



JOINT ORDINANCE NO. 5713

**A JOINT ORDINANCE WITH SHELBY COUNTY, TENNESSEE ADOPTING THE 2015 EDITION OF THE INTERNATIONAL CODE COUNCIL INTERNATIONAL ENERGY CONSERVATION CODE AND PROVIDING FOR ITS IMPLEMENTATION BY AMENDMENT TO THE MEMPHIS AND SHELBY COUNTY BUILDING AND RESIDENTIAL CODES.**

**WHEREAS**, The Council of the City of Memphis and the Shelby County Board of Commissioners seek to adopt and maintain a comprehensive set of coordinated Technical Codes and to update those Codes to assure the safe and effective construction of commercial buildings and structures in the Community; and

**WHEREAS**, the need for sustainable and energy efficient buildings, structures and building systems has never been more important to this community and the promotion of construction which recognizes the need for such energy efficiency and construction sustainability is critical to the smart growth of this community and for the well being of its citizens, and

**WHEREAS**, it has been determined that it is necessary and prudent to adopt a later edition of the standard code specifically covering the energy use and required insulation for the construction of structures and their support systems in both commercial and residential structures which had previously been covered by regulations in the 2009 Edition of the International Code Council (ICC) Energy Conservation Code which is outdated, and;

**WHEREAS**, Copies of the 2015 Edition of the ICC International Energy Conservation Code have been placed in the Office of Council Records of the Memphis City Council for public review of those documents and as required by state statute before their adoption by reference by the Shelby County Board of Commissioners and the Council of the City of Memphis; and

**WHEREAS**, the provisions of the 2015 Edition of the ICC International Energy Conservation Code, when adopted by the Board and Council, will provide a modern and internally consistent Code for evaluation the work proposed to be constructed and is within the family of codes already adopted in Memphis and Shelby County,

**NOW, THEREFORE BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF MEMPHIS, TENNESSEE THAT**, That all previous energy conservation codes are hereby repealed, and that the 2015 Edition of the ICC International Energy Conservation Code is hereby adopted, a copy of said code being on file in the Office of Council Records of the Memphis City Council.

**BE IT FURTHER ORDAINED,** That the 2015 Edition of the ICC International Energy Conservation Code is amended by adoption of the local amendments attached to this Joint Ordinance as Exhibit A.

**BE IT FURTHER ORDAINED,** That the 2015 Edition of the ICC International Energy Conservation Code and those local amendments attached to this Joint Ordinance as Exhibit A, are hereby incorporated by reference as if set out herein and that no Appendices from the 2015 Edition of the ICC International Energy Conservation Code are adopted.

**BE IT FURTHER ORDAINED,** That the adoption of the 2015 Edition of the ICC International Energy Conservation Code and those local amendment attached hereto, shall be implemented through their inclusion in the appropriate section of the Memphis and Shelby County Building Code, the Memphis and Shelby County Residential Code and other Technical Codes which contains provisions that addresses the required standards for the energy efficiency of various buildings, structures and their internal support systems.

**BE IT FURTHER ORDAINED,** That should any part of this ordinance or code be found to be unconstitutional or unenforceable by a court of competent jurisdiction that such a determination will have no effect on the other portions of the adopted Code and the amendments thereto.

**BE IT FURTHER ORDAINED,** That this Joint Ordinance shall take effect in the City of Memphis and the unincorporated areas of Shelby County on December 31, 2018 by virtue of the concurring and separate passage thereof by the Memphis City Council and by the Board of Commissioners of Shelby County or if not adopted by each legislative body by that date, at the date of such adoption by the last adopting body.

THE FOREGOING ORDINANCE

# 5713 PASSED

1st Reading 11-6-2018

2nd Reading 11-20-2018

3rd Reading 12-18-2018

Approved [Signature]

Chairman of Council

Date Signed: 1-8-19

APPROVED:

[Signature]  
Mayor, City of Memphis

Date Signed: 1/29/19

I hereby certify that the foregoing is a true copy, and said document was adopted by the Council of the City of Memphis as above indicated and approved by the Mayor.

Valerie C. Sripes  
Comptroller

# **EXHIBIT 1**

## **1. Amend Section C101.1 Entitled “Title” So When Amended It Shall Read As Follows:**

**C101.1 Title.** This code shall be known as the Memphis and Shelby County Energy Conservation Code and shall be cited as such. It is referred to herein as “this code.”

## **2. Amend Section C104.2.6 By Removing Requirements On Commissioning Of A Building In The Final Inspection So When Amended The Section Shall Read As Follows:**

**C104.2.6 Final inspection.** The building shall have a final inspection and shall not be occupied until approved. The final inspection shall include verification of the installation and proper operation of all required building controls.

## **3. Delete C107 Entitled “Fees” And All Subsections Under It And Reserve the Section Number So That When Amended It Shall Read:**

**Section C 107 – Reserved.**

## **4. Amend Section C108.4 Entitled “Failure To Comply” So When Amended It Shall Read As Follows:**

**C108.4 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 dollar or more than fifty dollars.

## **5. Amend Section C109.1 “General” So That When Amended It Shall Read As Follows:**

**C109.1 General.** The Memphis and Shelby County Joint Board of Appeals shall be the appeals body which is authorized to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code. It shall have the same authority and responsibilities to hear such appeals and make such determinations as is authorized in the Memphis and Shelby County Building Code.

## **6. Delete Section C109.2 Entitled “Limitation On Authority” Without Replacement.**

## **7. Delete Section C109.3 Entitled “Qualifications” Without Replacement.**

**8. Amend Section C301 Entitled “General” So When Amended It Shall Read As Follows:**

**C301 General.** - Climate zones in Figure C301.1 or Table C301.1 shall be used in determining the applicable requirements from Chapters 4 and 5.

**9. Delete Sections C301.3 Entitled “International Climate Zones” And C301.4 Entitled “Tropical Climate Zones” Without Replacement.**

**10. Amend Section C403.3 Entitled “Economizers” By Adding A New Exception #10 Which Shall Read As Follows:**

10. Buildings, which due to their size or intended use, and based on an analysis provided by the engineer and satisfactory to the Building Official, will not realize an economic payback on the use of this equipment within a 10 year equipment life assumption.

**11. Delete Section C403.2.11 Entitled “Service Water Heating System Commissioning And Completion Requirements” Without Replacement.**

**12. Amend Table C403.3(2) Entitled “Equipment Efficiency Performance Exceptions For Economizers” By Adding Climate Zone 3A In The Same Location As 3B For Clarity Of Requirements In The Climate Zone Covering Shelby County. When Modified The Table Shall Read As Follows:**

**TABLE C403.3(2)  
EQUIPMENT EFFICIENCY PERFORMANCE EXCEPTIONS FOR  
ECONOMIZERS**

<b>Climate Zones</b>	<b>Cooling Equipment Performance Improvements (EER OR IPLV)</b>
2B	10% efficiency improvement
3A & 3B	15% efficiency improvement
4B	20% efficiency improvement

**13. Delete Section C404.11 Entitled “Mechanical System Commissioning And Completion Requirements” In Its Entirety Without Replacement, But Reserve The Section For Numbering Consistency So When Amended It Shall Read As Follows:**

**C404.11 –Reserved.**

**14. Amend Section C405.2.3 Entitled “Daylight Response Controls” By Adding A New Exception # 5 Which Shall Read As Follows:**

5. Any area or room which classifies as a single daylight control zone which does not have fenestration, either by window or skylight, that exceeds 250 square feet.

**15. Delete Section C408 Entitled “System Commissioning” And All Its Subsections, Without Replacement**

**16. Amend Section C503.2 Entitled Change In Space Conditioning” By Deleting The Existing Provisions Replacing It As Shown Below:**

**C503.2 Change in space conditioning.-** Any nonconditioned space that represents 5% of a commercial building, in which it is located, which is altered to become conditioned space shall be required to be brought into full compliance with this code. The Building Official may look back for two years prior to the application to capture other projects during that time that increased the floor area of conditioned space and total those previously conditioned areas with the proposed project’s area to determine if the applicable area threshold is exceeded.

**17. Amend Section C503.3 to add the following Exception 1:**

**Exception 1:** Compliance with the requirements of Section C402 (Building Envelope Requirements) is not required unless the change in occupancy or use will increase fuel or energy use by more than twenty five percent (25%) and the renovations include changes to at least twenty five percent (25%) of the building envelope. In such cases, all envelope renovations must incorporate Section C402 requirements to the extent it is not structurally impractical to do so.

**18. Amend Section C503.4 to add the following Exception 1:**

**Exception 1:** If change of occupancy or use which will increase fuel or energy use requires renovations that are more than twenty five percent (25%) of the area of the space then that renovate portion of the building must meet all requirements in Section C403 (Building Mechanical Systems) except compliance with Section C403 is waived where HVAC systems do not serve at least twice the area renovated.

**19. Amend Section C503.5 to add the following Exception 1:**

**Exception 1:** If change of occupancy or use which will increase fuel or energy use requires renovations that are more than twenty five percent (25%) of the area of the space then that renovate portion of the building must meet all requirements

in Section C404 (Service Water Heating) except compliance with Section C404 is waived where heating water systems do not serve at least twice the area renovated.

**20. Amend Section C503.6 to add the following Exception 2:**

**Exception 2:** If change of occupancy or use which will increase fuel or energy use requires renovations that are more than twenty five percent (25%) of the area of the space then that renovate portion of the building must meet all requirements in Section C405 (Electrical Power and Lighting System).

**21. Amend Section C505.1 Entitled “Change Of Occupancy Or Use” So When Amended It Shall Read As Follows:**

**C505.1 General.** Spaces undergoing a change in occupancy which would result in an increase in demand for either fossil fuel or electrical energy, shall comply with this code. Where the use in a space changes from one use in Table C405.4.2(1) or C405.4.2(2) to another use in the same table, the installed lighting wattage shall comply with Section C405.4.

**22. Amend Section R101.1 Entitled “Title” So When Amended It Shall Read As Follows:**

**R101.1 Title.** This code shall be known as the 2018 Memphis and Shelby County Energy Conservation Code and shall be cited as such. It is referred to herein as “this code.”

**23. Delete Section R107 Entitled “Fees” And All Subsections Under It And Reserve the Section Number So That When Amended It Shall Read:**

**Section R107 – Reserved.**

**24. Amend Section R108.4 Entitled “Failure To Comply” So When Amended It Shall Read As Follows:**

**R108.4 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 dollar or more than fifty dollars.

**25. Amend Section R109.1 Entitled “General” So That When Amended It Shall Read As Follows:**

**R109.1 General.** The Memphis and Shelby County Joint Board of Appeals shall be the appeals body which is authorized to hear and decide appeals of orders, decisions or determinations made by the code official relative to the application and interpretation of this code. It shall have the same authority and responsibilities to hear such appeals and make such determinations as is authorized in the Memphis and Shelby County Building Code.

**26. Delete Section R109.2 Entitled “Limitation On Authority” Without Replacement.**

**27. Delete Section R109.3 Entitled “Qualifications” Without Replacement.**

**28. Delete Sections R301.3 Entitled “International Climate Zones” And R301.4 Entitled “Tropical Climate Zones” Without Replacement.**

**29. Delete Section R401.3 Entitled “Certification” Without Replacement**

**30. Replace Table R402.1.2 Entitled “Insulation And Fenestration Requirements By Component” With The Table Provided Below:**

**TABLE R402.1.2**  
**INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT <sup>a</sup>**

Climate Zone	Fenestration <i>U</i> -Factor <sup>b</sup>	Skylight <i>U</i> -Factor <sup>b</sup>	Glazed Fenestration SHGC <sup>b</sup>	Ceiling <i>R</i> -Factor	Wood Frame Wall <i>R</i> -Value	Mass Wall <i>R</i> -Value <sup>g</sup>	Floor <i>R</i> -Value	Basement Wall <i>R</i> -Value	Slab <i>R</i> -Value & Depth <sup>f</sup>	Crawl Space Wall <i>R</i> -Value <sup>c</sup>
3	0.50 <sup>g</sup>	0.65	0.30	30	13	5/8	19	5/13 <sup>e</sup>	0	5/13

**Footnotes**

a - *R*-Values are minimums. *U*-factors and SHGC are maximums. R-19 batts compressed into normal 2X6 framing such that the *R*-value is reduced by R-1 or more shall be marked with the compressed batt *R*-Value in addition to full thickness *R*-value.

b - The fenestration *U*-factor column excludes skylights. The SHGC column applied to all glazed fenestration.

c- "5/13" means 5-R continuous insulated sheathing on the interior or exterior of the home or R-13 insulation at the interior of the crawl space wall.

d. R-5 shall be added to the required slab edge *R*-Values for heated slabs. Insulation depth shall be the depth of the footing or 2 feet, whichever is less in Zone 3 for heated slabs.

e – Basement wall insulation shall not be required in warm-humid locations as defined by Figure R301. And Table 301.1.

f- The second *R*-value applies when more than half the insulation is on the interior of the mass wall.

g- For impact rated fenestration complying with Section R301.2.1.2 of the International Residential Code or Section 1609.1.2 of the International Building Code, the maximum *U*-factor shall be 0.65.



**31. Amend Section R402.2.4 Entitled “Access Hatches And Doors” By Deleting All Language In The Section After The Word “Weatherstripped” So That When Amended It Shall Read As Follows:**

**R402.2.4 Access hatches and doors.** Access hatches from conditioned spaces to unconditioned spaces such as attics and crawl spaces shall be weatherstripped.

**32. Amend Section R402.3.3 Entitled “Glazed Fenestration SHGC” By Inserting “45 Square Feet (4.2 M<sup>2</sup>) In Place Of “15 Square Feet (1.4m<sup>2</sup>) So When It Is Amended The Section Shall Read As Follows:**

**R402.3.3 Glazed fenestration exemption.** Up to 45 square feet (4.2M<sup>2</sup>) of glazed fenestration per dwelling unit shall be permitted to be exempt from the *U*-factor and SHGC requirements in Section R402.1.2. This exemption shall not apply to the *U*-factor alternative approach in Section R402.1.4 and the Total UA alternative in Section R402.1.5.

**33. Delete Existing Table R402.4.1.1 Entitled “Air Barriers And Insulation Installation” And Replace It With The Table Provided Below:**

**TABLE R402.4.1.1  
AIR BARRIERS AND INSULATION INSTALLATION COMPONENT CRITERIA”**

<b>COMPONENT</b>	<b>CRITERIA</b>
Air Barrier and Thermal Insulation	Exterior thermal envelope insulation for framed walls is installed in substantial contact or continuous alignment with the building envelope air barrier Breaks or joints in air barrier are filled and repaired. Air-permeable insulation is not used as a sealing material. Air-permeable insulation is inside of an air barrier.
Ceiling/attic	Air Barrier in dropped ceiling/soffit is substantially aligned with insulation an any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.
Walls	Corners and headers are sealed. Junction with foundation and sill plate is sealed.
Windows and doors	Space between windows/door jams and framing is sealed.
Rim Joists	Rim joints are insulated and include air barrier.
Floors (including above garage and cantilevered floors)	Insulation installed to maintain permanent contact with underside of subfloor decking Air Barrier is installed at any exposed edge of insulation.
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl space is covered with Class 1 vapor retarder with overlapping joints taped.
Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.
Narrow cavities	Batts in narrow cavities are cut to fit, or narrow cavities are filled with sprayed or blown insulation.
Garage separation	Air sealing is provided between the garage and conditioned spaces.

Recessed lighting	Recessed light fixtures are air tight, IC rated, and sealed to drywall. Exception – Fixtures in conditioned space.
Plumbing and wiring	Insulation is placed between outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.
Shower/tub on exterior wall	Showers and tubs on exterior wall have insulation and an air barrier separating them from the exterior wall.
Electrical/phone box on exterior walls	Air barrier extends behind box or air sealed-type boxes are installed.
Common Wall	Air barrier is installed in common wall between dwelling units.
HVAC register boots	HVAC register boots that penetrate building envelope are sealed to subfloor or drywall.
Fireplace	Fireplace walls include an air barrier.

**34. Delete Section R402.4.1.2 Entitled “Testing” In Its Entirety With No Replacement.**

**35. Amend Section R402.4.2 Entitled “Fireplaces” By Deleting The Phrase “And Outdoor Combustion Air” Without Replacement So When Amended It Shall Read As Follows:**

**R402.4.2 Fireplaces.** New wood-burning fireplaces shall have tight-fitting flue dampers or doors. Where using tight-fitting doors on factory-built fireplaces listed and labeled in accordance with UL 127, the doors shall be tested and listed for the fireplace. Where using tight-fitting doors on masonry fireplaces, the door shall be listed and labeled in accordance with UL 907.

**36. Delete Section R403.3.3 Entitled “Duct Testing” Without Replacement.**

**37. Delete Section R403.3.4 Entitled “Duct Leakage” Without Replacement.**

**38. Amend Section R403.3.5 Entitled “Building Cavities” By Adding The Phrase At The End Of The Existing Language “Except For Return Air On Interior Walls.” So When Amended It Reads As Follows:**

**R403.3.5 Building cavities (Mandatory).** Building framing cavities shall not be used as ducts or plenums except for return air on interior walls.

**39. Delete Section R403.5.1 Entitled “Heated Water Circulation And Temperature Maintenance Systems” Without Replacement And The Section Held In Reserve So When Amended It Shall Read As Follows:**

**R403.5.1 - Reserved**

**40. Amend Section R403.5.2 Entitled “Demand Recirculating Systems” By Removing The Words “Pump Shall Have Controls That Comply With The Following:” And The Two Compliance Methods Thereunder, So When Amended It Shall Read As Follows:**

**R403.5.2 Demand recirculating systems.** A water distribution system having one or more recirculation pumps that pump water from a heated water supply pipe back to the heated water source through a cold water supply pipe shall be a demand recirculation system.

**41. Amend Section R403.6 Entitled “Mechanical Ventilation” By Deleting The Last Sentence In So That When Amended Its Shall Read As Follows:**

**R403.6 Mechanical ventilation. (Mandatory).** The building shall be provided with ventilation that meets the requirements of the *International Residential Code* or *International Mechanical Code*, as applicable or with other approved means of ventilation.

**42. Delete Sections R403.10 Entitled “Pools And Permanent Spa Energy Consumption” And All Of Its Subsections (R403.10.1, R403.10.2, R403.10.3), R403.11 Entitled “Portable Spas” And R403.12 Entitled “Residential Pools And Permanent Residential Spas” Without Replacement.**

**43. Amend Section R404.1 Entitled “Lighting Equipment” by replacing “75 percent” with “25 percent” in the two places it appears in this section so that when amended it shall read as follows:**

**R404.1 Lighting equipment (Mandatory).** Not less than 25 percent of the lamps in permanently installed light fixtures shall be high-efficiency lamps or not less than 25 percent of the permanently installed lighting fixtures shall contain only high-efficiency lamps.

**Exception:** Low voltage lighting.

**44. Delete Section R404.1.1 Entitled “Lighting Equipment” Without Replacement.**

**45. Delete Section R405.4.2.1 Entitled “Compliance Report For Permit Application” And Section R405.4.2.2 Entitled “Compliance Report For Certification Of Occupancy” In Their Entirety Without Replacement, But Showing The Section Numbers As “Reserved” To Preserve Numbering Consistency Of The Remaining Sections. So When Amended They Shall Read:**

**R405.4.2.1 - Reserved.**

**R405.4.2.2 - Reserved.**

**46. Delete Existing Section R503.2 Entitled “Change In Space Conditioning” And Replace It With The Following:**

**R503.2 Change in space conditioning.**- Any nonconditioned space which is altered to become conditioned space shall be required to be brought into full compliance with the envelope insulation requirements of Section R402.1.2 this code.