the 2009 International Plumbing Code as the Commission adopts and amends the Plumbing Code.

IRC Nos. Some of the Code numbers referenced in the IRC part of MCER 26-09 appear to be 2006 Code numbers rather than the 2009 Code numbers; for example:

Sec. 77.	R311.4.3 should be 2009 IRC R311.7.4.1.
Sec. 78.	R311.5.3.1 should be 2009 IRC R311.7.4.2.
Sec. 79.	R613.2 should be 2009 IRC R612.2.

Wall Bracing The Association will be making some preliminary oral comments on the relevant sections of the 2009 IRC and may submit additional comments. Due to complications posed by the wall bracing sections of the 2009 code, we hope that DPS will be amenable to variances requested based on the ICC publication, *A Guide to the 2009 IRC® Wood Wall Bracing Provisions.*

IECC and Chapter 11 of IRC and the Energy Star Alternative

The Association supports the anticipated Montgomery County recommendation to adopt the 2009 IECC requirements as an equivalent to Energy Star.

IRC Energy — Since Chapter 11 of the 2009 IRC is essentially identical to the prescriptive compliance portion of Chapter 4 of the 2009 IECC, MNCBIA recommends that Chapter 11 of the 2009 IRC be accepted as an equivalent alternative.

Equipment — The Association proposes that the County adopt an amendment to the IECC to allow more energy efficient equipment trade-offs. This amendment would be energy neutral. At the recent ICC code hearings, an equipment trade-offs amendment to IRC Chapter 11 received a positive vote.

The attached document addresses these recommendations as well as testing and inspection issues. Please consider the attachment part of the hearing record.

The Building Industry looks forward to continuing to work constructively with the Department of Permitting Services. We may provide additional comments if needed by the January 15th deadline.

Attachment: Montgomery County Energy Star Equivalent Desirable Regulatory Components

Montgomery County Energy Star Equivalent Desirable Regulatory Components

The Maryland-National Capital Building Industry Association (MNCBIA) advocates for the following critical components to be contained within the Department of Permitting Services (DPS) Energy Star Equivalent.

- The 2009 International Energy Conservation Code (IECC), with one energy neutral amendment, which reinstates more efficient equipment trade-offs, should be used as the Energy Star Equivalent. As Chapter 11 of the 2009 International Residential Code (IRC) is essentially identical to the prescriptive compliance portion of Chapter 4, of the 2009 IECC, it should, by default, also be acceptable.

  Rational:

  - The 2009 IECC was published after the original Montgomery County Energy Star Legislation was passed. The 2009 IECC is the energy savings equivalent of Energy Star as verified by the County's Department of Environmental Protection (DEP).

  - The one amendment proposed by the building industry allows more energy efficient equipment trade-offs and is an energy neutral change. Recognizing this deficiency in the 2009 IRC energy chapter, the more efficient equipment trade-offs were voted to be restored in the first round of ICC code hearings.

  - The 2009 IECC and the Energy Chapter, Chapter 11, of the IRC are in the traditional International Code Council format that both the builder and DPS are already familiar with. This will maintain continuity and minimize the unnecessary stress and cost of transitioning.

  - As County access to some American Recovery and Reinvestment Act of 2009 (ARRA) funds are tied to adopting the 2009 IECC or equivalent, the adopting of the 2009 IECC with only one energy neutral amendment directly and clearly illustrates compliance with the requirements of the ARRA.

- In accordance with the provisions of the 2009 IECC, accept either county conducted visual or approved third party blower door testing as an acceptable means of verifying the homes air sealing, rather than just accepting third party blower door testing.

Rational:

- A visual air sealing inspection alone fully complies with the requirements of the 2009 IECC.

- Allowing only the blower door option is problematic in that it cannot be done until the home is completed. If a problem is identified at completion, the necessary repairs will likely delay settlement. Delayed settlements usually set off an adverse chain of events, including, but not limited to, the potential expiration of financing terms, departure residence sales and occupancy, and moving plans and peoples lives are disrupted, thus creating unnecessary hardships. Routinely paying for blower door tests on every home is costly and unnecessary as visual inspections can reliably insure properly air-sealed homes.

- The most critical aspects of a visual air sealing inspections occur much earlier in the construction process than the blower door test. Thus, any deficiencies can be identified and resolved at a time that is much less disruptive to buyers and builders schedules and at a reduced cost.

- It is wasteful and counter productive to unnecessarily require independent third party testing for something that can efficiently and cost effectively be visually verified via normal inspection processes.

- DPS completes timely, air sealing, at "low framing" inspection and insulation inspection at "close-in" inspection as part of their normal/established inspection program.

  Rational:
  - Follows already well-established and proven inspection processes. Eliminates the complication and expense of having to bring in a third party inspector for these inspections.

- As provided for under the 2009 IECC, measuring leakage for ductwork and air handlers located outside of the building envelope shall be allowed at either rough or final stages.

  Rational:
  - Allowing testing of ductwork at "rough install' will allow any problems to be identified and addressed at an earlier stage of construction where they are more easily and cost effectively corrected and less likely to cause disruptive delays. However, the second code compliant opportunity for testing at "post construction" remains an essential option. If there are scheduling problems with getting the ductwork testing at the "rough install" or the test should identify deficiencies at "rough install", having this second opportunity to test at "post construction" will enable work to continue on the balance of the system while repairs are being made to any deficiencies found.

IRC HEARING TRANSCRIPT

Mohammad Siddique:

Today is December 17, 2009, and the time is 2:50pm, and we are assembling in the Senica Conference room for the Montgomery County Department of Permitting Services, on second floor, 255 Rockville Pike, Rockville Md. I am Mohammad siddique, Manager of special projects in the office of County Executive, and assigned to conduct this public hearing. Subject of this hearing, is to obtain comments for the purposed regulations of the 2009 International Code Council Standards, Including International Building, Energy Conservation, Mechanical Fuel/Gas, and Residential Codes. The proposed amendments will bring Montgomery County into conformance with the required 3 years state cycle, state code adoption. The council must adopt, the county must adopt these standards within press ..... period. The hearing is being held in pursuant to section 18-3 and 18-4 of the Montgomery County Code. Executive Order 26-09, effective from the date of approval, will supersede executive order number 28-07. The purpose of the hearing is to obtain public comments on the purposed amendment, provide department director with full benefit of citizen, community imput, in the decision making process. Any interested person is entitled to be heard at this hearing. At the conclusion of the hearing input will be compiled for the director. Here with me is Mr. Hadi Mansouri from the Department of Permitting Services, who will collect your comments afterwards. Please note, that January 15, is the date of to which you can provide your original comments to Mr. Mansouri. I have names of four people here, what we'll do, We'll let you speak, one by one, and at the end, what you'll do, in the beginning what you'll do, is tell your name, your affiliation, if you're an individual tell your address, and then go from there, because everything is being recording right now. So with that I will ask Mr. John Stovall, would you please start.

John Stoval: Alright good afternoon, is this working?

Mahammad Siddique: Yes

John Stoval:

Excellent, my name is John Stoval, I'm chairman of the Codes and Standards Committee, for the Maryland National Capital Building Industry Association. We have, we have reviewed the amendments that were sent to us, it seems that we have reviewed an earlier version. I think the comments that we are going to make are still pertinent, to it. On the whole what we have seen, I think is an excellent response. We have a few comments we want to make, and what a, what I would appreciate, is that once we've given our comments, and given you time to think about them, that we can have a further dialog before the final comments are published. In our reading there are a number of things, of course we understood, what was being said, but we did not understand why the particular amendments or comments were being made. So, I think, in some parts education is needed on our part as to what you were intending, and then in another part, come up with what we have to say. I think a we'll need some further study on your part. So with that in mind here with me today, as I am the current chairman for the Codes and Standards Committee, as of the end of this meeting, I'll be the past chair, and the new chairman of Codes and Standards with me, Randy Melvin, is sitting on the left of me, he and I basically have comments for this meeting. In the International Building Code, we really have limited our selves to three comments. First of all, somewhere after section 46, in your comments we would, we would like to see another amendment added to the list. Four story town houses, currently can be an R constructed under the R-2 and R-3 use group in the International Building Code. For consistency between the IBC and the IRC, we recommend that the following amendment be added, Section 1009.4.2 exception 5, change 7.75 inches to 8.25 inches, and in both occurrences

change 10 to 9. This is an amendment that is similar to what is being offered under the IRC, and certainly town homes whether there built under the IBC or the IRC should have the same requirement for treads and risers. Also in R-2 you can have apartments that are two stories, that have an interior stair, that should have a residential profile to them. Next, under your amendments section 45 and 46, we note that certain sections have been deleted, which would require the use, which would require stairs, and excuse me just a moment, and area of refuge, would require stairs to be widened to 48 inches between the rails, and to require areas of refuge to be placed in those buildings. I sit on the Means of Egress Committee for the ICC, I have done so for the past three code cycles. We have not seen any change similar to this brought before the ICC. The ICC has determined that areas of refuge, and wider stairs are not required when building with sprinklers. We do not understand why these sections were being deleted, and we would recommend that these two sections be removed from the amendments. Next, under section 51 this is a small item we do not understand, why the code has been changed to require 2 ¼" between a railing and as wall proposed to 1 ½" inches. Certainly if the previous comment is adopted and the 48" is required between railings, this change from 1 to 2 1/4" inches would be a further widening requirement for the stairs beyond what is shown in the IBC code. For the following comments, I would like to turn the microphone over to Randy Melvin, to talk about the International Residential Code in items of concern in that area. Randy if you would.

Mohammad Siddique:

Would you please identify yourself clearly, and what organization you belong to, and there address if any.

Randy Melvin:

Certainly, thank you John, Randy Melvin with Winchester Homes, Bethesda, Md. Thank you for the opportunity to testify today. The first item is regarding sprinklers, residential sprinklers, and while we had a chance to study the prior version, we haven't had a lot of time to look at the current versions. So, my comments will be more general rather then to absolute specific sections. In the new section it would be item number, section 130 and 132, and that is with the residential sprinklers. We would as an industry, like to be able to have them installed by the Plummer, per the plumbing code under P2904, and look forward to further dialog with the department on this. I'm not currently clear if the current version of NFA, NFPA 13D, will allow that. In addition, we all also think its important as per the IRC code, to be able to do the combination or multi use system, combines both sprinkler and plumbing system on the same system, so we look forward to having more dialog with you on that. The second item, we have, is regarding wall bracing, and as we understand, the 2009 wall bracing section has imperfection, and confusing sections in it, and even some marrata We'd like to reference the document from the International Code Council, called a guide to 2009 IRC, wood wall bracing provisions. Perhaps to help clear up some of those gaps in the existing wall bracing section of the 2009 IRC, and would also like to submit here a copy of the 2012 changes to this section, which were just unanimously approved in Baltimore at the code hearings. So, again, we'll look forward to having some additional dialog with you on that section. The next section we'd like to talk about, is the International Energy Conservation Code, and chapter 11 the energy chapter, of the 2009 IRC. The association supports the anticipated, the Montgomery County recommendation to adopt the 2009 IECC requirements, as an equivalent to energy star. However, there are, there is, one specific item or amendment with the 2009 IECC, and that is the energy efficient equipment trade off which should be cable 405.5.2.1, and what that has to do with, is if you put a more efficient piece of heating cooling water heating equipment in your home, that produces the same BTU's with less energy, you know longer get any credit for that, in every prior version of the energy codes we have, and in the hearings in Baltimore for the 2012 code under the IRC, that was recently reinstated, because the recognized

that it was a short coming in the 2009 IECC. Now why do we feel this is so important, if you take that tool away it adds cost, it reduces choices, and adds cost to the consumer, and it's an energy neutral change. So, whether you save the energy through additional insulation, or better fenestration ratings, or more efficient combustion equipment, you would still save the same amount of energy, its just giving you another choice. If builders are forced in not being able to use the more efficient equipment trade off, we will have to make improvements in the envelope only, which gives us no incentive to put more efficient equipment in, which means we will be putting, be putting natualling convected equipment in B vent equipment, and by putting B vent equipment in we've more or less condem that house for the future to staying with the less efficient equipment, because of the venting system we've put in. As for the less efficient equipment not the more, and in addition as we're building tighter houses, the more efficient equipment would also be desired to help for air quality. So we feel, we feel strongly, that that's an amendment that should be accepted, it is a energy neutral amendment. As far as specific as regulatory aspects of adopting the 2009 energy code, as a comproable energy efficient savings to energy star, we have a number of specific items I'd like to run through very briefly here. The first, would be that we would also like to see chapter 11 of the International Residential Code, that's the energy chapter, recognizes the equivalent, and our rasional for that is its esenually identical, if not entirely identical, to the residential chapter of the International Energy Conservation Code, so by default, it should be acceptable. The other aspect, is the Department of Environmental Protection did in fact eqate the two energy star, and the International Energy Conservation Code, there was some questions on blower door tasks being required, which is not in the code, it's a one in seven requirement for energy star, but there is no reason for a good visual inspection which occurs earlier in the process, and is less likely to cause problems at settlement. It can't be an adequate means of, you know, identifying and ceiling a home appropriately, and we have found through our Camberly Division, which currently does energy star, that basically, we never have problems in failing a blower door task, which effectively says all the timing cost that goes into doing that is redundant, and unnecessary, and you know we would look forward to the, you know, Department of Permitting Services, you know, as part of there inspections, including the air ceiling inspection of the home, and for the duck blaster test, we are fine with that, but we feel that its important that we would be given, the industry would be given a choice of doing it as per stated in the code book, either at rough stage, or at completion. Most builders, I believe, would do it at rough stage, because if there is a deficiency it can be found and fixed, with out at the easiest time, and most likely without disrupting the overall schedule on the home. However, if there was a deficiency, it didn't pass, construction could continue, and it could be done at final stage of construction, and showing you know, to be adequate at that stage as well to provide that flexibility. Thank you.

Mohammad Siddique:

Thank you very much, next person listed here is Meral Iskir, you want to speak?

John Stoval:

Yes, we took this as a sign up list not as

Mohammad Siddipue:

That's ok, that's alright, but I'm just going through this in case somebody wants to speak, everybody that wants to speak must have the opportunity to speak. That's all then.

John Stoval: yeap

Mammmad: No one else showed up here, I guess, ah you know, that you can submit your detail comments in n writing, by January 15. Alright, thank you very much, we appreciate you coming here.

JUSTIFICATIONS ER 26-09

ER Section	Code Section	History / Rationale
International Building Code, IBC 2009		
3	101.1	Insert jurisdiction name.
4	101.2	Add an additional exception to allow the use of the Maryland Building Rehabilitation Code (MBRC).
5	101.4.3 – 101.4.5	Delete references to codes not adopted/enforced by Department of Permitting Services (DPS).
6	101.4.1	Revise the applicability of the International Fuel and Gas Code (IFGC)
7	102.6	Delete references to the International Property Maintenance Code (IPMC) and change the reference to the International Fire Code (IFC) to the Montgomery County Fire Safety Code.
8	103, 108, 111, 113	Delete administrative provisions that conflict with the requirements in Montgomery County Code (MCC) Chapter 8
9	105.1	Clarify that each building and each address needs a separate permit.
10	105.2	Delete administrative provisions that conflict with the requirements in Montgomery County Code Chapter 8
11	105.3 through 105.7	Delete administrative provisions that conflict with the requirements in Montgomery County Code Chapter 8
12	109.1	Clarify that permit fees are to be paid for each application.
13	109.2 through 109.6	Delete administrative provisions that conflict with the requirements in Montgomery County Code Chapter 8
14	110.3.10	Clarify that final inspections must be approved before spaces can be occupied.
15	114 & 115	Delete administrative provisions that conflict with the requirements in Montgomery County Code Chapter 8
16	305.2	Change the age of children to coordinate with Day Care Administration regulations.
17	308.2	Change the definition of small care facilities to coordinate with Day Care Administration regulations.
18	308.3.1	Change the age of children to coordinate with Day Care Administration regulations.
19	308.5.2	Change the age of children to coordinate with Day Care Administration regulations
20	310.1	Add definitions for family day care home and group day care home. Coordinated with Day Care Administration regulations.
21	403.2.1.2	Delete the permitted reduction in shaft rating to coordinate with requirements of the Montgomery County Fire Safety Code.
22	403.4.4	Change the reference for in building signal amplification from the IFC to the Montgomery County Fire Safety Code.
23	411.1	Add an exception to Special Amusement Structure for small play structures.
24	419	Delete provisions for Live/Work Units to eliminate conflicts with existing requirements for home occupations.
25	422.3	Change the required refuge area to be calculated on an per occupant basis (in lieu of per "nonambulatory patient" basis). Coordinates with the requirements with Ambulatory Health Care in the Life Safety Code.

ER Section	Code Section	History / Rationale
26	424	New section to require radon control features for all R use structures.
27	501.2	Delete the requirement for existing buildings. Modify the size of address numbers/letters to conform to Montgomery County Fire Safety Code.
28	509.2	Add two additional conditions for pedestal construction. Stories above the 3 hour horizontal assembly to be considered a story above grade. A fire command center to be provided for such structures.
29	703.6	Include in the signage the hourly rating of the wall.
30	708.14.1	Required elevator lobbies cannot interrupt the corridor system. Corridors must go directly to the exit without passing through the elevator lobby.
31	716.5.3	Expand the exception for smoke dampers to all uses and those protected with 13R sprinklers.
32	903.1.1	Requires that items that are incompatible with water to be protected with an appropriate extinguishing agent.
33	903.2.1.2	Match the sprinkler requirement for bars, discotheques, nightclubs, etc. of Life Safety Code (LSC)
34	903.2.8	Exception for single dwelling unit in an S-1 occupancy just dwelling unit A/S
35	903.3.1.3	Specify which occupancies can use 13D sprinklers.
36	905.3	Prohibit occupant hose standpipe systems. All standpipe systems will be Class I systems
37	909.9	Require that design fires for smoke management systems shall have a heat release rate not less than 5000 Btu/s
38	909.16	Change language regarding the location of the fire fighter smoke control panel. Not necessarily wanted at the fire alarm control panel.
39	911.1.1	Specify that a door to the exterior shall be provided in the fire command center.
40	911.1.5	Clarify and add to the list of items needed in a fire command center to coordinate with the requirements of the Montgomery County Fire Safety Code.
41	915.1	Modify language for In-Building Signal Amplification to coordinate with Montgomery County's previous requirements (previous 3110.1). Included all types of construction in the cases of buildings greater than 3 stories, due to field experience from MCFRS.
42	915.2 & 915.3	Inclusion of language for In-Building Signal Amplification (previous 3110.2 and 3110.3)
43	1004.1.1	Add occupant load factor for shell offices. 65 sf/person based on a weighted average of 10% assembly (15sf) and 90% office (100sf) load factors.
44	1003.5	Modify where 13 inch treads are required to coordinate with Montgomery County Fire Safety Code.

ER Section	Code Section	History / Rationale
45	1007.3	Delete exceptions for areas of refuge (and other accessible means of egress components) at stairs due to the presence of automatic sprinklers. Also delete exception for areas of refuge in R-2 occupancies. Montgomery County believes that a high level of protection is provided when sprinklers are installed. However, sprinklers do not relieve the obligation to have appropriate features to affect a safe egress for all occupants.
46	1007.4	Delete exceptions for areas of refuge at elevators due to the presence of automatic sprinklers. Also delete exception for areas of refuge in R-2 occupancies. Montgomery County believes that a high level of protection is provided when sprinklers are installed. However, sprinklers do not relieve the obligation to have appropriate features to affect a safe egress for all occupants.
47	1008.1.2	Clarify that doors in an exit enclosure swing in the direction of egress travel. Coordinates with requirements in the Montgomery County Fire Safety Code.
48	1008.1.9.10	Coordinate with requirements in the Montgomery County Fire Safety Code.
49	1009.13	Allow ladders to access unoccupied roofs.
50	1012.6	Add an exception to the run of the handrails when a hazard is created by such an extension.
51	1012.7	Modify clearance between the handrail and the wall to coordinate with the Montgomery County Fire Safety Code.
52	1013.1	Clarify that retaining walls with walkways within 3 feet on the high side need guards.
53	1013.2	Modify exceptions to guard height to coordinate with Montgomery County Fire Safety Code.
54	1013.3	Require guard pickets to meet 4 inch spheres. Coordinate with Montgomery County Fire Safety Code.
55	1015.2.1	Modify remoteness of exits for a breezeway apartment building condition.
56	1018.1	Clarify that corridors within a single tenant B occupancy space do not need fire resistance rating.
57	1020.3	Add requirement that a stair connecting all floors must be accessible by the fire department.
58	1027.1	Clarify that in an exterior exit condition, there needs to be a direct line of sight between the stair discharge door and the door to the outside.
59	Chapter 11	Replace with Maryland Accessibility Code.
60	1405.13.2	Add two new exceptions for four stories or less buildings to allow the window sill to be 18 inches from the finished floor.
61	Table 1607.1 Item 29	Specify that the uniform live load for roofs is nonreducible.
62	1607.14	Add specifications for structure required to support a fire department vehicle.
63	1608.2	Specify a ground snow load for the county.
64	1612.3	Identification of areas that require flood hazard evaluation.
65	1704.4	Require special inspections for spread concrete footings.
66	1704.4	Require special inspections for footings in low bearing soils.
67	Table 1704.4 Items 10 & 11	Modify the required inspection frequency.

ER Section	Code Section	History / Rationale
68	Table 1704.4 Item 11	Specify that strength evaluations be based on field cylinders only.
69	1801.3	For structures within 1000 feet of a landfill, special evaluation to mitigate any landfill gas accumulation.
70	1809.5	Specify a minimum frost line depth.
71	1901.2.1	Specify the controlling design document for precast structures in the case of a conflict.
72	Chapter 29	Delete the chapter on plumbing systems.
73	3001.2, 3001.3, 3001.4	Delete sections and provide pointer to the State of Maryland requirements.
74	3107.1	Insert pointer to sign requirements in Chapter 59 of the Montgomery County Code.
75	3109.3	Increase enclosure height for pools to 5 feet to coordinate with Health Department requirements.
76	3109.4.1	Increase gate height at pools to 5 feet to coordinate with Health Department requirements.
77	3302	Specify that construction safeguards in accordance with NFPA 241 shall be provided. Coordinates with Montgomery County Fire Safety Code.
78	3401.1	Specify that the MBRC is an option when dealing with existing buildings. Also require compliance with the Montgomery County Fire Safety Code.
79	Appendix F	Rodentproofing requirements adopted.
80	Appendix G	Flood resistant construction provisions adopted with amendments based on appropriate Montgomery County Executive Regulations.
81	Appendix H	Sign regulations adopted with amendments to conform to the requirements of Chapter 59.
International Energy Conservation Code, IECC 2009		
82	101.1	Insert jurisdiction name.
83	101.2	Add exception to allow the use of the Maryland Building Rehabilitation Code (MBRC).
International Mechanical Code, IMC 2009		
84	101.1	Insert jurisdiction name.
85	101.2	Add an additional exception to allow the use of the Maryland Building Rehabilitation Code (MBRC).
86	106.4.3 – 106.4.4 106.5 109	Delete references to codes not adopted/enforced by DPS. Covered in the County ER 11-08 (Fees) and also Chapter 8 of MCC. Covered in Chapter 8 of MCC.
87	302.6	Section added due to vague manufacturers' installation recommendations and no specific code guidelines for roof equipment support and anchorage.
88	306.1.1.1	Section added to expand upon unacceptable locations of appliance locations to help ensure a clear path of exit in the event of an appliance fire within a dwelling unit.
89	306.3	This addition will add greater accessibility then is currently provided for service and inspection of appliances located in attics.

ER Section	Code Section	History / Rationale
90	Table 403.3 under heading "Specialty Shops"	Too often repair garages or body shops claim natural ventilation as a means of controlling the level of air born contaminants. While this method may be marginally effective depending on building orientation and weather conditions, it only works when the doors and windows are open. The 2009 IMC does not list automotive service/ repair garages under table 404.3 for ventilation air requirements. This addition will require mechanical ventilation reducing the possibility of personal injury due to the inhalation of contaminants.
91	506.1	State mandates Montgomery County to enforce the NFPA and IMC. These additions will help clarify the code requirements and what to do in case of discrepancies within the two codes.
92	506.3.2.5	It has been discovered through inspection that a 100 watt light bulb is ineffective and time consuming when testing large grease duct systems. The change to a higher wattage bulb will greatly increase the effectiveness of the inspection and ultimately lead to a safer grease duct system.
93	506.3.9	Clarify and ensure consistency between the two adopted codes.
94	506.3.12.2	National Fire Protection Association (NFPA) has additional guidelines for side discharge commercial kitchen exhaust fans. This addition will direct design professional to appropriate requirements.
95	606.2.1	Addition ensures consistency between IMC and NFPA requirements.
96	606.2.1	Addition ensures consistency between IMC and NFPA requirements.
97	607.5.5	Addition brings IMC in line with the IBC as an option for design professionals to forgo the required combination fire smoke dampers and use sub ducts and an Emergency Standby Power System
98-105	608	New added sections are new to the IMC and are directly derived from the International Fire Code and NFPA 110 for the installation of Emergency & Standby Power Systems. They are intended to give mechanical designers and installers more direction in complying with codes.
International Fuel Gas Code, IFGC 2009		
106	101.1	Insert jurisdiction name.
107	101.2.1	Allows the use of the provisions Maryland Building Rehabilitation Code (MBRC).
108	106.5.3, 106.5.4, 106.6, and 109.2 to 109.7	Delete references to codes not adopted/enforced by DPS. Covered in the County ER 11-08 (Fees) and also Chapter 8 of MCC. Covered in Chapter 8 of MCC.
109	Chapter 4	Requirements covered by other codes, such as NFPA codes, or other jurisdictions, such as Washington Suburban sanitary Commission (WSSC) for piping construction.
International Residential Code, IRC 2009		
110	R101.1	To insert jurisdiction name.
111	R101.2	Add an additional exception to allow the use of the MBRC.

ER Section	Code Section	History / Rationale
112	R102.7	County did not adopt the IPC
113	R105.2 *Item 1*	Due to zoning ordinance requirements, it can not be exempted.
	Item 2	To be consistent with the zoning ordinance requirements for fences
	Item 3	Total height of the wall determined based on the frost depth (24") plus the over 30" difference in surface elevations requiring guardrails. Same amendment since 2000.
	Item 10	Deck construction and in particular its connections are critical for life safety. Therefore, any deck needs to be designed and inspected to ensure safety of occupants.
	R105.3.1.1	County does not allow this in flood zone.
	R105.3.2	Covered in Chapter 8 of Montgomery County Code (MCC).
	R105.5	Covered in Chapter 8 of MCC.
114	R107	Covered in Chapter 59 of MCC.
115	R108.1, R108.2 through 108.5	Covered in the County ER 11-08 (Fees) and also Chapter 8 of MCC.
116	R109.1	Applicable inspection types as have been required in the county to address local concerns.
117	R110	Covered in Chapter 59 of MCC.
118	R112.2	Covered in Chapter 8 of MCC.
119	R202 *1st definition*	Consistent with Chapters 8 and 59 MCC.
	2nd definition	Avoid building a 4 story above grade dwelling unit (structure) under IRC 2010. Consistent with zoning Chapter 59 of MCC.
	3rd definition	Ensure storage space is used only for storage and protects occupants from using non-complying habitable space.
120	Table R301.2(1)	Specify design criteria applicable in the county.
121	R305.1	Consider ceiling height over the entire room and not portion of it.
	R305.1.1	To allow future remodeling of an existing basement having adequate ceiling heights.
122	R307.1	Department of Permitting Services (DPS) does not enforce plumbing code.
123	R312.1	Consistent with code requirements for fall protection.
124	R313.1.1	DPS does not enforce plumbing code but the National Fire Protection Association (NPFA) 13D. Requirement has been enforced for over 20 years for attached dwelling units (townhouses).
125	R313.2	Requirement has been enforced since 2004 for single- or two-family detached dwellings.
126	R313.2.1	DPS does not enforce plumbing code but the National Fire Protection Association (NPFA) 13D.
127	R313.4	Coordinate with Chapter 8 of MCC requirements for residential fire sprinklers.
128	R319.1	Consistent with Montgomery County Fire Code Section 22-97 requires new single family dwellings.
129	R321.1	Ensure fire protection of elevator shaft. Same requirement in International Building Code (IBC) 2010.
130	R321.3	Consistent with state requirements for accessibility.
131	R322.1	Consistent with other requirements of MCC regarding flood resistant construction.

ER Section	Code Section	History / Rationale
132	R401.5	For structures within 1000 feet of a landfill, special evaluation to mitigate any landfill gas accumulation.
133	R403.1.4.1	400 sq ft limitation based on DPS experience foe these types of structures. To save cost of footing for non habitable structures and
134	R405.1	Allow new drainage system because of predominance of clay soil in this area. DPS enforced this requirement for many years.
135	R406.1	DPS's experience is that requirement is not adequate due to high water table in this area.
136	R406.2	Ensure materials and methods used are adequate for waterproofing.
137	R406.4	DPS's experience is that requirement is not adequate due to high water table in this area.
138	R506.2.3	Ensure that entire floor areas are protected and also comply with radon mitigation requirements.
139	R612.2	Consistent with emergency exit requirements without increase in story height.
140	N1101.2	Eliminate inconsistent requirements between Chapter 11 and International energy Conservation Code (IECC). Consistent with energy state code.
141	Chapter N1101.3 thru N1104	Eliminate inconsistent requirements between Chapter 11 and International energy Conservation Code (IECC). Consistent with energy state code.
142	M1305.1.3	Facilitate maintenance and service of equipment located in attic.
143	M1405.1	Consistent with ER 15-09 and other electrical requirements of MCC.
144	M1406.2	Consistent with ER 15-09 and other electrical requirements of MCC.
145	M1407.1	Consistent with ER 15-09 and other electrical requirements of MCC.
146	Chapter 25 thru 43	Washington Suburban Sanitary Commission (WSSC) is responsible enforcement of plumbing and gas codes in the county. Consistent with ER 15-09 and other electrical requirements of MCC.
147	Chapter 45	Enables DPS to address construction concerns and safety at construction sites.
148	Appendix C	To clarify requirements for mechanical draft systems.
149	Appendix E AE501 thru AE606	Covered by state legislation and other sections of MCC.
	AE502.3	Ensure compliance with the frost depth adopted in county.
150	Appendix F	To address requirement for radon mitigation.
151	Appendix G AG101.1	Ensure that safety requirements for pools, spas, etc. are consistent with other MCC regulations.
	AG105.2	Consistent with other MCC regulations.
	Item 9.3	Consistent enforcement.
152	Appendix K	Ensure adequate sound insulation.

OFFICE OF MANAGEMENT AND BUDGET

Isiah Leggett
County Executive

Joseph F. Beach
Director

MEMORANDUM

March 11, 2010

TO: Joseph F. Beach, Director
Office of Management and Budget

VIA: Angela Dizelos, Management and Budget Manager

FROM: Amy Wilson, Management and Budget Specialist

SUBJECT: Executive Regulation 26-9, 2009 International Code Council (ICC) Standards

REGULATION SUMMARY

The International Code Council (ICC) publishes the international series (I-series) of construction standards every three years, and the State of Maryland adopts these standards and obligates its political subdivisions to adopt the standards within a specific time period.

This regulation is adopted pursuant to Sections 8-13 and 8-14 of the County Code, as amended, and applies to the construction, alteration, addition, repair, removal, demolition, use, location occupancy, and/or maintenance of all buildings and structures, and their service equipment, within Montgomery County. It supersedes Executive Regulation 28-07, dated May 13, 2008, and all previous regulations adopting the BOCA and the ICC standards.

The purpose of the regulation is to adopt the 2009 editions of the International Building Code (IBC), the International Energy Conservation Code (IECC), the International Fuel Gas Code (IFGC), the International Mechanical Code (IMC), and the International Residential Code (IRC) with amendments necessary to achieve uniformity and consistency with Maryland and Montgomery County laws and ordinances, as well as department/division policies and procedures.

FISCAL SUMMARY

This regulation has no fiscal or economic impact on the County. Under Maryland law the County is obligated to adopt the building code standards that are set by the State, and therefore this regulation, in and of itself, imposes, nor causes any additional expenses to be incurred by those parties affected by the building code and does not require additional County resources.

Hadi Mansouri and Alicia Thomas of the Department of Permitting Services and Mike Coveyou of the Department of Finance contributed to and concur with this analysis.

jb:agw

c: Kathleen Boucher, Assistant Chief Administrative Officer
Carla Reid, Director, Department of Permitting Services
Mike Coveyou, Department of Finance
John Cuff, Office of Management and Budget
Amy Wilson, Office of Management and Budget

OMB REVIEW

✓ Fiscal Impact Statement approved

Joseph F. Beach, **OMB Director**

_____ Fiscal Impact Statement not approved, OMB will contact department to remedy.

Resolution No.: _____
Introduced: _____
Adopted: _____

COUNTY COUNCIL
FOR MONTGOMERY COUNTY MARYLAND

By: County Council

SUBJECT: Executive Regulation 26-09, 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes

Background

1. On March 26, 2010 the Council received Executive Regulation 26-09, 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes

2. This regulation would adopt the 2009 editions of the International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes. These editions are the most up-to-date versions of the model codes and will keep the County in conformance with the Maryland Building Performance Standard.

Action

The County Council for Montgomery County, Maryland approves the following regulation:

Executive Regulation 26-09, 2009 International Building, Energy Conservation, Mechanical, Fuel-Gas, and Residential Codes

This is a correct copy of Council action.

_____
Linda M. Lauer, Clerk of the Council