Minutes of the North Carolina Building Code Council
September 10, 2012
Raleigh, NC

All members of the North Carolina Building Code Council were present for the Council Meeting with the exception of Ed Moore and Ralph Euchner.

The following are summary minutes. The official minutes of this meeting are recorded on CD. Anyone desiring verbatim CDs or excerpts from these CDs should contact the Engineering Division of the NC Department of Insurance for information and reproduction costs. The next scheduled NC Building Code Council meeting will be held December 10, 2012. The location will be announced 30 days before the meeting.

Part A – Administrative Items

Item A – 1 Ethics Statement: Inquire upon conflicts of interest or appearance of conflicts of interest that exist within the Council.

There were no actual or potential conflicts of interest noted.

Item A – 2 Approval of minutes of the June 11, 2012 NC Building Code Council Meeting.

A motion to accept the June 11th meeting minutes was made and the minutes were approved.

Item A – 3 Cabarrus County Local Fire Code Ordinance

Motion – Alan Perdue/Second – Lon McSwain/Approved – The request was granted unanimously.

Item A – 4 Lincoln County Local Fire Code Ordinance

Motion to Approve – Alan Perdue/Second – Lon McSwain – The Chair allowed an amendment to the original motion to delay and send to the Fire Committee for review – Mack Nixon/Second – Steve Knight/Approved. There was discussion on a Substitute Motion and Robert's Rules. Vote on the amended motion/Approved 11-3.

Item A – 5 City of Concord Local Fire Code Ordinance

Motion to deny – Al Bass/Second – Mack Nixon/Granted. Ordinance denied from the June 2012 Agenda.

Item A – 6 Rules Review Commission Meeting Report

Barry Gupton reported that no BCC items were processed through the RRC since the last meeting. The 2-Temporary Rules from this meeting will be considered by the RRC at their September meeting. A hearing on the companion Permanent Rules will take place at the December BCC meeting.

Item A – 7 Public Comments

There were none.

Part B – New Petitions for Rulemaking

The following Petitions for Rulemaking have been received since the last Council meeting. The Council will vote either to deny or grant these Petitions. The Council will give no further consideration to Petitions that are denied. Petitions that are granted may proceed through the Rulemaking process. The Council may send any Petition to the appropriate committee. The hearing will take place during or after the December 2012 meeting.

Item B – 1 Request by Richard D. Sykes, with Ram Jack Foundation Repair, to amend the 2012 NC Building Code.

Add definition for Helical Pile in Chapter 2 DEFINITIONS and add new Section **R404.6 Helical Piles** to the 2012 NC Residential Code.

1. Chapter 2 DEFINITIONS

   ADD NEW DEFINITION:

   Helical Pile. Manufactured steel deep foundation element consisting of a central shaft and one or more helical bearing plates. A helical pile is installed by rotating it into the ground. Each helical bearing plate is formed into a screw thread with a uniform defined pitch.

2. Chapter 4 SOILS AND FOUNDATIONS:

   ADD NEW SECTION:

   R404.6 HELICAL PILES

   R404.6.1 General. Helical piles shall be analyzed, designed, detailed and installed in accordance with Sections R404.6.1 through R404.6.8

   R404.6.2 Geotechnical investigation. Helical piles shall be designed and installed on the basis of a geotenical investigation as set forth in Section R401.4.1

   Exception: For the residential repair of porches, stoops and slab on grade, helical test probes may be used to substitute test borings provided the following:

1. The manufacturer shall have an ICC-ES Evaluation Service Report (ESR) issued in accordance with ICC-ES AC358 that includes a correlation between final installation torque and ultimate capacity as stated in ICC-ES AC358 section 3.13.2, and
2. The shaft diameter, number of helices and diameter of helices shall be the same as the production helical piles.

404.6.3 Analysis; The analysis of helical piles for design shall be in accordance with Sections R404.6..3.1 through R404.6.3.3

R404.6.3.1 Lateral support. Any soil other than fluid soil shall be deemed to afford sufficient lateral support to prevent buckling of deep foundation elements in accordance with accepted engineering practice and the applicable provisions of this code. Where helical piles stand unbraced in air, water or fluid soils, it shall be permitted to consider them laterally supported at a point 5 feet (1524mm) into stiff soil or 10 feet (3048mm) into soft soil unless otherwise *approved* by the *building official* on the basis of geotechnical investigation by a *registered design professional.*

R404.6.3.2 Stability. Helical piles shall be braced to provide lateral stability in all directions. Three or more elements connected to a rigid cap shall be considered braced, provided that the elements are located in radial directions from the centroid of the group not less than 60 degrees (1 rad) apart. A two-element group in a rigid cap shall be considered to be braced along the axis connecting the two elements. Methods used to brace helical piles shall be subject to the approval of the building official. Helical piles supporting walls shall be placed alternately in lines spaced at least 1 foot (305 mm) apart located symmetrically under the center of gravity of the wall load carried, unless effective measures are taken to provide for eccentricity and lateral forces, or the foundation elements are adequately braced to provide for lateral stability.

Exceptions:

1. A single row of helical piles without lateral bracing is permitted for one- and two-family dwellings and lightweight construction not exceeding two stories above grade plane or 35 feet (10 668 mm) in building height, provided the centers of the elements are located within the width of the supported wall.

R404.6.3.3 Group Effects. The analysis shall include group effects on lateral behavior where the center-to-center spacing of helical piles in the direction of lateral force is less than eight times the least horizontal dimension of the element. The analysis shall include group effects on axial behavior where the center-to-center spacing of the helical piles is less than three times the least horizontal dimension of an element.

R404.6.4 Design and detailing. Helical piles shall be designed and manufactured in accordance with accepted engineering practice to resist all stresses induced by installation into the ground and service loads.

R404.6.4.1 Acceptable helical pile foundation systems shall have an ICC-ES Evaluation Service Report (ESR) issued in accordance with ICC-ES AC358

R404.6.4.2 Allowable stresses. The allowable stresses for materials used in helical piles shall not exceed those specified in Table 4R404.6.4

TABLE R404.6.4.2
ALLOWABLE STRESSES FOR MATERIALS USED FOR HELICAL PILES

	MATERIAL TYPE AND CONDITION	MAXIMUM ALLOWABLE STRESS[a]
1	Structural steel in compression Helical piles	$0.6\,F_y \leq 0.5\,F_u$
2	Structural steel in tension Helical piles	$0.6\,F_y \leq 0.5\,F_u$

a. F_y is the specified minimum yield stress of structural steel; F_u is the specified minimum tensile stress of structural steel.

R404.6.5 Determination of allowable loads. The allowable axial load and lateral loads on a helical pile shall be determined by an *approved* formula, load tests or method of analysis.

R404.6.5.1 Allowable axial load. *The allowable axial design load, Pa, of helical piles shall be determined as follows:*

$P_a = 0.5\,P_u$ ***(EQUATION 18-4)***

where P_u is the least value of:

1. Sum of the areas of the helical bearing plates times the ultimate bearing capacity of the soil or rock comprising the bearing stratum.
2. Ultimate capacity determined from well-documented correlations with installation torque.
3. Ultimate capacity determined from load tests.
4. Ultimate axial capacity of pile shaft.
5. Ultimate capacity of pile shaft couplings.
6. Sum of the ultimate axial capacity of helical bearing plates affixed to pile.

R404.6.5.2 Allowable lateral load. Where required by the design, the lateral load capacity of a single helical pile or a group thereof shall be determined by an approved method of analysis or by lateral load tests to at least twice the proposed design working load. The resulting allowable load shall not be more than one-half of the load that produces a gross lateral movement of 1 inch (25 mm) at the lower of the top of the foundation element and the ground surface, unless it can be shown that the predicted lateral movement shall cause neither harmful distortion of, nor instability in, the structure, nor cause any element to be loaded beyond its capacity.

R404.6.6 Dimensions of helical piles. Dimensions of the central shaft and the number, size and thickness of the helical bearing plates shall be sufficient to support the design loads.

R404.6.7 Pile Caps. Pile caps shall be of reinforced concrete, and shall include all elements to which vertical helical piles are connected, including grade beams and mats. The soil immediately below the pile cap shall not be considered as carrying any vertical load. The tops of the vertical helical piles shall be embedded not less than 3 inches (76 mm) into pile caps and the caps shall extend at least 4 inches (102 mm) beyond the edges of the elements. The tops of the elements shall be cut or chipped back to sound material before capping.

R404.6.8 Installation. Helical piles shall be installed to the specified embedment depth and torsional resistance criteria as determined by a registered design professional. The torque applied during installation shall not exceed the maximum allowable installation torque of the helical pile.

Motion – David Smith/Second – Lon McSwain/Granted. The request was granted unanimously.

Item B – 2 Request by Daniel J. Walker, PE, with the Metal Building Manufacturers Association, to amend the 2012 NC Energy Code, Tables 502.1.2, 502.2(1), and 502.2(2), and Appendix 2.2. The proposed amendment is as follows:

TABLE 502.1.2
BUILDING ENVELOPE REQUIREMENTS OPAQUE ELEMENT, MAXIMUM *U*-FACTORS

CLIMATE ZONE	3		4		5	
	All Other	Group R	All Other	Group R	All Other	Group R
Roofs						
Metal Buildings ~~(with R-5 thermal blocks[a])~~	U-0.041	U-0.041	U-0.035	U-0.035	U-0.035	U-0.035

(Portions of table not shown remain unchanged.)

TABLE 502.2(1)
BUILDING ENVELOPE REQUIREMENTS – OPAQUE ASSEMBLIES

CLIMATE ZONE	3		4		5	
	All Other	Group R	All Other	Group R	All Other	Group R
Roofs						
Metal Buildings ~~(with R-5 thermal blocks)~~[a, b]	R-10 + R-19 FC	R-10 + R-19 FC	R-19 + R-11 Ls	R-19 + R-11 Ls	R-19 + R-11 Ls	R-19 + R-11 Ls

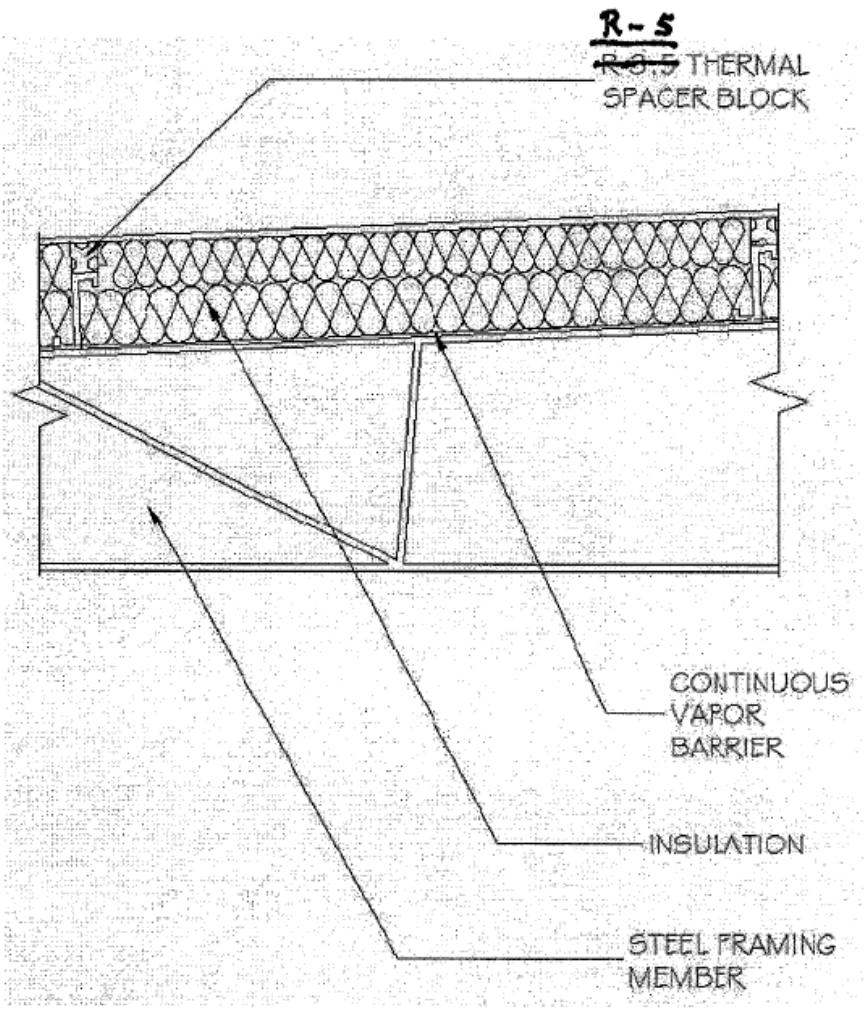
(Portions of table not shown remain unchanged.)

TABLE 502.2(2)
BUILDING ENVELOPE REQUIREMENTS – OPAQUE ASSEMBLIES

ROOFS	DESCRIPTION
R-~~11~~10 + R-19 FC	Filled cavity fiberglass insulation. A continuous vapor barrier is installed below the purlins and uninterrupted by framing members. Both layers of uncompressed, unfaced fiberglass insulation rest on top of the vapor barrier and are installed parallel, between the purlins. A minimum R-~~3.~~5 thermal spacer block is placed above the purlin/batt, and the roof deck is secured to the purlins. Drawings of typical details are shown in Appendix 2.2.

(Portions of table not shown remain unchanged.)

Revise Appendix 2.2 as follows:



SECTION VIEW OF METAL FRAME ROOF: FILLED CAVITY FIBERGLASS INSULATION

Motion/Second/Granted. The request was granted unanimously.

Item B – 3 Request by the NC Energy Efficiency Alliance, Appalachian State Department of Technology, to amend the 2012 NC Energy Conservation Code and the 2012 NC Residential Code. The proposed amendment is as follows:

The proposed amendment is posted at the following link:

http://www.ncdoi.com/OSFM/Engineering_and_Codes/Documents/BCC_Minutes/2012%2009%2010~September%2010,%202012%20(Item%20B-3,%20NCECC%20Chapter%204,%20NCRC%20Chapter%2011,%20Duct%20Leakage_.pdf

Motion – David Smith/Second – Lon McSwain/Granted. The request was granted unanimously.

Item B – 4 Request by Robert Privott, NC Home Builders Association, to amend the 2012 NC Residential Code, Table R302.1. The proposed amendment is as follows:

Table R302.1 – Exterior Walls

EXTERIOR WALL ELEMENT		MINIMUM FIRE-RESISTANCE RATING	MINIMUM FIRE SEPARATION DISTANCE
Walls	(Fire-resistance rated)	1 hour-tested in accordance with ASTM E 119 or UL 263 with exposure to both sides	≤3 ~~5~~ Feet
	(Not fire-resistance rated)	0-Hours	≥3 ~~5~~ Feet
Projections	(Fire-resistance rated)	1-Hour on the underside	≤3 ~~4~~ Feet
	(Not fire-resistance rated)	0-Hours	≥3 ~~5~~ Feet
Openings	Not Allowed	N/A	< 3 Feet
	~~25% Maximum of Wall Area~~	~~0-Hours~~	~~3 Feet~~
	Unlimited	0-Hours	3 ~~5~~ Feet
Penetrations	All	Comply with Section R317.3	≤3 ~~< 5~~ Feet
		None Required	≥3 ~~5~~ Feet

For SI: 1 foot=304.8 mm.
N/A = Not Applicable

Motion – Mack Nixon/Second – David Smith/Granted. The request was granted unanimously and was sent to the Residential/Energy Committees for review.

Item B – 5 Request by Robert Privott, NC Home Builders Association, to amend the 2012 NC Residential Code, Section R408.2. The proposed amendment is as follows:

R408.2 Ground vapor retarder. When required by Section R408.1.1 Exception, a ~~A~~ minimum 6-mil (0 15 mm) polyethylene vapor retarder or equivalent shall be installed to nominally cover all exposed earth in the crawl space with joints lapped not less than 12 inches (305 mm). Where there is no evidence that the ground water table can rise to within 6 inches (152 mm) of the floor of the crawl space it is acceptable to puncture the ground vapor retarder at low spots to prevent water puddles from forming on top of the vapor retarder due to condensation. The floor of the crawl space shall be graded so that it drains to one or more low spots. Install a drain to daylight or sump pump at each low spot. Crawl space drains shall be kept separate from roof gutter drain systems and foundation perimeter drains.

Motion /Second/Granted. The request was granted unanimously and was sent to the Residential/Energy Committees for review.

Item B – 6 Request by Brycer, LLC, to amend Chapter 9 of the Fire Protection Systems Code, Section 901.6.2. The proposed amendment is as follows:

901.6.2 Records. Records of all systems inspections, tests and maintenance required by the referenced standards shall be maintained on the premises for a minimum of three years and ~~shall be copied to the fire code official upon request~~ shall be made available by an approved method upon request by the fire code official.

Motion – Lon McSwain/Second – David Smith/Denied. The request was denied unanimously.

Electronic/paperless record submittal can currently be accepted as an alternate by the Code Official without this amendment.

Part C – Notice of Rulemaking Proceedings and Public Hearing

The following Petitions for Rulemaking have been granted by the Council. Notice of Rulemaking proceedings has been made. The Public Hearing was held September 10, 2012 and the Final Adoption meeting may take place on or after December 10, 2012. The written public comment period expires on October 1, 2012.

Item C – 1 Request by Myron Cashwell, Sampson County, to amend the 2012 NC Building Code, Section 903.2.8. The proposed amendment is as follows:

Add Exception to 903.2.8 of the North Carolina Building Code, Volume I

Any Group R Fire area meeting all of the following conditions:

1. Less than 1200 square feet area
2. Single story at grade construction
3. Two remote exits
4. Minimum III B Construction

Wayne Hamilton, with the City of Asheville, opposed the code change. This proposal needs clarification that it applies to specific uses, such as migrant housing, and is not appropriate for licensed facilities.

Item C – 2 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Mechanical Code, Section 605.5. The proposed amendment is as follows:

Add 605.5 International Plumbing Code Reference in Chapter 15 of IMC

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.

[Staff Note: Items C – 2 through C – 7 will also be reproduced in the Residential Code.]

Item C – 3 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Mechanical Code, Section 1202.5. The proposed amendment is as follows:

Table 1202.5 Hydronic Pipe Fittings

Material	Standard
Copper & Copper Alloy	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29; ASME B16.51

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.
[Staff Note: The new standard will be added to the Referenced Standards Chapter.]

Item C – 4 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Mechanical Code, Section 1203.8. The proposed amendment is as follows:

1203.8 Copper and copper alloy tubing. Joints between copper or copper-alloy tubing or fittings shall be brazed, mechanical, press connect or soldered joints conforming to Section 1203.3 or flared joints conforming to Section 1203

[Note: Above language differs slightly from Code language]

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.

Item C – 5 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Mechanical Code, Section 1203.3.9. The proposed amendment is as follows:

1203.3.9 Press connect joints. Press connect joints shall be installed in accordance with the manufacturers instruction. Press-connect joints shall conform to one of the standards listed in Table 1202.2.

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.

Item C – 6 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Plumbing Code, Section 605.5. The proposed amendment is as follows:

Table 605.5 Pipe Fittings

Materials	Standards
Copper and Copper Alloys	ASME B16.15; ASME B16.18; ASME B16.22; ASME B16.23; ASME B16.26; ASME B16.29; ASME B16.51

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.

Item C – 7 Request by Robert Hall, Loganville, Georgia, to amend the 2012 NC Plumbing Code, Section 605.15. The proposed amendment is as follows:

605.15 Copper Tubing

605.15.5 Press Connect Joints. Press connect joints shall be installed in accordance with the manufacturer's instructions. Press-connect joints shall conform to one of the standards listed in Table 605.

Robert Hall, Loganville, Georgia, recommends the Council adopt this code change.

Item C – 8 Request by Scott McKinnon, with Comfort Solutions Incorporated, to amend the 2012 NC Energy Conservation Code, Section 403.1.2. The proposed amendment is as follows:

403.1.2 Heat pump supplementary heat (Mandatory Requirements). 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. In lieu of a heat strip outdoor temperature lockout, the following time and temperature electric-resistance control may be used. After six minutes of compressor run time in heat mode, supplemental electric heat shall energize only if the leaving air temperature from the indoor coil is below 90°F. If the indoor coil leaving air temperature exceeds 100°F, supplemental heat will automatically de-energize, but allow the compressor to continue to operate until the call is satisfied. No thermostat shall initiate supplemental electric heat at any time. Thermostat controlled emergency heat shall not be limited by outdoor temperature. Electric-resistance supplemental heat during defrost shall operate normally without limitation.

Per direction from NCBCC at September meeting, this item is reformatted as an exception:

403.1.2 Heat pump supplementary heat(Mandatory Requirements). 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.

A heat strip outdoor temperature lockout shall be provided to prevent supplemental heat operation in response to the thermostat being changed to a warmer setting. The lockout shall be set no lower than 35 degrees F and no higher than 40 degrees F.

Exception: In lieu of a heat strip outdoor temperature lockout, the following time and temperature electric-resistance control may be used. After six minutes of compressor run time in heat mode, supplemental electric heat shall energize only if the leaving air temperature from the indoor coil is below 90 degrees F. If the indoor coil leaving air temperature exceeds 100 degrees F, supplemental heat ~~will~~ shall automatically de-energize, but allow the compressor to continue to operate until the call is satisfied. No thermostat shall initiate supplemental electric heat at any time. Thermostat controlled emergency heat shall not be limited by outdoor temperature. Electric resistance supplemental heat during defrost shall operate normally without limitation.

Also, a companion change is necessary to provide consistency in correlation with the 2012 NC Residential Code, Chapter 11, section N1103.1.2. This section is added as requested by the NCBCC to provide proper correlation with the 2012 NCECC section 403.1.2 and is as follows:

N1103.1.2 Heat pump supplementary heat(Mandatory Requirements). 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.

A heat strip outdoor temperature lockout shall be provided to prevent supplemental heat operation in response to the thermostat being changed to a warmer setting. The lockout shall be set no lower than 35 degrees F and no higher than 40 degrees F.

Exception: In lieu of a heat strip outdoor temperature lockout, the following time and temperature electric-resistance control may be used. After six minutes of compressor run time in heat mode, supplemental electric heat shall energize only if the leaving air temperature from the indoor coil is below 90 degrees F. If the indoor coil leaving air temperature exceeds 100 degrees F, supplemental heat ~~will~~ shall automatically de-energize, but allow the compressor to continue to operate until the call is satisfied. No thermostat shall initiate supplemental electric heat at any time. Thermostat controlled emergency heat shall not be limited by outdoor temperature. Electric resistance supplemental heat during defrost shall operate normally without limitation.

Scott McKinnon, with Comfort Solutions, recommends the Council adopt this code change.

Item C – 9 Request by Joe Mattingly, Air-Conditioning, Heating, and Refrigeration Institute, to amend the 2012 NC Energy Conservation Code, 501.1 Scope. The proposed amendment is as follows:

501.1 Scope. The requirements contained in this chapter are applicable to commercial buildings, or portions of commercial buildings. These commercial buildings shall either:

1. Meet the requirements contained in this chapter, or

2. ~~Comply with the mandatory provisions of 2007 ASHRAE/IESNA Standard 90.1, *Energy Standard for Buildings Except for Low Rise Residential Buildings* and exceed the minimum level of energy efficiency it prescribes by 20% following the procedure in ASHRAE/IESNA Standard 90.1, Appendix G.~~ Meet the requirements of ASHRAE/IESNA Standard 90.1-2010.

Joe Mattingly, with the Air-Conditioning, Heating, and Refrigeration Institute, recommends the Council adopt this code change.

Dan Walker, with the Metal Building Manufacturers Association, recommends the Council adopt this code change.

Billy Hinton, NCDOI, commented that the Committee would likely have recommended adoption of the 2010 Edition, but it was not available at the time of review.

[Staff Note: Brandon Truman advised the Council to collaborate with all parties involved with the original package through the Governor's Office.]

Item C-10 Request by Alan Meeks, with The Marwin Company, Inc., to amend the 2012 NC Residential Code, Section R302.5.1. The proposed amendment is as follows:

R302.5.1 Opening protection. Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1⅜ inches (35 mm) in thickness, solid or honeycomb core steel doors not less than 1⅜ inches (35 mm) thick, or 20-minute fire-rated doors.

Exception: A disappearing/pull-down stairway to uninhabited attic space with minimum⅜ -inch (9.53 mm) (nominal) fire retardant-treated structural panel is deemed to meet Table R302.6 Dwelling/Garage Separation of not less than ½-inch (12.7 mm) gypsum board or equivalent applied to garage side.

Andy Davis, with The Marwin Company, recommends the Council adopt this code change.

Item C-11 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R313.1. The proposed amendment is as follows:

R313.1 Townhouse automatic fire sprinkler systems. An automatic residential fire sprinkler system shall be installed in *townhouses*.

Exceptions:

1. Townhouses constructed with a common 2-hour fire-resistance-rated wall assembly or separated from each other by wall or floor assemblies having not less than a 1-hour fire resistance rating tested in accordance with ASTM E 119 or UL 263 provided such walls do not contain plumbing or mechanical equipment, ducts or vents in the cavity of the common wall. The wall(s) shall be rated for fire exposure from both sides and shall extend to and be tight against exterior walls and the underside of the roof sheathing. Electrical installations in the separation walls shall be installed in accordance with the NC Electrical Code ~~Chapters 34 through 43~~. Penetrations for electrical outlet boxes shall be in accordance with Section R302.4.

2. An automatic residential fire sprinkler system shall not be required when additions or alterations are made to existing townhouses that do not have an automatic residential fire sprinkler system installed.

Wayne Hamilton, with the City of Asheville, opposes this code change.

Barry Gupton, NCDOI commented that a modification is needed to clarify that either one 2-hour fire-resistance-rated wall or two 1-hour fire-resistance-rated walls are required. This exception only applies to wall assemblies and the reference to floor assemblies needs to be deleted.

Item C-12 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Sections R322.2.1 and R322.3.2. The proposed amendment is as follows:

2012 NC Residential Code – Proposed Revisions to R322 Regarding Flood Elevation Design Requirements

R322.2.1 Elevation requirements.

1. Buildings and structures shall have the lowest floors elevated to or above the base flood elevation ~~plus one foot (305 mm),~~ or the design flood elevation, whichever is higher.
2. In areas of shallow flooding (AO Zones), buildings and structures shall have the lowest floor (including basement) elevated at least as high above the highest adjacent grade as the depth number specified in feet (mm) on the FIRM ~~plus one foot (305 mm),~~ or at least 3 feet (915 mm) if a depth number is not specified.
3. Basement floors that are below grade on all sides shall be elevated to or above the base flood elevation ~~plus one foot (305 mm),~~ or the design flood elevation, whichever is higher.

   Exception: Enclosed areas below the design flood elevation, including basements whose floors are not below grade on all sides, shall meet the requirements of Section R322.2.2.

R322.3.2 Elevation requirements.

1. All buildings and structures erected within coastal high hazard areas shall be elevated so that the lowest portion of all structural members supporting the lowest floor, with the exception of mat or raft foundations, piling, pile caps, columns, grade beams and bracing, is:
   1.1. Located at or above the design flood elevation, if the lowest horizontal structural member is oriented parallel to the direction of wave approach, where parallel shall mean less than or equal to 20 degrees (0.35 rad) from the direction of approach, or
   1.2. Located at the base flood elevation ~~plus 1 foot (305 mm),~~ or the design flood elevation, whichever is higher, if the lowest horizontal structural member is oriented perpendicular to the direction of wave approach, where perpendicular shall mean greater than 20 degrees (0.35 rad) from the direction of approach.
2. Basement floors that are below grade on all sides are prohibited.
3. The use of fill for structural support is prohibited
4. Minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around buildings and for support of parking slabs, pool decks, patios and walkways.

   Exception: Walls and partitions enclosing areas below the design flood elevation shall meet the requirements of Sections R322.3.4 and R322.3.5.

Duke Garrity, with the Outer Banks Home Builders Association, recommends the Council adopt this code change.

Spencer Rogers, with North Carolina Sea Grant, opposes this code change.

Robert Privott, with the North Carolina Home Builders Association, recommends the Council adopt this code change.

John Gerber, with North Carolina Emergency Management, opposes this code change.

Item C-13 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Table R403.1. The proposed amendment is as follows:

2012 NC Residential Code (NCRC) – Proposed Revisions to Table R403.1 Regarding Minimum Allowable Footing Widths

TABLE R403.1
MINIMUM WIDTH OF CONCRETE OR MASONRY FOOTINGS (inches)*

	LOAD-BEARING VALUE OF SOIL (psf)			
	1,500	2,000	3,000	4,000
Conventional light-frame construction				
1-story	12 ~~16~~[b]	12 ~~16~~[b]	12	12
2-story	15 ~~16~~[b]	12 ~~16~~[b]	12	12
3-story	23	17	12	12
4-inch brick veneer over light frame or 8-inch hollow concrete masonry				
1-story	12 ~~16~~[b]	12 ~~16~~[b]	12	12
2-story	21	16	12	12
3-story	32	24	16	12
8-inch solid or fully grouted masonry				
1-story	16	12 ~~16~~[b]	12	12
2-story	29	21	14	12
3-story	42	32	21	16

For SI: 1-inch = 25.4 mm, 1 pound per square foot = 0.0479 kPa.

a. Where minimum footing width is 12 inches, use of a single wythe of solid or fully grouted 12-inch nominal concrete masonry units is permitted.

~~b. A minimum footing width of 12" is acceptable for monolithic slab foundations.~~

Barry Gupton, NCDOI, commented that the strikethroughs/underlines do not match the 2012 NC Residential Code. This item will be discussed further at the December meeting.

Item C-14 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R403.1.4. The proposed amendment is as follows:

R403.1.4 Minimum depth. All exterior footings and foundation systems shall extend below the frost line specified in Table R301.2(1). In no case shall the bottom of the exterior footings be less than 12 inches below the ~~undisturbed ground surface or engineered fill~~ finished grade.

Exception: Frost protected footings constructed in accordance with Section R403.3 and footings and foundations erected on solid rock shall not be required to extend below the frost line.

There were no comments on this item.

Item C-15 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Table R502.3.3(2) Footnotes. The proposed amendment is as follows:

Table R502.3.3(2) Footnotes:

a. Spans are based on No. 2 Grade lumber of Douglas fir-larch, hem-fir, southern pine, and spruce-pine-fir for repetitive (3 or more) members.
b. Ratio of backspan to cantilever span shall be at least 2:1.
c. Connections capable of resisting the indicated uplift force shall be provided at the backspan support.
d. Uplift force is for a backspan to cantilever span ratio of 2:1. Tabulated uplift values are permitted to be reduced by multiplying by a factor equal to 2 divided by the actual backspan ration provided (2/backspan ratio).
e. A full-depth rim joist shall be provided at the ~~unsupported end of the cantilever joists~~ cantilever end of the joists. Solid blocking shall be provided at the ~~supported end~~ cantilever support.
f. Linear interpolation shall be permitted for ground snow loads other than shown.

There were no comments on this item.

Item C-16 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R506.2.3. The proposed amendment is as follows:

R506.2.3 Vapor retarder. A 6 mil (0.006 inch; 152 μm) polyethylene or *approved* vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

Exception: The vapor retarder may be omitted:

1. From detached garages, utility buildings and other unheated *accessory structures*.
2. For unheated storage rooms having an area of less than 70 square feet (6.5 m2) and carports.
3. From driveways, walks, patios and other exterior flatwork ~~not likely to be enclosed and heated at a later date~~.
4. Where *approved* by the *building official*, based on local site conditions.
5. From attached garages where floor space at parking level is unheated.

There were no comments on this item.

Item C-17 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Table R602.10.4.2 Footnotes. The proposed amendment is as follows:

Table R602.10.4.2 Footnotes:

a. Interpolation shall be permitted.
~~b. Braced wall panels using wood structural panel (WSP) sheathing on both sides may be used to reduce the panel lengths shown by 50 percent.~~

There were no comments on this item.

Item C-18 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R703.7.6. The proposed amendment is as follows:

R703.7.6 Weepholes. Weepholes shall be provided in the outside wythe of masonry walls at a maximum spacing of ~~33~~ 48 inches (~~838~~ 1219 mm) on center. Weepholes shall not be less than 3/16 inches (5 mm) in diameter. Weepholes shall be located immediately above the flashing.

There were no comments on this item.

Item C-19 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R905.2.6. The proposed amendment is as follows:

R905.2.6 Attachment. Asphalt shingles shall have the minimum number of fasteners required by the manufacturer, but not less than four fasteners per strip shingle or two fasteners per individual shingle. Where the roof slope exceeds 21 units vertical in 12 units horizontal (21:12, 175 percent slope), shingles shall be installed as required by the manufacturer.

Exceptions: Asphalt strip shingles shall have a minimum of six fasteners per shingle where the roof is in one of the following categories:

1. The basic wind speed in accordance with Figure R301.2(4) is 110 miles per hour (177 km/hr) or greater and the eave is 20 feet (6096 mm) or higher above grade.
2. The basic wind speed in accordance with Figure R301.2(4) is 120 miles per hour (193 km/hr) or greater.
3. Special mountain regions in accordance with Figure R301.2(4) that meet exceptions 1 or 2 above.

There were no comments on this item.

Part D – Final Adoption

The following Petitions for Rulemaking have been granted by the Council. Notice of Rulemaking proceedings and Public Hearing has been made. The Public Hearings were held June 11, 2012. The Final Adoption meeting took place on September 10, 2012. The Council will give no further consideration to Petitions that are disapproved. Petitions that are approved will proceed through the Rulemaking process.

Item D – 1 Request by Christopher Havanas, with GOJO Industries, Inc., to amend the 2012 NC Fire Code, Section 3405.5, number 5. The proposed amendment is as follows:

Section 3405.5 Alcohol-based hand rubs classified as Class I or II liquids. The use of wall-mounted dispensers containing alcohol-based hand rubs classified as Class I or II liquids shall be in accordance with all of the following:

5. Dispensers shall not release their contents except when the dispenser is manually activated.

Exception: Facilities shall be permitted to install and use automatically activated "touch free" alcohol-based hand rub dispensing devices with the following requirements:

1. The facility or persons responsible for the dispensers shall test the dispensers each time a new refill is installed in accordance with the manufacturer's care and use instructions.

2. Dispensers shall be designed and must operate in a manner that ensures accidental or malicious activations of the dispensing device are minimized. At a minimum, all devices subject to or used in accordance with this section shall have the following safety features:

   2.1 Any activations of the dispenser shall occur when an object is placed within 4 inches of the sensing device.
   2.2 The dispenser shall not dispense more than the amount required for hand hygiene consistent with the label instructions as regulated by the United States Food and Drug Administration (US FDA).
   2.3 An object placed within the activation zone and left in place will cause only one activation.

Motion – Alan Perdue/Second – Lon McSwain/Approved

Item D – 2 Request by Lon McSwain, NC Building Code Council, to amend the 2012 NC Building Code, Section 1005.1. The proposed amendment is as follows:

1005.1 Minimum required egress width. The *means of egress* width shall not be less than required by this section. The total width of *means of egress* in inches (mm) shall not be less than the total *occupant load* served by the *means of egress* multiplied by 0.3 inch (7.62 mm) per occupant for stairways and by 0.2 inch (5.08 mm) per occupant for other egress components. The width shall not be less than specified elsewhere in this code. Multiple *means of egress* shall be sized such that the loss of any one *means of egress* shall not reduce the available capacity to less than 50 percent of the required capacity. The maximum capacity required from any *story* of a building shall be maintained to the termination of the *means of egress*.

~~Exception: *Means of egress* complying with Section 1028.~~

Exceptions:

1. *Means of egress* complying with Section 1028.

2. For other than Group H and I-2 occupancies, the capacity, in inches (mm), of *means of egress stairways* shall be calculated by multiplying the *occupant load* served by the *stairway* by a *means of egress* capacity factor of 0.2 inch (5.1 mm) per occupant in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communications system* in accordance with Section 907.5.2.2.

3. For other than Group H and I-2 occupancies, the capacity, in inches (mm), of *means of egress* components other than *stairways* shall be calculated by multiplying the *occupant load* served by such components

by a *means of egress* capacity factor of 0.15 inch (5.1 mm) per occupant in buildings equipped throughout with an *automatic sprinkler system* installed in accordance with Section 903.3.1.1 or 903.3.1.2 and an *emergency voice/alarm communications system* in accordance with Section 907.5.2.2.

Motion – Lon McSwain/Second – Alan Perdue/Approved

[Note: This also needs to be replicated in the Fire Code]

Item D – 3 Request by Ralph Euchner, NC Building Code Council, to amend the 2012 NC Fuel Gas Code, Section 310.1.1. The proposed amendment is as follows:

310.1.1 CSST. Corrugated stainless steel tubing (CSST) gas *piping* systems shall be bonded to the electrical service grounding electrode system ~~at the point where the gas service enters the building~~. The bonding jumper shall be not smaller than 6 AWG copper wire or equivalent.

Motion/Second/Approved

Item D – 4 Request by David Smith, NC Building Code Council, to amend the 2012 NC Residential Code, Section R602.10. The proposed amendment is as follows:

Replace the 2012 NC Residential Code Sections R602.10 through R602.12 with the attached "Revised Wall Bracing Provisions of the 2012 North Carolina Residential Code".

R602.10-Wall Bracing Document is posted at the following link:

http://www.ncdoi.com/OSFM/Engineering/BCC/engineering_bcc_minutes.asp

Motion to postpone this Item until December – David Smith/Second – Lon McSwain/Granted

TEMPORARY RULES

The Public Hearing on these items was held on August 28, 2012.
(These items were published in the Agenda as Temporary Rules Items C – 1 and C – 2)

Item D – 5 Request by David Smith, NC BCC, to amend the 2012 NC Residential Code, Section R602.10. The proposed amendment is as follows:

R602.10 Wall bracing. Buildings shall be braced in accordance with this section. Where a building, or portion thereof, does not comply with one or more of the bracing requirements in this section, those portions shall be designed and constructed in accordance with Section R301.1.

Exceptions:

1. Detached one- and two-family *dwellings* located in Seismic Design Category C are exempt from the seismic bracing requirements of this section. Wind speed provisions for bracing shall be applicable to detached one- and two-family *dwellings*.
2. As an alternative to the wall bracing requirements of the 2012 NC Residential Code (NCRC), Section R602.10, compliance with the 2009 NCRC wall bracing requirements is acceptable. The alternate shall require compliance with the 2009 NCRC, Sections R602.10 through R602.11.3 including other referenced sections as applicable and as follows:
    a. 2009 NCRC, Section R301.2.2.2.1
    b. 2009 NCRC, Figure R403.1(1)
    c. 2009 NCRC, Section R403.1.6
    d. 2009 NCRC, Table R602.3(1)
    e. 2009 NCRC, Table R602.3(3)
    f. 2009 NCRC, Table R602.3(4)
    g. 2009 NCRC, Table R702.3.5
    h. 2009 NCRC, Table R703.4
    i. 2009 NCRC, Section 703.6

Substitute Language - 2. In lieu of the wall bracing requirements of Section 602.10, all stories shall be sheathed with wood structural sheathing panels. Blocking shall be installed if less than 50 percent of the wall length is sheathed. Where blocking is required, all panels shall be fastened at 3 inches (76 mm) on center along the edges and 6 inches (152 mm) on center at intermediate framing. If a wall is sheathed less than 25 percent of its length, then that wall shall be designed in accordance with approved engineering practice.

Further Modification:

2. In lieu of the wall bracing requirements of Section 602.10, all stories shall be sheathed with wood structural sheathing panels. Blocking shall be installed if less than 50 percent of the wall length is sheathed. Where blocking is required, all panels shall be fastened at 3 inches (76 mm) on center along the edges and 6 inches (152 mm) on center at intermediate framing. If a wall is sheathed less than 25 percent of its length, then that wall shall be designed in accordance with accepted engineering practice. Portal openings designed and constructed in accordance with any of the following shall be acceptable:

a. Method CS-PF in accordance with Section R602.10.4.1.1, Figure R602.10.4.1.1 and the minimum panel widths in Table R602.10.4.2.
b. Method CS-G in accordance with Table R602.10.4.1 using the nailing pattern above and the minimum panel widths in Table R602.10.4.2.
c. Accepted Engineering Practice.

Motion – David Smith/Second – Lon McSwain/Adopted as further modified. The effective date of this Temporary Rule is October 1, 2012.

Item D – 6 Request by David Smith, NC BCC, to amend the 2012 NC Mechanical Code, Table 603.4. The proposed amendment is as follows:

TABLE 603.4
DUCT CONSTRUCTION MINIMUM SHEET METAL THICKNESS FOR SINGLE DWELLING UNITS

DUCT SIZE	GALVANIZED		Appropriate Aluminum B & S Gauge ~~ALUMINUM MINIMUM THICKNESS (in.)~~
	Minimum thickness (in.)	Equivalent galvanized gauge ~~gage~~ no.	
Round ducts and Enclosed rectangular ducts			
14 inches or less	0.013 ~~0.0157~~	30 ~~28~~	26 ~~0.0175~~
Over 14" ~~16 and 18 inches~~	0.016 ~~0.0187~~	28 ~~26~~	24 ~~0.018~~
~~20 inches and over~~	~~0.0236~~	~~24~~	~~0.023~~
Exposed rectangular ducts			
14 inches or less	0.016 ~~0.0157~~	28	24 ~~0.0175~~
Over 14 inches[a]	0.019 ~~0.0187~~	26	22 ~~0.018~~

For SI: 1 inch = 25.4 mm~~, 1 inch water gage = 249 Pa.~~

a. ~~For duct gages and reinforcement requirements at static pressure of ½ inch, 1 inch and 2 inch w.g., SMACNA *HVAC Duct Construction Standards*, Tables 2-1, 2-2, and 2-3, shall apply.~~

Motion – David Smith/Second – Lon McSwain/Granted. The effective date of this Temporary Rule is October 1, 2012.

Part E – Reports

Chairman's Report
No Report

Ad Hoc Committee Reports
No Report

Standing Committee Reports
No Report

Staff Reports
-Chris Noles gave an update on the new office space for NCDOI – OSFM, and that it is still in process.

-Chris Noles announced that Laurel Wright, NCDOI Staff member, was appointed to ANSI A117.1 Board.

-Chris Noles discussed the 2012 IFC format.

Public Comments
There were none.

Part F – Appeals

Item F – 2 Amarr Garage Doors – NCDOI

Sincerely,

Christian Noles, P.E.
Secretary, NC Building Code Council