City of Columbia

701 East Broadway, Columbia, Missouri 65201

Department Source: Community Development - BSD
To: City Council
From: City Manager & Staff
Council Meeting Date: April 18, 2016
Re: Adoption of the 2015 International Code Council Family of Codes, with Amendments

Executive Summary

The Building Construction Codes Commission (BCCC) has completed its review of the 2015 International Code Council family of codes and the 2014 National Electrical Code for adoption by the City. While the majority of the code changes in this cycle consist of clarifications and reformatting, there are several major code changes including required storm shelters for educational (K through 12 schools) and critical emergency operations use groups (911 call stations, fire, rescue, ambulance, and police stations), as well as new commercial and residential energy efficiency requirements. The Environment and Energy Commission (EEC) also has provided recommendations on the energy efficiency requirements in the International Residential Code (IRC) and the International Building Code (IBC).

Discussion

The Building Construction Codes Commission is authorized by Chapter 6 of the City Code to "*review the Building and other codes periodically for updating and recommending changes*." After obtaining authorization to review the 2015 codes from the City Council in March 2015, the BCCC and its committees met frequently from May 2015 to January 2016, evaluating the effect of the new codes and recommending local amendments. BCCC members, representatives of the Building and Site Development Division of the Community Development Department, the Fire Department, and the Inspections Division of Boone County Resource Management attended the meetings.

The Environment and Energy Commission (EEC), following its charge in Chapter 2 of the City Code to "*Act in an advisory capacity to the council in all matters pertaining to environmental protection, which could include questions of energy efficiency and conservation, and of changing technology,*" has reviewed the BCCC recommendations. The EEC has provided several recommended amendments to the energy efficiency requirements for single and two family construction and commercial structures, including multiple-family and institutional residential structures. A summary of the EEC recommendations is provided at the end of this discussion and in the attachments.

Below is a list of selected major code changes and other proposed amendments. All amendments appear in bold font/strikethrough in the attached proposed ordinances.

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Significant Code Changes

1. ***Storm shelters.*** The most significant change of this code cycle is the new storm shelter requirement (ICC 500) in the 2015 International Building Code (IBC). Because Central Missouri is in an area where the design wind speed for tornadoes is 250 mph [See attached Figure 304.2(1)] the 2015 IBC section 423 requires storm shelters to be constructed in accordance with ICC 500 for the following use groups;

   423.3 Critical emergency operations. 911 call stations, emergency operations centers and fire, rescue, ambulance and police stations.
   Exception: Buildings meeting the requirements for shelter design in ICC 500.
   423.4 Group E occupancies. All group E occupancies with an occ. load of 50 or more.

   Exceptions:
   1. Group E daycare facilities.
   2. Group E occupancies accessory to places of religious worship.
   3. Buildings meeting the requirements for shelter design in ICC 500.

None of the existing buildings in the City would meet the requirements for shelter design in ICC 500 if they were built today.

The 2015 IBC is not clear how building additions may trigger the requirement for a storm shelter. According to an ICC representative, the authority having jurisdiction would determine the requirement for constructing a storm shelter for an addition on a case by case basis. An administrative policy would likely need to be established to clarify the issue.

There will be many additional structural, engineering, and procedural requirements for shelters designed in compliance with ICC 500. Because of the additional expense related to these requirements, the BCCC members want to make sure all stakeholders are aware of this major code change. The BCCC proposes no amendments to these new provisions.

2. ***Energy efficiency***. As in the last code cycle the BCCC reviewed new energy code requirements and considered both the benefits of the new requirements and the associated expenses. The BCCC recommends adopting the 2015 Energy Code requirements with the following amendments.
   Commercial
   a. The 2015 International Energy Efficiency Code **Section C408** requires **System Commissioning.** All members agreed system commissioning, adjusting, and balancing is advisable. It is the opinion of the committee that the additional required plans and documentation are both cumbersome, time consuming, and expensive. Consensus was that system balancing, performance, and control can be achieved without these additional burdens and suggest the following amendments.

C408.2 Mechanical systems and service hot water heating systems commissioning and completion requirements. Amend as follows;
Prior to the final mechanical and plumbing inspections, the registered design professional or approved agency ~~shall~~ **should** provide evidence of mechanical system commissioning and completion in accordance with the provisions of this section.

C408.3.1 Functional testing. Amend as follows.
Prior to passing final inspection, the registered design professional ~~shall~~ **should** provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturer's instructions.

b. As in the last code cycle the BCCC voted to keep the amendment to IBC 1301.1.2 for R-2, R-3, and R-4 use groups (attached). This amendment prescribes insulation values, thermal envelope sealing, and thermal transmittance values for windows.

Residential One and Two Family

a. **N1101.3 Scope.** Add the attached figure labeled 2015 Residential Energy Code Requirements and make it a prescriptive means of code compliance. The committee believes building to this diagram both meets the intent of the code and simplifies the requirements for builders and inspection staff. Consensus was that simplification would translate to more consistent compliance, energy efficiency and affordability.
b. **N1102.2.9 Basement walls. Amend first sentence as follows;** Walls associated with ~~conditioned~~ **finished** basements shall be insulated from the top of the basement wall down…
   This is applicable only to the foundation wall portions of unfinished basements. To insulate these walls before it is determined what the use will be and where plumbing, mechanical, and electrical components will be located leads to excess cost and duplication of work. This amendment is in line with the goal of affordability.
c. **N1102.4.1.2 Testing. Amend as follows (Amended portion in bold font);** The building or dwelling unit shall be blower door tested **as deemed necessary by the building official** and verified as having an air leakage rate…Because dwellings never fail the blower door test when constructed per the prescriptive code requirements the blower door test is unnecessary. When, through un-craftsman-like work, compliance with prescriptive code requirements is questionable, the blower door test may be

required. Because blower door testing is several hundred dollars this amendment is in line with the goal of affordability.

d. **N1102.4.4 Rooms containing fuel burning appliances. Delete.** This section requires rooms "where open combustion air ducts provide combustion air to open combustion fuel-burning appliances" (Typically 80% efficiency gas furnaces and water heaters) to be isolated from the building thermal envelope by means of insulation and fully gasketed doors. The committee believes this requirement, in conjunction with the requirement to bring combustion air into the room, may cause unintended negative consequences such as **freezing** of water pipes or builders using less efficient electric equipment. The committee also believes isolating this room from the thermal envelope entails unnecessary expense.

e. **Appendix U (Appendix RB in the International Energy Conservation Code) Solar Ready Provisions.** This appendix is not mandatory unless adopted by the adopting ordinance. The BCCC believes the provisions of this appendix will only add unnecessary construction documentation requirements and does not propose adoption of this appendix.

3. ***Accessibility.*** The BCCC is proposing two accessibility amendments to IBC chapter 11 as follows;

1104.4 Multistory buildings and facilities. Amend exception 1 as follows (Amended portion in bold font);
Exceptions:

1. An accessible route is not required **in private buildings or facilities that are less than three stories or** to stories and mezzanines that have an aggregate area of not more than 3,000 square feet and are located above and below accessible levels. This exception shall not apply to:
   1.1 Multiple tenant facilities of group M occupancies containing five or more tenant spaces used for sales and rental of goods and where at least one such tenant space is located on a floor level above or below the accessible levels;
   1.2 Stories or mezzanines containing offices of health care providers (Group B or I);
   1.3 Passenger transportation facilities and airports (Group A-3 or B) or;
   1.4 Government Buildings.

This language intends to conform with the ADA which states;

Exceptions:

1. In private buildings or facilities that are less than three stories or that have less than 3000 square feet per story, an accessible route shall not be required to connect

stories provided that the building or facility is not a shopping center, a shopping mall, the professional office of a health care provider, a terminal, depot or other station used for specified public transportation, an airport passenger terminal, or other type of facility as determined by the Attorney General.

1109.5.1 Minimum number (Drinking fountains). Amend as follows; ~~No fewer than two drinking fountains shall be provided.~~ One drinking fountain shall comply with the requirements for people who use a wheelchair ~~and one drinking fountain shall comply with the requirements for standing persons~~.

As the code is written a minimum of two drinking fountains is always required because the maximum height for wheelchair accessibility is 34" and the minimum for standing persons is 36" the BCCC. The BCCC voted that if the plumbing code only required one drinking fountain it could meet the standard for wheelchair accessibility. The intent was to limit cost. Note: ***Staff has some concerns regarding this amendment; a member of Great Plains ADA Center has stated the proposed amendment is in direct conflict with ADA requirements.***

4. ***Existing structures***. Chapter 34 **Existing Structures** has been removed from the IBC. The provisions of this chapter are now contained in the International Existing Building Code (IEBC). IBC section 101.4.7 states, "The provisions of the International Existing Building Code shall apply to matters governing the repair, alteration, change of occupancy, addition, to and relocation of existing buildings." The IEBC goes into much greater detail and clarification than Chapter 34 provided without changing the intent of the provisions.

5. Also of note are;

   A. The BCCC recommendation to adopt appendices R and S in the 2015 International Residential Code. These appendices establish requirements for "Light Straw-Clay Construction" and "Strawbale Construction".
   B. The BCCC recommendation to add a commission member "Experienced in Energy Conservation". (IBC amendment section 113.1.2)

EEC Recommendations

The Environment and Energy Commission has made a number of recommendations regarding energy efficiency that differ from the BCCC recommendations, which are summarized below and in the attachments to this report.

The EEC recommendations would make the following changes to the draft ordinance:

1. Revise the proposed 2015 Residential Energy Code Requirements diagram to require mandatory air leakage testing, state a target air leakage rate, and require blower door and duct pressure tests; require termite barriers.
2. Revise Table 301.2(1) to rate Missouri as "moderate to heavy" termite risk rather than "very heavy" risk as recommended by the BCCC (moderate to heavy is the rating given to Missouri in the published code);
3. Amend the International Residential Code N1102.4.1.2 to require blower door (air leakage) testing (currently it is not recommended a requirement by BCCC);
4. Amend IBC 1301.1.2 to change required insulation values for use groups R-2, R-3, and R-4 (housing other than 1 or 2 family) from R38 to R49 for ceiling or roof and R15 to R20 for exterior walls; require slab insulation rated R10 and require a termite barrier in accordance with R318.3j; and change window "U" value (thermal transmittance rating) from 0.55 to 0.40.
5. Adopt Appendix U, Solar Ready Provisions, as part of the International Residential Code.

Fiscal Impact

Short-Term Impact: None
Long-Term Impact: None

Vision & Strategic Plan Impact

Vision Impacts:
Primary Impact: Environment, Secondary Impact: Health, Social Services & Affordable Housing, Tertiary Impact: Not Applicable

Strategic Plan Impacts:
Primary Impact: Not Applicable, Secondary Impact: Not Applicable, Tertiary Impact: Not Applicable

Comprehensive Plan Impacts:
Primary Impact: Livable & Sustainable Communities, Secondary Impact: Not applicable, Tertiary Impact: Not Applicable

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Legislative History

Date	Action
03/02/15	REP33-15 Council authorized the Building Construction Codes Commission to review the 2015 International Codes.
07/20/15	R 120-15 Council directed the City Clerk to place on file for a period of ninety days the 2015 International code Council family of codes and the 2014 National Electric Code.

Suggested Council Action

Adopt the 2015 International Code Council family of Codes (International Residential Code, International Building Code, International Energy Conservation Code, International Existing Buildings Code, International Plumbing, Mechanical, and Fuel Gas Codes, International Fire Code) and the 2014 National Electric Code to be in full force and effect on October 1, 2016.

Introduced by _____

First Reading _____ Second Reading _____

Ordinance No. _____ Council Bill No. B 110-16

AN ORDINANCE

amending Chapter 6 of the City Code to enact a new Article X adopting the 2015 Edition of the International Energy Conservation Code; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. A new Article X of Chapter 6 of the Code of Ordinances of the City of Columbia, Missouri, adopting the 2015 Edition of the International Energy Conservation Code is hereby enacted as follows:

CHAPTER 6. BUILDINGS AND BUILDING REGULATIONS

. . .

ARTICLE X. ENERGY CONSERVATION CODE

Sec. 6-235. Adopted.

The 2015 Edition of the International Energy Conservation Code, published by the International Code Council, Inc., including Appendices RA and RB, one copy of which has been on file with the city clerk for a period of ninety (90) days prior to the adoption of this article, is hereby adopted by reference and made a part of the Code of Ordinances, City of Columbia, Missouri as fully as if set forth in its entirety. At least one (1) copy of the 2015 Edition of the International Energy Conservation Code shall remain on file in the office of the city clerk and shall be kept available for public use, inspection and examination.

Sec. 6-236. Amendments.

The code adopted by this article is hereby amended by substituting the following sections in lieu of those sections with corresponding numbers in the code, or, where there is no corresponding section in the code, the following sections shall be enacted as additions to the code:

101.1 Title. These regulations shall be known as the Energy Conservation Code of the City of Columbia, Missouri, hereinafter referred to as "this code."

101.6 Director. The administration and enforcement of this ordinance shall be the duty of the director of community development , who is designated the code official for purposes of this code. The code official is hereby authorized to take such action as may be reasonably necessary to enforce the provisions of this code. Such persons may be appointed and authorized as assistants or representatives of the director as may be necessary to carry out the provisions of this code.

101.7 Liability. Any officer or employee charged with the enforcement of this code, while acting on behalf of the city, shall not thereby render such individual liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act performed in the discharge of official duties. Any suit instituted against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The officer or employee shall not be liable for costs in any action, suit or proceeding that is instituted pursuant to the provisions of this code; and any officer or employee acting within the scope of employment and in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith. Nothing contained herein shall be deemed a waiver of the immunities and protection afforded to the city or officers and employees pursuant to state and federal law.

101.8 Restrictions of employees. An employee connected with the division of building and site development shall not be engaged in, or directly or indirectly connected with the furnishing of labor, materials or appliances for the construction, alteration or maintenance of a building, or the preparation of construction documents thereof, unless that person is the owner of the building; nor shall such employee engage in any work that conflicts with official duties or with the interests of the division.

108.4 Failure to comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be liable to a fine of not less than one hundred dollars ($100.00) or more than one thousand dollars ($1,000.00).

108.5 Violation penalties. Any person who shall violate a provision of this code or shall fail to comply with any of the requirements thereof shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not more than one thousand dollars ($1,000.00) or by imprisonment not exceeding one (1) year, or by both such fine and imprisonment. Each day that a violation continues shall be deemed a separate offense.

109.1 Appeals. The owner of a building or structure or any person directly affected by a decision of the code official may appeal to the building construction codes commission from a decision of the official refusing to grant modifications of the provisions of this code covering the manner of installation, or materials to be used in the installation. The

procedure for appeal shall be governed by Section 113.0 of the Building Code of Columbia, Missouri.

109.2 through 109.3 – Delete.

1301.1.2. Use group R-2, R-3 and R-4 shall comply with this section or the requirements of International Energy Conservation Code. All buildings of Use Group R-2, R-3 and R-4 shall be insulated in accordance with the following:

BUILDING AREA AND REQUIRED INSULATION VALUE

Ceiling or roof – R-38

Exterior wall – R-15.5 for the assembly

Floor above unheated area or crawl space and ducts in ventilated attic or crawl space – R-19

Walls separating one and two family dwellings from garage areas, walls facing ventilated attic spaces and finished exterior basement walls – R-13

Ducts in unheated area not exposed to outside ventilation – R-4

Joints in the building conditioned envelope that are sources of air leakage, such as around window and door frames, between wall cavities and window or door frames, between wall assemblies or their sill plates and foundations, between utility service penetrations through the building envelope, shall be properly sealed with compatible and durable caulking, gasketing, weather-stripping or other materials in an approved manner. All exterior walls shall have a vapor retarder, capable of reducing vapor transmission to less than 1 perm, installed on the inside or the warm surface side of the insulated wall or ceiling. Only those ceilings that are attached directly to the underside of the roof rafters, such as flat roofs or cathedral ceilings, are required to install the vapor retarder. All windows shall have a maximum Thermal Transmittance (U) value of 0.55.

C408.2 Mechanical systems and service water heating systems commissioning and completion requirements. Prior to the final mechanical and plumbing inspections, the registered design professional or approved agency should provide evidence of mechanical systems commissioning and completion in accordance with the provisions of this section.

C408.3.1 Functional testing. Prior to passing final inspection, the registered design professional should provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturer's instructions.

Secs. 6-237—6-239. Reserved.

SECTION 2. This ordinance shall be in full force and effect from and after October 1, 2016.

PASSED this _____ day of _____, 2016.

ATTEST:

_____ _____

City Clerk Mayor and Presiding Officer

APPROVED AS TO FORM:

_____

City Counselor

SUPPORTING DOCUMENTS FOR THIS AGENDA ITEM

ENVIRONMENT & ENERGY COMMISSION

City of Columbia & County of Boone
City Hall, Conference Room 1A

February 23, 2016

Mayor McDavid and Council Members,

The Environment and Energy Commission (EEC) has reviewed the changes the Building Construction Codes Commission wants to make to the 2015 International Building Codes (IBC) before adoption. The EEC's concerns are with changes that have the effect of reducing the energy efficiency of buildings – thus increasing residents' energy costs. It's well known that climate change requires that we make changes to the way we build that conserve energy and help utilize different sources of energy. The 2015 IBC codes contain some changes that acknowledge the need for conservation and alternative energy sources.

The following points are addressed in detail in the attached report:

1. Require foundation insulation*;
2. Require air tightness testing*;
3. Require all residential buildings – even those classified as commercial (e.g. townhouses and apartment buildings) - to meet the residential energy efficiency requirements;
4. Require solar-ready construction.

The City of Columbia has made multiple commitments to sustainability (e.g. Mayor's Climate Protection Agreement, Renewable Energy Portfolio Standard, City of Columbia Strategic Plan, et. al.) and reducing energy efficiency is counter-productive to these commitments. We have much farther to go to address the issues that are predicated by climate change. The time to start is now. By adopting the 2015 IBC we save energy in Columbia.

Respectfully Yours,

Jan Dye
Chair
Environment and Energy Commission

* = requirements under the 2012 City of Columbia-adopted International Building Codes that are weakened in the BCCC 2015 IBC proposal.

Attachments:
"EEC response to BCCC"
"IRC 2015 Ordinance + EEC comments"
"IBC 2015 Ordinance + EEC comments"

EEC Energy Efficiency Recommendations

The Building Codes Construction Commission (BCCC) has reviewed the 2015 International Building Codes and made some recommended changes to the code before adoption. The Energy and Environment Commission (ECC) does not recommend adopting changes to the code that have the effect of decreasing energy efficiency, or weaken previously adopted code designed to increase energy efficiency. In this document, the EEC has only addressed those BCCC recommendations which directly impact energy efficiency.

Foundation Insulation

BCCC recommends changing the termite infestation probability from "Moderate to Heavy" to "Very Heavy". EEC disagrees with this recommendation for the following reasons:

- The 2015 International Residential Code has a map which shows Boone County is in the "Moderate to Heavy" termite region and a large distance from the "Very Heavy" region which is along the Gulf coast, *IRC Figure R301.2(6) TERMITE INFESTATION PROBABILITY MAP,* (attached).

- Changing the infestation probability for our region from "Moderate to Heavy" to "Very Heavy" gives credibility to the idea that foundations should be uninsulated to allow for easy viewing by termite inspectors.

- The City has received complaints from customers about winter electric bills of over $400 per month.
    - Columbia Water and Light found these higher energy costs to be primarily a result of uninsulated foundations in slab floored rentals.
    - Slab insulation increases energy efficiency by 15%.
    - Structures built with uninsulated foundations do represent an initial reduced cost for the building but significantly increases costs for consumers because of reduced energy efficiency.

The 2012 International Building Code, which was previously adopted by the City, contains section R318.3 which describes a solution to the problem of termite infestation being hidden by insulation. This section requires foundation insulation with termite shields. The EEC recommends that no changes be made to existing codes that remove the requirement for slab floor foundation insulation with termite shields.

Air Tightness Testing

Demonstrating compliance by testing for air infiltration (blower door test) and duct leakage test is required by IBC. In several places BCCC has recommended changing "shall" to "should," or similar intent, regarding testing and documentation. The EEC disagrees with these recommendation for the following reasons:

- Very few builders will demonstrate their compliance with the provisions of the 2015 code. The rationale that BCCC uses is that "when constructed per the prescriptive code requirements the … test is unnecessary." But the inspections process for air infiltration and ducts is a process in which it is difficult to identify all of the possible problems during the normal inspection process.

- The EEC is willing to assume that the 2015 International Building Code had reason for recommending the tests and that the provisions of the Code should be adopted and followed in Columbia.

- The blower door and duct tests were adopted when the 2012 International Building Code was passed. Changes suggested by BCCC represent a reduction in efficiency standards from current requirements.

Some individuals believe that if the blower door test passes requirements there is no need for a duct test. EEC feels that this is in error for the following reasons:

- There can be large leakage in ducts outside of conditioned space which though they influence the blower door test will not cause it to fail since the size of duct connections are such a small portion of the possible air leakage into the house.

- Significant duct leakage, which occurs within the conditioned space, prevents conditioned air from reaching the more distant rooms and results in occupants adjusting the thermostat setting in order to be comfortable in those more distant rooms. Air in ducts is air on which money has just been spent so that the residence can be comfortable. It is clearly the most expensive air.

Residential Energy Efficiency

The BCCC has supplied a figure titled 2015 RESIDENTIAL ENERGY CODE REQUIREMENTS DIAGRAM to simplify understanding of their proposed reductions in energy efficiency requirements. The figure is helpful but makes several reductions in the energy efficiency standards adopted with the 2012 International Building Code. The EEC recommends changes to the diagram for those items which delete the energy efficiency provisions to maintain the code standards the City adopted with the 2012 International Building Code. An amended diagram is attached.

Specific changes to the diagram:

Item 1

"Ducts shall be sealed. Contractor may have envelope and ducts tested to demonstrate compliance."

To be replaced with:

"Ducts shall be sealed. Envelope (blower door test) and duct testing are required to demonstrate compliance."

The specific references in the International Code are:

- R402.4 Air leakage (Mandatory)
- R402.4.1.2 Testing The building or dwelling unit shall be tested and verified as having an air leakage rate not exceeding … three air changes per hour in Climate Zones 3 through 8. (Columbia is in Climate Zone 4.)
- N1102.4.1.2 (R402.4.1.2) Testing; The building or dwelling unit shall be blower door and verified as having an air leakage…
- R403.3.3 Duct leakage.(Mandatory) Ducts shall be pressure tested to determine air leakage…

Item 2

Under the diagram labeled "Termite barrier installed per R318.3, rigid insulation, extend down 2'-0" the word "OPTIONAL" occurs.

OPTIONAL should be replaced with **REQUIRED**.

Commercial Residential Energy Efficiency

Some types of residential buildings fall under the International Commercial Building Code due to their use and density. Thus, a single-family residential home could have different energy efficiency requirements than another type of residential building. EEC recommends that all R1, R2, R3 and R4 zoned residential buildings be required to meet IBC 2015 Residential Energy Efficiency Code.

The IBC classification system should not be confused with Columbia's zoning classification despite use of the same codes lettering:

1. **R-4**
   5 to 16 persons plus custodial care staff in a supervised residential environment.

2. **R-3 non R-1, R-2, R-3, R-4**
   Typically transient or non-transient housing with 16 or fewer residents.

3. **R2**
   Apartments houses, non-transient hotels and motels, fraternities, sororities, dormitories and a few other residential types

4. **R-1**
   Primarily transient small, 10 or fewer transient occupant, housing.

EEC recommends that all R1, R2, R3 and R4 classified residential buildings be required to meet IBC 2015 **Residential** Energy Efficiency Code for the following reasons:

- Students and permanent Columbia residents who are low income and/or elderly are major consumers of housing that does not meet IBC residential efficiency standards..

- The modest savings on construction costs results in a burden of higher energy costs for consumers of these buildings. Keeping utility costs down is an important social equity component, and is part of Columbia's Strategic Plan. Increasing energy efficiency also reduces the rate at which we need to expand City utilities.

- In the International Building Code the residential energy efficiency code is for "one- and two-family dwellings, and multifamily dwellings (townhouses)."

The BCCC has proposed changes that redefine the insulation values for "commercial residential" units that changes energy efficiency for those housing units. (see table below)

Building Area	2015 IECC Table R402.1.2 **Residential Code**	BCCC Recommended	IRC 2015 IECC Table C402.1.3 **Commercial Code**
	Required Insulation Values		
Ceiling or roof	R49	R38	R38
Exterior wall	R20 or 13+5	R15.5	R13+R3.8 or R20
Floor above crawlspace and ducts in ventilated attic and crawl space	R19	R19	R30
Walls separating garages and other internal but unheated space	R13		R13
Ducts in unheated areas not exposed to outside ventilation	R4	R4	R6 (C403.2.9)
Slab insulation	R10, 2 ft.	Omitted	R10, 2 ft.

Solar Ready

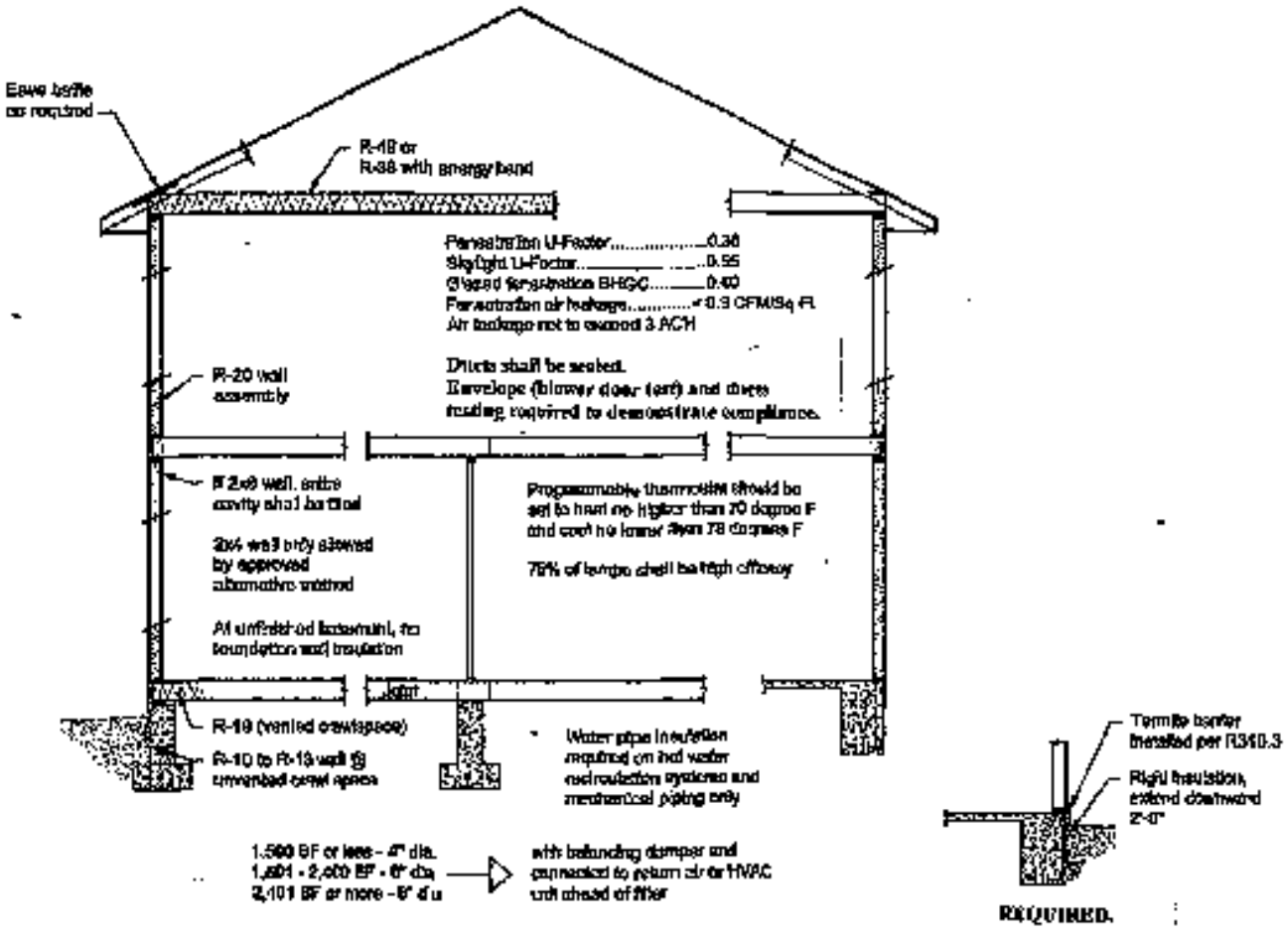
BCCC does not recommend adopting the optional ordinance to require Solar Ready building design. The EEC disagrees for the following reason:

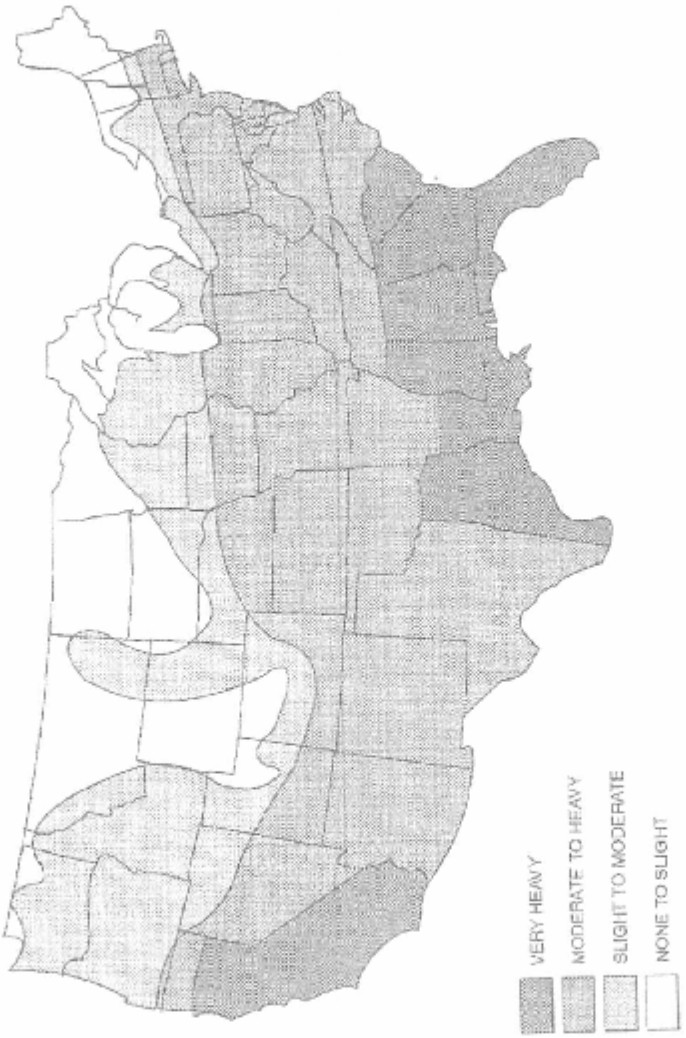
- Solar Ready sets standards for roof design which are minor changes from existing roofs and simply require a portion of the roof to be built without obstructions which would interfere with installing photovoltaic systems in the future.

- This should have very little impact on construction costs as it merely requires that the design takes solar into consideration.

- In the future, a larger portion of our electricity will need to come from solar power. The City of Columbia should encourage home owners to install it, and provide a building code that supports efforts to generate and use solar power.

2015 RESIDENTIAL ENERGY CODE REQUIREMENTS DIAGRAM





Note: Lines defining areas are approximate only. Local conditions may be more or less severe than indicated by the region classification.

FIGURE R301.2(6)
TERMITE INFESTATION PROBABILITY MAP

Energy & Environment Commission

The Energy and Environment Commissions disagrees with some of the changes to this set of building codes proposed by Building Construction Codes Commission. The changes EEC objects to are struck-through with EEC proposed change(s) next to the struck-through text in bold red

Ordinance No. _____ Council Bill No. _____

AN ORDINANCE

Repealing Article II of Chapter 6 of the City Code relating to the 2012 Edition of the International Building Code and enacting in lieu thereof a new Article II adopting the 2015 Edition of the International Building Code; and fixing the time when this ordinance shall become effective.

BE IT ORDAINED BY THE COUNCIL OF THE CITY OF COLUMBIA, MISSOURI, AS FOLLOWS:

SECTION 1. Article II of Chapter 6 of the Code of Ordinances, City of Columbia, Missouri, relating to the 2012 Edition of the International Building Code, is hereby repealed and in lieu thereof a new Article II, relating to the 2015 Edition of the International Building Code, is hereby enacted reading in words and figures as follows:

CHAPTER 6. BUILDINGS AND BUILDING REGULATIONS

…

Article II. BUILDING CODE

Sec. 6-16. Adopted.

The 2015 Edition of the International Building Code, published by the International Code Council, Inc., including Appendices C, E, F, I and J, one copy of which has been on file with the city clerk for a period of ninety (90) days prior to the adoption of this article, is hereby adopted by reference and made a part of the Code of Ordinances, City of Columbia, Missouri as fully as if set forth in its entirety. At least one (1) copy of the 2015 Edition of the International Building Code shall remain on file in the office of the city clerk and shall be kept available for public use, inspection and examination.

Sec. 6-17. - Amendments.

The code adopted by this article is hereby amended by substituting the following sections in lieu of those sections with corresponding numbers in the code, or, where there is no corresponding section in the code, the following sections shall be enacted as additions to the code:

101.1 Title: These regulations shall be known as the Building Code of Columbia, Missouri, hereinafter referred to as "this code."

101.2 Scope. Add the following exception: Where the adopted building code references means and methods of construction, that part shall be stricken.

101.2.2: Appendices C, E, F, and I are hereby adopted as published. Appendix J is hereby adopted as amended.

Appendix J section J106.1 Maximum slope; is hereby amended to read as: The slope of cut and fill surfaces shall be no steeper than is safe for the intended use, and shall be no steeper than 3 horizontal to 1 vertical (33 percent) unless the applicant furnishes a geotechnical report justifying a steeper slope.

Exceptions: Number 1 is deleted in its entirety and exception number 2 will now be listed as exception number 1.

Appendix J section J107.6 Maximum slope; is hereby amended to read as: The slope of fill surfaces shall be no steeper than is safe for the intended use. Fill slopes steeper than 3 horizontal to 1 vertical (33 percent) shall be justified by a geotechnical report or engineering data.

103.0 Division of Building and Site Development

103.1 Director: The administration and enforcement of this code shall be the duty of the director of community development, who is hereby authorized to take such action as may be reasonably necessary to enforce the provisions of this code. Such persons may be appointed and authorized as assistants or representatives of the director as may be necessary to carry out the provisions of this code.

103.2 Appointment: Delete

103.4 Restriction of employees: An employee connected with the Division of Building and Site Development shall not be engaged in or directly or indirectly connected with the furnishing of labor, materials or appliances for the construction, alteration or maintenance of a building, or the preparation of plans or of specifications therefore, unless he is the owner of the building; nor shall such employee engage in any work which conflicts with his official duties or with the interest of the department.

104.7 Department records: An official record shall be kept of all business and activities of the division specified in the provisions of this code, and all such records shall be open to public inspection at all appropriate times and according to reasonable rules to maintain the integrity and security of such records.

104.8 Liability: The code official, officer or employee charged with the enforcement of this code, while acting for the jurisdiction, shall not thereby render himself liable personally, and is hereby relieved from all personal liability for any damage accruing to persons or property as a result of any act required or permitted in the discharge of official duties. Any suit instituted

against any officer or employee because of an act performed by that officer or employee in the lawful discharge of duties and under the provisions of this code shall be defended by the legal representative of the jurisdiction until the final termination of the proceedings. The code official or any subordinate shall not be liable for costs in any action, suit or proceeding that is instituted in pursuance of the provisions of this code; and any officer of the Division of Building and Site Development acting in good faith and without malice, shall be free from liability for acts performed under any of its provisions or by reason of any act or omission in the performance of official duties in connection therewith. Nothing contained herein shall be deemed a waiver of the immunities and protection afforded to the city or officers and employees pursuant to state and federal law.

104.10.1 - Deleted.

107.1 General: Add the following sentence after exception paragraph: Each sheet of each set of plans, each set of specifications, calculations and other data shall be legally sealed by a registered design professional as required by the State of Missouri statutes.

Replace 107.2.5 Site plan: There shall also be filed a site plan showing to scale the size and location of all the new construction and all existing structures on the site, distances from lot lines, the established street grades and the proposed finished grades; and it shall be drawn in accordance with an accurate boundary line survey and certifying as to date survey was made. In the case of demolition, the site plan shall show all construction to be demolished and the location and size of all existing structures and construction that are to remain on the site or plot.

107.2.5.1 Delete in its entirety

107.2.5.2 Private sewage disposal system: The site plan shall indicate the location of a private sewage disposal system where a public sewer is not available. All technical data and soil data required by the State of Missouri Regulation 19 CSR 20-3.060, Minimum Construction Standards for On-Site Sewage Disposal Systems, shall be submitted with the site plan.

107.2.5.3 Location of utility easements to be shown on building permit applications: All applications for building permits shall clearly show the location of all utility easements and all structures, lines or pipes used by the utility and located within such utility easements. No building permit shall be issued with respect to a structure to be located on, over, under or within a utility easement unless and until such time as the city council:

A. Shall determine by ordinance that the structure as proposed contains adequate protection to insure:

    1. Full ingress and egress to all portions of the easement insuring full and safe maintenance, construction and reconstruction of all utility structures located or which could be located within the easement; and
    2. Full use of the easement for utility purposes without danger to public property and to the health, safety and welfare of the citizens of the city.

B. Shall receive adequate assurances in the form of a bond or a waiver of claim and indemnity agreement on a form approved by the city counselor sufficient to protect the city and its citizens from loss.

Provided, however, that in lieu of the requirements of subparagraphs A and B above, an applicant shall have the option of relocating any and all utility improvements and utility easements at applicant's own expense and upon the written approval of the owner of the improvements and utility easements.

108.4 Termination of approval: The code official is hereby authorized to terminate such permit for a temporary structure and to order the demolition of any such construction at the official's discretion, or as directed by a decision of the building construction codes commission.

109.1 General: A permit to begin work for new construction, alteration, removal, demolition or other building operation shall not be issued until the fees prescribed in this section shall have been paid to the Division of Building and Site Development or other authorized agency of the jurisdiction, nor shall an amendment to a permit necessitating an additional fee be approved until the additional fee shall have been paid.

109.2 Schedule of permit fees. A fee for each plan examination, building permit and inspection shall be paid in accordance with the following schedule. Permit fees for new construction, alterations, and additions shall be based upon the value of the construction as determined by the Division of Building and Site Development using the latest August publication of the International Code Council Building Valuation Data which shall be effective as of October 1st of the year it is published. Remodeling, alterations and repair valuations shall be computed using fifty (50) percent of the value for new construction.

The values determined in accordance with the above is for determining the building permit fee and is not intended to determine actual construction costs. The building permit fee shall be:

$2.25 per thousand dollars of value (minimum fee $35.00)

All construction

Footing & Foundation Only	-	The permit fee to do only footing and foundation for a building or structure shall be $54.00. This fee is in addition to the normal building permit fee and is not refundable or credited to the normal building permit fee.
Plan Review Fee	-	Fifty (50) percent of building permit fee. This fee is imposed whenever plans are required.
Failed inspection Fee	-	$35.00 for each failed inspection $75.00 for each failed re-inspection

Exemption: Residential storage structures under 120 square feet shall be exempt from permit fees.

109.2.1 Moving of buildings: The fee for a building permit for the removal of a building or structure from one lot to another or to a new location on the same lot shall be fifty (50) percent of the fee for new buildings with a minimum fee of $45.00. There shall also be an inspection fee of $25.00 prior to moving the building or structure.

109.2.2 Demolition: The fee for a permit for the demolition of a building or structure shall be: residential – fifty dollars ($50.00), commercial – one hundred dollars ($100.00).

109.2.3 Signs: The fee for signs, billboards and other display structures for which permits are required under the provisions of the Sign Regulations shall be seventy-five dollars ($75.00) for not more than fifty (50) square feet. For each sign over fifty (50) square feet - seventy-five dollars ($75.00) plus twenty-five cents ($0.25) for each square foot over fifty (50).

109.4 Work commencing before permit issuance: Where work for which a permit is required by this code is started prior to obtaining the permit, the fees specified above shall be doubled. If any person, firm or corporation commits a second offense by starting work without a permit, the person shall pay three times the customary fee in order to obtain the necessary permit. Any offense shall subject the offender to prosecution under Section 114 of this code.

If any person, firm or corporation fails to obtain the necessary permit(s) within five (5) days after being notified in writing to do so by the code official, the person shall pay in addition to the fee as provided above, the sum of five dollars ($5.00) for each day in excess of the five (5) days that pass before the person obtains the necessary permit. The payment of any or several of the above-stated fees shall not relieve any person from fully complying with the requirements of this code in the execution of the work nor from any penalties prescribed herein.

109.5 Related fees: The payment of the fee for the construction, alteration, removal, or demolition and for all work done in connection with or concurrently with the work contemplated by a building permit, shall not relieve the applicant or holder of the permit from the payment of other fees that are prescribed by law or ordinance for water taps, sewer connections, electrical permits, erection of signs and display structures, marquees or other appurtenant structures, or fees for inspections, certificates of use and occupancy or other privileges or requirements, both within and without the jurisdiction of the Community Development Department.

109.6 Refunds: The code official shall authorize the refunding of fees as follows:

1. The full amount of any fee paid hereunder which was erroneously paid or collected.
2. Not more than seventy five (75) percent of the permit fee paid when no work has been done under a permit issued in accordance with this code.

The code official shall not authorize the refunding of any fee paid, except upon written application filed by the original permittee not later than 180 days after the date of ~~fee payment~~ permit expiration.

111.3 Temporary Occupancy: A bond must be provided to receive a Temporary Certificate of Occupancy. The building official will establish a bond amount based on the work remaining for

completion of the structure and the site. The building owner, contractor, or design professional in responsible charge shall provide information, including a completion date for all building and site work remaining for completion. The building official has the authority to approve or deny any request for a Temporary Certificate of Occupancy. The building official has the authority to set the final amount of the bond, or the option to waive the bond upon receiving written request and documentation for file from the building owner, contractor, or design professional in responsible charge.

113 BUILDING CONSTRUCTION CODES COMMISSION

113.1 Creation of the commission: There is hereby created a building construction codes commission consisting of ten (10) members and ten (10) alternates.

113.1.1 Membership of the commission: The commission shall consist of ten (10) members appointed by the city council. The first three (3) members appointed shall serve for three (3) years, the second three (3) members appointed shall serve for two (2) years and the final four (4) members shall serve for one year. Thereafter, each new member shall be appointed for three (3) years or until a successor has been appointed. Appointments to fill vacancies shall be for unexpired terms only.

113.1.2 Qualifications of commission members: The commission shall be composed of individuals with the following qualifications:

1. Professional engineer (experience in electrical/mechanical)
2. Professional engineer (experience in structural/civil)
3. Master plumber
4. Licensed electrician or electrical contractor
5. Major contractor or superintendent
6. Minor contractor or home builder
7. Person experienced in fire prevention
8. Registered architect
9. Layperson
10. Residential rental property owner
11. **ADD—Person experienced in energy conservation**

113.1.3 Alternates: Whenever possible, the city council shall appoint an alternate commissioner of equal qualifications for each regular commissioner appointed. The alternate shall serve a term contemporaneous to the term of the regular commissioner of equal qualifications.

113.1.4 Commission chair: The board shall select one of its members to serve as chair and the code official shall designate a clerk from the department to serve as secretary to the board, who shall keep a detailed record of all proceedings on file in the Community Development Department.

113.1.5 Meetings: Upon the request of any commissioner or whenever there is any business to transact before the commission, the commission shall meet once each month.

113.1.6 Absence of commissioners: During the absence of a commissioner, the designated alternate shall sit on the commission. Any other alternate may sit on the commission for a member whose alternate is not present as directed by the chairman. The Secretary of the Board shall call alternates in accordance with the policies of the Board. While sitting on the commission, the alternate shall have the full power and authority of the regular commissioner. The chair of the commission is authorized to excuse any member from attendance at a commission meeting; provided that the member requested to be excused before the meeting. Any member who is absent, without being excused, from twenty-five (25) percent of the regular commission meetings held in a calendar year shall automatically forfeit the office. Any member who is absent, without being excused, from three (3) consecutive regular meetings shall automatically forfeit the office. It shall be the duty of the chair to promptly notify the city council of the vacancy. The city council, upon such notice, shall appoint a new commissioner with equal qualifications to fill the remainder of the original term.

113.2 Application for appeals: The owner of a building or structure or any person directly affected by a decision of the code official or fire marshal may appeal to the building construction codes commission from a decision of the official refusing to grant a modification, variance or waiver to the provisions of the Building, Electrical, Plumbing, Mechanical, Fire Prevention, One and Two Family Dwelling or Property Maintenance codes covering the manner of construction or materials to be used in the construction, erection, alteration, or repair of a building or structure. Application for appeal may be made when it is claimed that the true intent of the code or the rules legally adopted thereunder have been incorrectly interpreted, the provisions of the code do not fully apply, an equally good or better form of construction can be used, or undue hardship is created by strict compliance with the letter of the code but has no significant effect on the health, safety and welfare of the public or any individual. A fee of one hundred twenty dollars ($120.00) must be submitted with the application. The fee shall be refunded to the applicant if the applicant appears at the commission meeting at which the appeal is scheduled to be heard.

113.2.1 Notice of meeting: The commission shall meet upon notice of the chairman within ten (10) days of filing of an appeal or at stated periodic meetings if warranted by the volume of work.

113.2.2 Public hearing: All hearings and meetings of the commission shall be public. All hearings considering an appeal of a ruling of the building official or fire marshal shall be on the record and be recorded by a person qualified as a court reporter. At the appeal hearing, the appellant, and appellant's representative, the official of the jurisdiction and any other person whose interests may be affected by the matter on appeal, shall be given an opportunity to be heard. All testimony on matters on appeal shall be given under oath.

113.2.3 Adjourned meeting: When seven (7) qualified commissioners are not present to consider a specific appeal, either the appellant, the building official or their representative may request a postponement of the hearing.

113.2.4 Action of the commission: The commission shall affirm, modify or reverse the decision of the building official or fire marshal by a concurring vote of the majority of its members. Every action of the commission shall be by motion or resolution and the commission's decision shall be evidenced by certified copies which shall be furnished to the appellant and to the building official.

113.2.5 Exemption of members: A member of the commission shall not vote on any question in which that member is engaged as contractor, material dealer, or in the preparation of plans or specifications, or in which the board member has any personal interest.

113.2.6 Determining vote: Failure to secure six (6) concurring votes shall be deemed a confirmation of the decision of the code official except that the appellant shall be entitled to further hearing before a full commission if there were not ten qualified members present when the vote was taken.

113.2.7 Enforcement of decision: The building official shall take immediate action in accordance with the decision of the board.

113.3 Court review: Any person aggrieved by a decision of the commission may appeal to the circuit court as provided by Chapter 536 of the Revised Statutes of Missouri.

113.4 Code revisions: The commission shall, at the request of the city council, review the Building and other codes periodically for updating and recommending changes.

114.4 Violation penalties:

(1) Any person who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, construct, alter, demolish or repair a building or structure in violation of an approved plan or directive of the code official, or of a permit or certificate issued under the provisions of this code, shall be guilty of a misdemeanor, punishable by fine of not more than five hundred ($500.00), or by imprisonment not exceeding one (1) year or both such fine and imprisonment. Each day that a violation continues shall be deemed a separate offense.

(2) Any person who demolishes a structure without first obtaining a permit to demolish the structure shall be punished by a fine of one dollar ($1.00) per gross above-ground square footage of the structure in addition to the penalties described in section 114.4(1).

(3) Any person who demolishes an historic resource, as defined in section 3303.7 without first obtaining a permit to demolish the structure shall be punished by a fine of two dollars ($2.00) per gross above-ground square footage of the structure in addition to the penalties described in section 114.4(1).

115.3 Unlawful continuance: Any person who shall continue any work in or about the structure after having been served with a stop-work order, except such work as that person is directed to perform to remove a violation or unsafe conditions, shall be liable to a fine of not less than one hundred dollars ($100.00) or more than one thousand dollars ($1,000.00).

305.2.3 Ten or fewer children in a dwelling unit. A facility such as the above within a dwelling unit and having ten or fewer unrelated children receiving such day care shall be classified as a Group R-3 occupancy or shall comply with the International Residential Code.

308.6.4 Ten or fewer persons receiving care in a dwelling unit. A facility such as the above within a dwelling unit and having ten or fewer unrelated persons receiving custodial care shall be classified as a Group R-3 occupancy or shall comply with the International Residential Code.

903.2.1.2 Group A-2: Item 2. The fire area has an occupant load of 200 or more; or

1013.2 Floor-level exit signs: Where required, illuminated exit signs in A1, **A2 over 5,000 sf or greater than 200 occupants**, and R-1 use groups shall be placed above exit doors and to the side of exit doors eighteen (18) inches from the floor. The floor level exit signs shall be protected by a guard to prevent physical damage. This amendment shall not be retroactive in nature, and shall not apply to structures prior to January 1, 2007.

1104.4 Multistory buildings and facilities. Amend exception 1 to read as follows;

Exceptions:

1. An accessible route is not required **in private buildings or facilities that are less than three stories or** to stories and mezzanines that have an aggregate area of not more than 3,000 square feet and are located above and below accessible levels. This exception shall not apply to:
   1.1 Multiple tenant facilities of group M occupancies containing five or more tenant spaces used for sales and rental of goods and where at least one such tenantspace is located on a floor level above or below the accessible levels;
   1.2 Stories or mezzanines containing offices of health care providers (Group B or I);
   1.3 Passenger transportation facilities and airports (Group A-3 or B) or;
   1.4 Government Buildings.

1109.5.1 Minimum number. Amend as follows; ~~No fewer than two drinking fountains shall be provided.~~ One drinking fountain shall comply with the requirements for people who use a wheelchair ~~and one drinking fountain shall comply with the requirements for standing persons~~.

Exceptions:

1. ~~A single drinking fountain with two separate spouts that complies with the requirements for people who use a wheelchair and standing persons shall be permitted to be substituted for two separate drinking fountains.~~
2. Where drinking fountains are primarily for children's use, drinking fountains for people using wheelchairs shall be permitted to comply with the children's provisions

in ICC A117.1 and drinking fountains for standing children shall be permitted to provide the spout at 30 inches (762 mm) minimum above the floor.

1301.1.1 Criteria. Building shall be designed and constructed in accordance with the 20~~09~~ 15 International Energy Conservation Code (IECC) with the following amendments to the 20~~09~~ 15 IECC:

1301.1.2: Use group R-2, R-3 and R-4 shall comply with this section or the requirements of International Energy Conservation Code. All buildings of Use Group R-2, R-3 and R-4 shall be insulated in accordance with the following:

BUILDING AREA AND REQUIRED INSULATION VALUE

~~Ceiling or roof -- R-38~~

~~Exterior wall -- R-15.5 for the assembly~~

~~Floor above unheated area or crawl space and ducts in ventilated attic or crawl space -- R-19~~

~~Walls separating one and two family dwellings from garage areas, walls facing ventilated attic spaces and finished exterior basement walls -- R-13~~

~~Ducts in unheated area not exposed to outside ventilation -- R-4~~

~~Joints in the building conditioned envelope that are sources of air leakage, such as around window and door frames, between wall cavities and window or door frames, between wall assemblies or their sill plates and foundations, between utility service penetrations through the building envelope, shall be properly sealed with compatible and durable caulking, gasketing, weather-stripping or other materials in an approved manner. All exterior walls shall have a vapor retarder, capable of reducing vapor transmission to less than 1 perm, installed on the inside or the warm surface side of the insulated wall or ceiling. Only those ceilings that are attached directly to the underside of the roof rafters, such as flat roofs or cathedral ceilings, are required to install the vapor retarder. All windows shall have a maximum Thermal Transmittance (U) value of 0.55.~~

Ceiling or roof ~~-- R-38~~ **R49**

Exterior wall -- ~~R-15.5~~ **R20 or 13+5** for the assembly

Floor above unheated area or crawl space and ducts in ventilated attic or crawl space -- R-19

Walls separating one and two family dwellings from garage areas, walls facing ventilated attic spaces and finished exterior basement walls -- R-13

Ducts in unheated area not exposed to outside ventilation -- R-4

Slab insulation – R10, 2ft and have a termite barrier installed per R318.3.

Joints in the building conditioned envelope that are sources of air leakage, such as around window and door frames, between wall cavities and window or door frames, between wall assemblies or their sill plates and foundations, between utility service penetrations through the building envelope, shall be properly sealed with compatible and durable caulking, gasketing, weather-stripping or other materials in an approved manner. All exterior walls shall have a vapor retarder, capable of reducing vapor transmission to less than 1 perm, installed on the inside or the warm surface side of the insulated wall or ceiling. **The building or dwelling shall be blower door tested and duct tested (if ducts are in uninsulated space) to verify having a leakage rate ….** Only those ceilings that are attached directly to the underside of the roof rafters, such as flat roofs or cathedral ceilings, are required to install the vapor retarder. All windows shall have a maximum Thermal Transmittance (U) value of ~~0.55~~ **0.40**.

2015 IECC Section C408.2 Mechanical systems and service water heating systems commissioning and completion requirements. Amend as follows;
Prior to the final mechanical and plumbing inspections, the *registered design professional or approved agency* ~~shall~~ should provide evidence of mechanical systems commissioning and completion in accordance with the provisions of this section.

C408.3.1 Functional testing. Amend as follows;
Prior to passing final inspection, the *registered design professional* ~~shall~~ should provide evidence that the lighting control systems have been tested to ensure that control hardware and software are calibrated, adjusted, programmed and in proper working condition in accordance with the construction documents and manufacturer's instructions.

1604.1 General: Add the following to this paragraph: The following standard structural design criteria are established:

1. Roof Live Load, Minimum Unreduced = 20 psf.
2. Snow Load (Ground Snow Load) Pg = 20 psf.
3. Seismic Loading;
   a. Site class D, default site class per 1613.3.2.
   b. Mapped Spectral response accelerations.
      (1) Ss = 0.167 or per USGS data
      (2) S1 = 0.093 or per USGS data

1803.2 at the end of the first paragraph ADD; A geotechnical investigation is not required for one story buildings 2500 sf or less in risk categories 1 and 2.

1807.2.2 ADD--The geotechnical engineer must state either way if a global analysis is required.

1809.5 ADD to #1 (Frost depth is 30")

3109.4 Residential swimming pools: Delete exception.

3109.4.1 Outdoor Private Swimming Pool: An outdoor private swimming pool, including an in-ground, aboveground or on-ground pool, hot tub or spa shall be provided with a barrier which shall comply with the following:

1. The top of the barrier shall be at least seventy-two (72) inches (1836 mm) above finished ground level measured on the side of the barrier which faces away from the swimming pool. The maximum vertical clearance between finished ground level and the barrier shall be two (2) inches (51 mm) measured on the side of the barrier which faces away from the swimming pool. Where the top of the pool structure is above finished ground level, such as an aboveground pool, the barrier shall be at finished ground level, such as the pool structure, or shall be mounted on top of the pool structure. Where the barrier is mounted on the pool structure, the opening between the top surface of the pool structure, the opening between the top surface of the pool frame and the bottom to the barrier shall not allow passage of a four-inch (102 mm) diameter sphere.

Exception: For use groups R-3 and R-4 the top of the barrier shall be at least forty-eight (48) inches (1219 mm) above finished ground level measured on the side of the barrier which faces away from the swimming pool provided the swimming pool is equipped with a safety cover which complies with ASTMF 1346.91 (2003).

3201.3 Other laws: Add the following additional sentence to this paragraph: All encroachments by balconies into the public rights-of-way shall conform to the requirements of this chapter and the requirements of section 24-2(c) and section 29-26(c) of the code of ordinances.

3202.2.1 Steps: Delete

3202.3.3 Encroachments 15 feet or more above grade: Delete

3202.5 The regulations for awnings set forth in this code shall be modified for awnings on buildings within the boundaries of the Columbia Special Business District as follows:

(1) The following materials are prohibited:
Wood
Vinyl coated, high sheen cotton
Translucent vinyl

Opaque or semi-opaque awnings with back-lighted translucent graphics are permitted provided the graphics meet all sign requirements.

(2) Any valance on an awning shall not exceed a height of twelve (12) inches.

(3) Upper floor awnings should fit the height, width and shape of each window. Such awnings shall not be placed noticeably higher than the top of the window opening and trim. The bottom of the valance shall not extend lower than the midpoint of the window. Dome-type and curved awnings are only allowed on windows that have arched or curved openings. Upper floor awnings shall not span multiple windows unless the distance between glazed openings is less than eighteen (18) inches.

(4) Stanchions or columns that support awnings, marquees and signs are prohibited.

(5) The lower edge of awnings on the ground floor shall be a minimum of eight (8) feet above the sidewalk and a maximum of ten (10) feet above the sidewalk.

(6) Awnings shall not extend into or occupy more than two-thirds of the width of the sidewalk measured from the building and shall not extend more than seven (7) feet from the building.

(7) Awnings in the Central Business District that were lawful conforming awnings on February 19, 2007 but that do not conform with the provisions of section 6-17 shall be allowed to remain in place indefinitely as lawful nonconforming uses.

(8) Awnings shall be properly maintained.

3303.4 Vacant lot: Where a structure has been demolished or removed, the vacant lot shall be filled, leveled and graded to provide proper drainage with no ponding of water. **The lot shall be left in a natural buildable condition without hazards, and mowable. There shall be sufficient vegetative cover to prevent erosion. The complete structure shall be removed and all accessory structures are to be removed at the time of demolition of the primary structure. Paved auto driveways, parking areas, and on grade building slabs may remain provided they are in acceptable condition.**

3303.6 Utility connections: Before a structure can be demolished or removed, the owner or agent shall notify all utilities having service connections within the structure such as water, electric, gas, sewer, and other connections. A permit to demolish or remove shall not be issued until:

(1) A release is obtained from the utilities, stating that their respective service connections and appurtenant equipment, such as meters and regulators, have been removed or sealed and plugged in a safe manner; and

(2) A bond or other security deposited with the City in the amount of two thousand dollars ($2,000.00), guaranteeing that the building and debris are removed from

the lot within ninety (90) days, the lot graded to comply with Section 3304 and required inspections are completed.

(3) **During demolition** Sewer laterals connecting the building to the City sewer system are to be cut and capped in an approved manner at or near the property line. The cap must be inspected prior to backfill of the excavation.

3303.8 Historic Preservation Commission review of demolition permits. An application for any permit that authorizes the demolition of an historic resource shall include notice of the application addressed to the Historic Preservation Commission. The notice shall be on a form provided by the building official. The building official, upon verification that the application is complete, shall promptly forward the notice to the Historic Preservation Commission in care of the Community Development Department. The building official shall not issue the permit authorizing the demolition until the lesser of thirty (30) calendar days after the notice has been sent to the Community Development Department or until the Historic Preservation Commission notifies the building official that the Commission has no objection to the immediate demolition of the structure. The thirty (30) day review period shall not begin until the application requesting demolition has been deemed to be complete.

The building official shall post notice of the proposed demolition in a conspicuous place facing each street abutting the property on which the structure to be demolished is located. The sign face shall be at least five square feet.

To allow for the thirty (30) day review period and no more than six (6) months to pass following notice to the public of the demolition, no more than seven (7) months shall elapse between making application for a demolition permit and the actual removal of a structure. Failure to remove an authorized structure within this timeframe shall require that a new application for demolition be filed."

The following definitions apply to this section:

“Demolition” means removal of more than twenty-five percent (25%) of the exterior wall or walls facing a public street or removal of fifty percent (50%) of all exterior walls.

“Historic resource” means any structure that

(1) Is fifty (50) years old or older; or
(2) Is located in an historic resources survey area; or
(3) Is within an actual or proposed National Register of Historic Places district; or
(4) Has been recognized or nominated by the Historic Preservation Commission as a “most notable property.”

Exceptions: The following shall not be subject to the provisions of this subsection:

(1) A building or structure that has been determined to be a public nuisance and dangerous to the health, safety, or general welfare under the Property Maintenance Code of Columbia, Missouri.

(2) A building or structure that the City, before December 1, 2008, has authorized to be demolished.

(3) Interior demolition.

(4) An accessory building or structure that is not contemporary with an historic resource.

(5) A building or structure for which the State Historic Preservation Office, Department of Natural Resources, has completed a Section 106 review and returned a finding of no historic significance.

(6) A building or structure that is subject to the certificate of appropriateness provisions of Sec. 29-21.4 of the Code of Ordinances, Columbia MO.

~~3410.2~~ **International Existing Building Code (IEBC) 1301.1.3** Permit to move: A permit to move a building or structure shall not be issued until a bond or other security is posted with the city in the amount of five thousand dollars ($5,000.00), guaranteeing that the building or structure will be made to comply with **IEBC Section 1301.2** within 180 days from date of issuance of permit.

~~3410.3~~ **IEBC 1301.4** Permit required to use public streets or right-of-way: No building or structure of any nature or description shall be moved over any street of the City of Columbia, Missouri, by any means whatsoever without first obtaining permission from the city manager. Upon receipt of an application for a permit, the city manager shall refer the same to the director of community development, who shall cause an inspection to be made to determine whether or not the building or structure is a public nuisance, as described in the Property Maintenance Code of Columbia, Missouri. Upon completion of the inspection, the director shall provide written findings to the city manager. At the same time the application for a permit is referred to the director of community development, the city manager shall direct the director of water and light to make an inspection of the route over which the building or structure is proposed to be moved, to determine whether or not any facilities of the water and light department could constitute an obstacle to such removal. Upon completion of the inspection, the director of water and light shall provide written findings to the city manager. After giving consideration to the reports, and to any other matter involved in such removal which might concern the safety or welfare of the public, or public or private property, the city manager may grant or deny the application for permit.

~~3410.4~~ **IEBC 1301.5** Not to stand on street longer than six hours: No buildings or structures shall be allowed to stand in the streets of the city in one block for a longer period than six (6) hours, except for the period between sunset and sunrise, when such buildings or structures shall have flares set about them on every side.

~~3410.5~~ **IEBC 1301.6** Not to injure or take up pavement: No pavement shall be taken up or removed to assist in any way the moving of any building or structure, nor shall pegs, stakes, or poles be driven into paved streets for such purposes.

~~3410.6~~ **IEBC 1301.7** Bond required: Before any permit shall be issued by the city manager, the applicant shall furnish a good and sufficient bond with a corporate surety company as surety to be approved by the city manager, in a sum to be fixed by the city manager at not less than double the estimated damages, conditioned that the applicant will promptly and fully pay the owner for any public or private property injured or destroyed by applicant in the process of moving such building, and that applicant will reimburse the city for costs and expenses incurred by the city in removing water and light department facility obstacles from the route and restoring the same.

~~3412.2~~ **IEBC 1401.2** Applicability: Structures existing prior to January 1, 2002, in which there is work involving additions, alterations or changes of occupancy, shall be made to conform to the requirements of this section or the provisions of ~~Sections 3403 through 3409~~ chapters 5 through 13.

The provisions in **IEBC** Sections 1401.2.1 through 1401.2.5 (Previously IBC 3412.2.1 through 3412.2.5) shall apply to existing occupancies that will continue to be, or are proposed to be, in Use Groups A, B, E, F, **I-2**, M, R, **and** S ~~and U~~. These provisions shall not apply to buildings with occupancies in Use Group H, **I-1, I-3 or I-4**.

SECTION 2. The repeal of Article II of Chapter 6 of the Code of Ordinances, City of Columbia, Missouri, relating to the 20~~09~~12 Edition of the International Building Code shall not affect any offense or act committed or done or any penalty or forfeiture incurred before the effective date of this ordinance.

SECTION 3. This ordinance shall be in full force and effect from and after October 1st, 2016.

PASSED this ____ day of _____, 2016.