

Item #: 33

Moved by: BRADFORD

Prepared by: Bobby Decker
Shelby Co. Building Official

Seconded by: FORD

Reviewed by: Robert B. Rolwing
Assistant County Attorney

JOINT ORDINANCE NO. 524

JOINT ORDINANCE AMENDING THE MEMPHIS AND SHELBY COUNTY BUILDING CODE SO AS TO ADOPT THE 2021 EDITION OF THE ICC INTERNATIONAL ENERGY CONSERVATION CODE AND LOCAL AMENDMENTS. SPONSORED BY CHAIRMAN WILLIE BROOKS, COMMISSIONER DAVID BRADFORD AND COMMISSIONER BRANDON MORRISON.

WHEREAS, The Shelby County Board of Commissioners and the Council of the City of Memphis 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 and residential 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 that recognizes the need for such energy efficiency and construction sustainability is crucial to the smart growth of this community and for the well-being of its citizens; and

WHEREAS, It is necessary and prudent to adopt a more recent 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 that had previously been covered by regulations of the 2015 Edition of the

International Code Council (ICC) Energy Conservation Code which is now outdated; and

WHEREAS, Copies of the 2021 Edition of the *ICC International Energy Conservation Code* have been placed in the Shelby County Commission and Memphis City Council Minutes Offices for public review before their adoption by reference, as required by state law; and

WHEREAS, The provisions of the 2021 Edition of the *ICC International Energy Conservation Code*, when adopted by the Board and Council, will provide a modern and internally consistent Code for evaluating proposed construction and is within the family of codes already adopted in Memphis and Shelby County.

NOW, THEREFORE BE IT ORDAINED BY THE BOARD OF COMMISSIONERS OF SHELBY COUNTY, TENNESSEE, That all previous energy conservation codes are hereby repealed except as may be set out in the attachments hereto, and that the 2021 Edition of the *ICC International Energy Conservation Code* is hereby adopted by reference, a copy of said code being on file in the Minutes Offices of the Shelby County Board of Commissioners and of the Memphis City Council.

BE IT FURTHER ORDAINED, That the *2021 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 2021 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 in their entirety, and that no Appendices from the 2021 Edition of the *ICC International Energy Conservation Code* are adopted.

BE IT FURTHER ORDAINED, That the adoption of the 2021 Edition of the *ICC International Energy Conservation Code* and local amendments shall be known as the 2021 Memphis and Shelby County Energy Conservation Code, and 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 contain provisions that address the appropriate standards for energy efficiency of various buildings, structures, and internal support systems.

BE IT FURTHER ORDAINED, That Chapter 6, Article II, of the Shelby County Code of Ordinances, § 6-48 as currently encoded, is amended to make such changes as necessary to reflect adoption of the 2021 Memphis and Shelby County Energy Conservation Code, in accordance with the changes shown in Exhibit B attached hereto and incorporated herein by reference.

BE IT FURTHER ORDAINED, That should any part of this ordinance or code be found to be unlawful 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 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, 2021, by virtue of the concurring and separate passage thereof by the Board of Commissioners of Shelby County and the Memphis City Council, or if not adopted by each legislative body by that date, at the date of such adoption by the last adopting body.



Lee Harris
Shelby County Mayor

Date: 11/9/2021

ATTEST:

Clerk of County Commission

FIRST READING: September 27, 2021

SECOND READING: October 18, 2021

ADOPTED
THIRD READING: November 1, 2021

CERTIFIED COPY

CLERK OF COUNTY COMMISSION

DATE 12/8/2021

Summary Sheet

I. Description of Item

A Joint Ordinance amending the Memphis and Shelby County **Energy Conservation Code** to adopt the 2021 Edition of the *ICC International Energy Conservation Code*, and to replace the 2015 Edition of the *ICC International Building Code* currently enforced. A limited number of local amendments to that standard code are included to make the Code more appropriate for this jurisdiction. The Building Code Advisory Board of volunteer professionals met over a period of several months and worked out these local amendments.

State law requires that local governments update their technical construction codes every few years. Therefore a series of ordinances are submitted to revise these codes. The codes were last updated in 2018.

The effective date of these ordinances is December 31, 2021.

II. Source and Amount of Funding

A. Amount Expended/Budget Line Item

NONE.

B. All Costs (Direct/Indirect)

NONE.

C. Additional or Subsequent Obligations or Expenses of Shelby County

NONE.

III. Contract Items – N/A

A. Type of Contract – N/A

B. Terms – N/A

IV. Additional Information Relevant to Approval of this Item

Administration recommends approval of this Amendment.

EXHIBIT A

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 2021 Memphis and Shelby County Energy Conservation Code and shall be cited as such. It is referred to herein as “this code.”

2. Delete C104 Entitled “Fees” And All Subsections Under It And Reserve the Section Number So That When Amended It Shall Read:

Section C 104 – Reserved.

3. Amend Section C105.2.6 By Removing Requirements On Commissioning Of A Building In The Final Inspection So When Amended The Section Shall Read As Follows:

C105.2.6 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.

4. Amend Section C110.1 “General” So That When Amended It Shall Read As Follows:

C110.1 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.

5. Delete Section C110.2 Entitled “Limitation On Authority” Without Replacement.

6. Delete Section C110.3 Entitled “Qualifications” Without Replacement.

7. Amend Section C301.1 Entitled “General” So When Amended It Shall Read As Follows:

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

8. Amend Section C403.5 Entitled “Economizers” By Adding A New Exception #8 Which Shall Read As Follows:

8. 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.

9. Amend Section C405.2.4 Entitled “Daylight Responsive Controls” By Adding A New Exception # 4 Which Shall Read As Follows:

4. 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.

10. Delete Section C405.6 Entitled “Dwelling Electrical Meter” Without Replacement.

11. Delete Section C405.11 Entitled “Automatic Receptacle Control” and Section C405.11.1 Entitled “Automatic Receptacle Control Function” Without Replacement.

12. Delete Section C405.12 Entitled “Energy Monitoring” And All Its Subsections, Without Replacement.

13. Delete Section C408 Entitled “Maintenance Information and System Commissioning” And All Its Subsections, Without Replacement

14. Amend Section C502.2 Entitled Change In Space Conditioning” By Deleting The Existing Provisions Replacing It As Shown Below:

C502.2 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.

15. Amend Section C503.2 to add the following Exception 2:

Exception 2: 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.

16. Amend Section C503.3 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 renovated 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.

17. 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 renovated 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.

18. Amend Section C503.5 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 renovated portion of the building must meet all requirements in Section C405 (Electrical Power and Lighting System).

19. Amend Section R101.1 Entitled "Title" So When Amended It Shall Read As Follows:

R101.1 Title. This code shall be known as the 2021 Memphis and Shelby County Energy Conservation Code and shall be cited as such. It is referred to herein as "this code."

20. Delete Section R104 Entitled "Fees" And All Subsections Under It And Reserve the Section Number So That When Amended It Shall Read:

Section R104 – Reserved.

21. Amend Section R109.4 Entitled “Failure To Comply” So When Amended It Shall Read As Follows:

R109.4 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.

22. Amend Section R110.1 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.

23. Delete Section R110.2 Entitled “Limitation On Authority” Without Replacement.

24. Delete Section R110.3 Entitled “Qualifications” Without Replacement.

25. Delete Section R401.3 Entitled “Certificate” Without Replacement

26. Replace Table R402.1.3 Entitled “Insulation Minimum R-Values And Fenestration Requirements By Component” With The Table Provided Below:

TABLE R402.1.3
INSULATION MINIMUM R-VALUES AND FENESTRATION REQUIREMENTS BY COMPONENT ^a

Climate Zone	Fenestration U -Factor _b	Skylight U -Factor _b	Glazed Fenestration SHGC _b	Ceiling R -Factor	Wood Frame Wall R -Value	Mass Wall R -Value _f	Floor R -Value	Basement Wall R -Value	Slab R -Value & Depth _i	Crawl Space Wall R -Value _c
3	0.50 _g	0.65	0.30	30	13	5/8	19	5/13 _e	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.

27. Amend Section R402.2.4 Entitled “Access Hatches And Doors” By Deleting the entire section and replacing with the following:

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

28. Amend Section R402.2.4.1 Entitled “Access Hatches And Door Insulation Installation and Retention” By Deleting the entire section after the word “equipment” to read as follows:

R402.2.4 Access hatches and door insulation installation and retention. Vertical or horizontal and doors from conditioned spaces to unconditioned spaces such as attics and crawl spaces shall be weatherstripped. Access that prevents damaging or compressing the insulation shall be provided to all equipment.

29. Amend Section R402.3.3 Entitled “Glazed Fenestration Exemption” By Inserting “45 Square Feet (4.2 M²) In Place Of “15 Square Feet (1.4m²) So When It Is Amended The Section Shall Read As Follows:

R402.3.3 Glazed fenestration exemption. Not Greater than 45 square feet (4.2 M²) of glazed fenestration per dwelling unit shall be exempt from the U-factor and SHGC requirements in Section R402.1.2. This exemption shall not apply to the Total UA alternative in Section R402.1.5.

30. Delete Existing Table R402.4.1.1 Entitled “Air Barrier, Air Sealing And Insulation Installation” And Replace It With The Table Provided Below:

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

COMPONENT	CRITERIA
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.
	Insulation is permanently attached to walls.

Crawl space 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.

31. Delete Section R402.4.1.2 402.4.1.3 Entitled “Testing” In Its Entirety With No Replacement.

32. Delete Section R402.4.1.3 Entitled “Leakage rate” In Its Entirety With No Replacement.

33. 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.

34. Delete Section R403.3.5 Entitled “Duct Testing” Without Replacement.

35. Delete Section R403.3.6 Entitled “Duct Leakage” Without Replacement.

36. Amend Section R403.3.7 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. Building framing cavities shall not be used as ducts or plenums except for return air on interior walls.

37. Delete Section R403.5.1 Entitled “Heated Water Circulation And Temperature Maintenance Systems” To remove the first sentence so when amended it shall read as follows:

R403.5.1 – Heated water circulation and temperature maintenance systems. Heat trace temperature maintenance systems shall be in accordance with Section R403.5.1.2. Automatic controls, temperature sensors and pumps shall be in a location with access. Manual controls shall be in a location with ready access.

38. Delete Section R403.5.1.1. Entitled “Circulation Systems” without replacement

39. Delete Section R403.5.1.1.1 Entitled “Demand Recirculating Water Systems” without replacement.

40. 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. Buildings and dwelling units 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.

41. Delete Sections R403.10 Entitled “Energy Consumption of Pools And Spas” 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.

42. Amend Section R404.1 Entitled “Lighting Equipment” by replacing “All” with “Not less than 75 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 75 percent of permanently installed lighting fixtures, excluding kitchen appliance lighting fixtures, shall contain only high-efficiency lighting sources.

Exception: Low voltage lighting.

43. Delete Section R404.1.2 Entitled “Fuel Gas Lighting Equipment” Without Replacement.

44. Delete Section R404.2 Entitled “Interior Lighting Controls” without replacement.

45. Delete Section R405.3.2.1 Entitled “Compliance Report For Permit Application” And Section R405.3.2.2 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:

R405.4.3.1 - Reserved.

R405.4.3.2 - Reserved.

46. Delete Existing Section R502.2 Entitled “Change In Space Conditioning” And Replace It With The Following:

R502.2 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.

EXHIBIT B
Amendments to the Shelby County Code

-ENERGY CONSERVATION CODE

Amend sec. 6-48 as follows.

ARTICLE II. - MEMPHIS AND SHELBY COUNTY BUILDING CODE

Sec. 6-48. – International Energy Conservation Code.

(a) *Adopted.* The 2021 Edition of the International Code Council (ICC) Energy Conservation Code is hereby adopted.

(b) *Local amendments.* The 2021 Edition of the ICC International Energy Conservation Code is amended by adoption of the local amendments attached to Joint Ordinance No. _____ (on file with the county), as exhibit A. The local amendments are available on the website of the Office of Construction Enforcement.

(c) *Incorporated by reference.* The 2021 Edition of the ICC International Energy Conservation Code and those local amendments attached to Joint Ordinance No. _____ as exhibit A are hereby incorporated by reference as if set out herein in their entirety. No appendices from the 2021 Edition of the International Energy Conservation Code were adopted.

(d) *Implementation.* The adoption of the 2021 Edition of the International Energy Conservation Code and those local amendments attached thereto, shall be implemented through their inclusion in the appropriate section of the Memphis and Shelby County Building Code, Memphis and Shelby County Residential Code and other Technical Codes which contain provisions that addresses the appropriate standards for the construction and installation of such energy conservation designs, requirements and equipment.

(e) *Effective date.* This section shall take effect in the City of Memphis and the unincorporated areas of the county on December 31, 2021 by virtue of the concurring and separate passage thereof by the Memphis City Council and by the board of commissioners of the county, or if not adopted by each legislative body by that date, at the date of such adoption by the second body.