

BILL NO. 2197

ORDINANCE NO. 2197

AN ORDINANCE OF THE CITY OF LADUE REPEALING ORDINANCE 1987 AND ENACTING A NEW CHAPTER 120 OF THE LADUE CODE ADOPTING THE 2015 INTERNATIONAL RESIDENTIAL CODE® FOR ONE AND TWO-FAMILY DWELLINGS, FIRST PRINTING MAY 2014.

WHEREAS, pursuant to Chapter 79 of the Revised Statutes of Missouri, inter alia, the City of Ladue is authorized to adopt ordinances to secure the general health of the inhabitants of the City, to pass ordinances for the prevention of nuisances and their abatement, and to maintain the peace, good government, and welfare of the City; and,

WHEREAS, pursuant to Section 67.280 of the Revised Statutes of Missouri, the City is authorized to adopt or repeal an ordinance which incorporates by reference the provisions of any code or portions of any code, or any amendment thereof, properly identified as to date and source, without setting forth the provisions of such code in full; and,

WHEREAS, the City's Building Commissioner has recommended the City of Ladue adopt the 2015 International Residential Code®, as the Residential Building Code of the City of Ladue for detached one and two-family dwellings and multiple attached single family; and,

WHEREAS, the City Council has duly considered the matter and the recommendations of the Building Commissioner and has concluded to adopt the 2015 International Residential Code® for one and two-family dwellings to promote the health, safety, and general welfare of its residents; and,

WHEREAS, in accordance with Section 67.280 RSMo., the 2015 International Residential Code® for one and two-family dwellings has been on file with the City Clerk for public use, inspection, and examination for a total period of ninety (90) days; and

WHEREAS, this bill having been made available for public inspection prior to its consideration by the City Council and has been read by title two times in open meeting prior to its passage.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF LADUE, ST. LOUIS COUNTY, MISSOURI, AS FOLLOWS:

Section 1. Ordinance No. 1987 is hereby repealed in its entirety and the Ladue Code is hereby amended by enacting a new Chapter 120, "Residential Building Code" to read as follows:

Chapter 120 – RESIDENTIAL BUILDING CODE^[1]

Sec. 120 – 1. – Residential building code adopted; penalty; other codes.

(a) The 2015 International Residential Code[®], first printing May 2014, as published by the International Code Council, Inc., is hereby adopted by reference for regulating and governing residential buildings in the City of Ladue; providing for the issuance of permits and collection of fees therefor; and each and all of the regulations, provisions, penalties, conditions and terms of said Residential Building Code on file in the office of the City Clerk are hereby referred to, adopted, and made a part hereof, including appendix A, as if fully set out in this ordinance, with the additions, insertions, deletions and changes, if any, prescribed in Section 2 of this ordinance

(b) Anyone violating the provisions of said Code in the City shall be guilty of a misdemeanor.

(c) Please refer to the City of Ladue Fire Code of Ordinances Chapter 34 for further code requirements.

Section 2. The 2015 International Residential Building Code[®], first printing, May 2014, as published by the International Code Council, Inc. adopted in Section 1 of this ordinance, is hereby amended by additions, deletions and changes, including the changing of Chapters, Sections, Subsections and the addition of new subsections and so that such amendments set forth in exhibit A, attached hereto and incorporated herein by reference as if fully set out in this ordinance.

Section 3. The recitals in the “Whereas” clauses above are incorporated herein as part of this ordinance. That if any section, subsection, sentence, clause or phrase of this ordinance is, for any reason, held to be unconstitutional, such decision shall not affect the validity of the remaining portions of this ordinance. The City of Ladue hereby declares that it would have passed this ordinance, and each section, subsection, clause or phrase thereof, irrespective of the fact that anyone or more sections, subsections, sentences, clauses and phrases be declared unconstitutional.

Section 4. That nothing in this ordinance or in the Residential Code hereby adopted shall be construed to affect any suit or proceeding impending in any court, or any rights acquired, or liability incurred, or any cause or causes of action acquired or existing, under any act or ordinance; nor shall any just or legal right or remedy of any character be lost, impaired or affected by this ordinance.

Section 5. This ordinance and the 2015 International Residential Code[®] shall be in full force and effect from and after the date of its passage and approval.

PASSED THIS 16TH DAY OF JULY 2018.

President, City Council

APPROVED AND ADOPTED THIS 16TH DAY OF JULY 2018.

Nancy Spewak, Mayor

ATTEST:

Laura Rider, City Clerk

EXHIBIT “A”

Sec. 120 – 2. – Residential building code amendments.

R101.1 Title. Delete text and insert the following: These provisions shall be known as the *Residential Building Code* of the City of Ladue, Missouri, and shall be cited as such and will be referred to herein as “this code.”

R102.8 Matters not provided for. This section shall be added and read as follows: Any requirements that are essential for the structural, fire or sanitary safety of an existing or proposed building or structure, or for the safety of the occupants thereof, which are not specifically provided for by this code, shall be determined by the Building Official.

SECTION 103 BUILDING DEPARTMENT

R103.1 Creation of enforcement agency. Delete text and insert the following: The Building Department is hereby created and the official in charge thereof shall be the Building Commissioner, for the purpose of this code the Building Commissioner shall be referred to as the “*Building Official*.”

R105.1.1 Protection. This section shall be added and read as follows: Adjoining public and private property shall be protected from damage caused by construction. For any property on which site grading, excavation or demolition will occur during or incident to any construction, *alteration*, or demolition activity, the owner, contractor or permit holder before initiating any work under a permit issued therefore shall cause to be clearly demarcated with survey stakes or similar devices placed by a Land Surveyor licensed to practice by the State of Missouri each boundary corner of such property and shall maintain the survey stakes or similar devices for the duration of work authorized under the permit.

R105.2 Work exempt from permit. Delete text and insert the following: Exemption from permit requirements of this code shall not be deemed to grant authorization for any work to be done in any manner in violation of the provisions of this code or any other laws or ordinances of this jurisdiction. Permits shall not be required for the following:

Building:

1. Painting, papering, tiling, carpeting, cabinets, countertops and similar finish work.
2. Swings and other playground equipment.
3. Retaining walls, landscape walls less than 36” (914.4 mm) above grade.
4. Reroofing in like material.
5. Residing in like material.

Electrical:

1. See St. Louis County for electrical permits and requirements.

Gas:

1. Portable heating, cooking or clothes drying *appliances*.
2. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.

Mechanical:

1. Portable heating *appliances*.
2. Portable ventilation *appliances*.
3. Portable cooling units.
4. Replacement of any minor part that does not alter approval of *equipment* or make such *equipment* unsafe.
5. Portable evaporative coolers.

Plumbing:

1. The stopping of leaks in drains, water, soil, waste or vent pipe; provided however, that if any concealed trap, drainpipe, water, soil, waste or vent pipe becomes defective and it becomes necessary to remove and replace the same with new material, such work shall be considered as new work and a permit shall be obtained and inspection made as provided in this code.
2. The clearing of stoppages or the repairing of leaks in pipes, valves or fixtures, and the removal and reinstallation of water closets, provided such repairs do not involve or require the replacement or rearrangement of valves, pipes, or fixtures.

R105.3.1.1.1 Rejected application. This section shall be added and read as follows: Rejected applications will be held on file for sixty (60) calendar days after the date of rejection. If the required information or corrections are not received within this time, the application shall be deemed to have been abandoned.

R105.9 Permits Required. Delete text and insert the following: No person, firm or corporations shall erect, alter, enlarge, or repair (except minor repairs), any building or structure intended to be used for the shelter, support, or enclosure of persons, animals, or chattels; nor wreck, move or remove any such buildings; nor erect any retaining walls or fence wall, constructed of masonry, tile, or concrete; nor enclose any open shed or pavilion, within the City of Ladue, without first obtaining a permit authorizing same for the Building Official. All construction referred to in such building permit must be completed within a period of time to be specified by the Building Official, at time of issuance of permit, but not longer

than 24 months for a new residence and 18 months for all other construction, from the date of issuance of the permit, and if not completed within the permitted time, such person shall be in violation of the residential building code subjecting such person to the general penalty provision for the ordinance violations. Completion shall include finish grading, seeding or sodding, and a finished driveway or vehicle area where included in plans. It is provided, however, that the Building Official may extend the date for such completion without penalty or renewal fees, for a period up to 3 months, if he finds that the delay in completion has resulted from cause beyond the control of the builder such as inclement weather or custom material delay; provided however that monetary reasons shall not be considered as cause. Any request for an extension thereafter must be accompanied with a \$140.00 permit renewal fee to cover the cost of the City in reviewing, considering, and documenting a permit extension. All permit extensions shall be reported to the City Council.

R105.9.1 Subdivision Trustee Review Notification. This section shall be added and read as follows: Any plans submitted to the Building Official for permit approval or for plans that are required to receive Architectural Review Board approval shall bear the original signature, printed name, and date of signature from a minimum of two (2) trustees of the respective subdivision certifying either compliance with the subdivision's restrictions or indentures or disapproval of such plans for failing to comply with the subdivision's restrictions or indentures. Provided, however, that if the applicant demonstrates to the satisfaction of the Building Official that the subdivision does not have a sufficient number of trustees to secure the signatures of two (2) trustees at the time an application is made, then the plans submitted shall bear the original signature, printed name, and date of signature of one (1) trustee, if possible, and if not possible, the requirement of this Section shall be deemed satisfied. Provided, further, that if the applicant demonstrates to the satisfaction of the Building Official that the plans submitted were submitted to the subdivision trustees and such trustees failed and/or refused to act upon such submission either by accepting such plans or rejecting them within thirty (30) business days of submission, the requirement of this Section shall be deemed satisfied. Plans shall not be accepted by the Building Official and/or submitted to the Architectural Review Board until the applicant satisfies the requirements of this Section. The trustees' rejection of such plans evidenced by their signatures shall not constitute a failure or refusal to act on such plans as set forth herein. The City does not assume the enforcement of any restrictions placed upon such plans by subdivision trustees and shall review and act on submitted plans in accordance with the City's regulations and requirements regardless of any disapproval or approval notification from the trustees.

R105.10 Occupancy or Work Performed Without Permit. Delete text and insert the following: Where any occupancy or work for which a permit is required by this code is started, or proceeded with, prior to obtaining said permit, the normal applicable fees shall be doubled. The payment of said doubled fee shall not relieve any persons from fully complying with the requirements of this code or from other penalties prescribed herein.

R105.10 Completion Deposits. This section shall be added and read as follows:
(See Chapter 114, Appendix A, Schedule of Fees, Escrows, Bonds)

- (a) Deposit Required. Each applicant for a temporary occupancy, or a building permit for the construction, *alteration* or repair of any building or structure shall be required by the Building Official, before such permit is issued, to make a cash deposit with the City with respect to the proposed work to insure completion of the work and compliance with all codes, *approved* plans, and other building requirements as provided herein. The amount of said deposit shall be per Table 105.11:
- (b) Use and Release of Deposit.
 - (1) All such funds shall be deposited by the City, and the City shall document the use, replacement, or release of such funds, as deposited by each applicant, according to generally accepted accounting principles.
 - (2) The City may use an applicant's deposited funds to ensure compliance with all codes, approved plans, or building or other legal requirements applicable to the applicant, the owner, or the property, including but not limited to: (i) when a residential construction site has been substantially inactive for a period of thirty (30) consecutive days, then the deposited funds may be used to secure the structure, to remove debris and construction materials from the exterior of the structure, and to remediate any threat to public health or safety, and (ii) to pay any outstanding obligations, taxes, or special assessments owed to the City. Prior to using such funds, the City shall provide the applicant with written notice identifying the deficiency and the City's intent to correct or address the deficiency through the use of the deposited funds, and the City shall allow the applicant a minimum of seven (7) calendar days within which to cure the deficiency. If the City so utilizes the deposited funds, the applicant shall be obligated to deposit a sum equal to the amount so used so as to maintain full funding of the required deposit.
 - (3) Upon final inspection by the City and satisfactory completion of all required work by the applicant, the deposit shall be released in favor of the applicant.
 - (4) Failure of the applicant to schedule, and receive an approved final inspection within thirty (30) calendar days of written notice, sent by certified mail, shall result in forfeiture to the City of any funds deposited in escrow

- (5) Unless the applicant applies in writing for segregated investment of a completion deposit at the time of permit application, an escrow deposit may be invested by the City with other municipal funds and any income derived therefrom may be used for general revenue purposes at any time. If the applicant applies by timely signed writing for segregated investment of its escrow deposit, the City shall segregate such funds and invest them in the same manner as allowed for municipal funds, to the extent practicable given the amount of the escrow; however, no return is assured and the City shall have no liability whatsoever other than to pay any income actually derived from such investment in the event of return of such escrow deposit. In the event of a forfeiture of an escrowed completion deposit, any income from the segregated investment shall also be forfeited.

(c) Appeals.

- (1) Any applicant aggrieved by the administration of this program shall file a written appeal to the Building Official within ten (10) calendar days of the decision appealed from. The Building Official shall issue a written determination of the appeal within five (5) business days of the applicant's appeal, unless circumstances prevent a timely determination, in which case the determination shall be made as soon as reasonably possible.
- (2) In the event the applicant believes that the Building Official improperly denied such an appeal, the applicant must make a written notice of appeal to the City Council. The Council shall hold a hearing, affording the applicant notice and an opportunity to be heard and to offer evidence. The City Council shall determine the merits of the appeal, in writing, within thirty (30) calendar days of the hearing. To the fullest extent permitted by law, said appeal procedure shall be exhausted before an action may be filed in any court against the City or its officers, employees, boards, officials or commissions.

- (d) Additional Remedies. If an applicant fails to comply with any obligation of this section, the code enforcement official may withhold or withdraw any grading, building, occupancy, or other permit until such noncompliance is cured.

R106.2 Site plan. Delete text and insert the following: The *construction documents* submitted with the application for permit shall be accompanied by a site plan showing to scale the size and location of new construction and existing

structures on the site, distances from lot lines, the established street grades and the proposed finish grades and as, applicable, flood hazard areas, floodways, base flood elevations, and design flood elevations; and it shall be drawn in accordance with an accurate boundary line survey, and shall provide sufficient detail to permit the Building Official to determine compliance with site grading and storm water drainage provisions of this code and of all applicable ordinances for the control of drainage and discharge of storm water. In the case of demolition, the site plan shall show construction to be demolished and the location and size of existing structures and construction that are to remain on the site or plot. The *Building Official* is authorized to waive or modify the requirements for a site plan where the application for permit is for *alteration* or repair or where otherwise warranted consistent with the requirements of this code.

R108.2 Fee schedule. Delete text and insert the following: See Chapter 114, Appendix A Schedule of Fees, Escrows, Bonds.

Residential construction permit fees. The fee for a building permit and inspection of residential construction of new structures, *alterations*, additions, residential swimming pools and all other miscellaneous residential construction shall be determined by the Building Official. Permit processing, plan review and inspection charges are included in the fee rate.

Construction cost estimate. The Building Official is authorized to estimate the total cost of construction of a structure, building or project by multiplying the square footage of the structure by an appropriate square foot cost rate. Structures or projects for which it is impractical to estimate the total construction cost by square footage cost method shall be estimated by applying current, unit cost figures to various components. In lieu of determining the total cost of construction as outlined above, the Building Official may accept a bona fide contract or any affidavit of the owner of the building, structure or project, in which the total cost of construction, including site improvements related to the permit, is verified by the applicant and owner. The Building Official is further authorized to accept a bona fide cost amount of a subcontractor, for one (1) specialized trade or discipline of construction, and determine the total assessable cost of construction.

In addition to the plan review and inspection fee, the City shall charge the permit applicant for additional costs incurred for professional storm water design review and other cost incurred as part of the review process. Said fees may be charged at the time of application.

R108.5 Refunds. Delete text and insert the following: No portion of any fee shall be returned to a permit holder in the case of a revocation of a building permit or a suspension, discontinuance, or abandonment of work.

R109.1.1.1 Reports required prior to footing inspections. This section shall be added and read as follows: As a part of the inspection process required in Section R109.1 and prior to the placement of footing concrete, the following conditions shall be met:

- (1) A soils report from a Missouri licensed civil engineer shall be submitted prior to the scheduling of the footing inspection;
- (2) The top of footing form height and setbacks from property lines shall be verified and identified in a report from a Missouri licensed professional land surveyor prior to placement of concrete.

R109.5 Extra inspections. This section shall be added and read as follows: In addition to the inspections normally provided, the Building Official may require that additional inspections or re-inspections be conducted due to noncompliance with code requirements or due to work which is not ready for inspection or not accessible for inspection at the time of a scheduled inspection. Fees for such additional inspections shall be assessed when such inspections are conducted.

R110.4.1 Temporary occupancy permit completion deposit and fee. This section shall be added and read as follows:(See Chapter 114, Appendix A Schedule of Fees, Escrows, Bonds.

SECTION R112 MEANS OF APPEAL

R112.1 Application for appeal. Delete text and insert the following: Any owner or holder of a permit issued subject to this code shall have the right to appeal to the Board of Building Appeals established in Section R112.2 of this code from a decision of the Building Official in connection with such permit or from any notice issued in connection with this enforcement of this code. Appeals shall be based solely upon and shall state a claim: either (a) that the true intent of this code or the rules or regulations adopted pursuant to this code have been incorrectly interpreted, or (b) that the provisions of this code do not apply, or (c) that an equivalent form of construction can be used. Any appeal under this section shall be in writing, shall contain a statement of the grounds for the appeal and shall be filed in the office of the Building Official within twenty (20) calendar days after the rendering of the decision or from the date of service of the notice from which the appeal is taken. To the fullest extent permitted by law, said appeal procedure shall be exhausted before an action may be filed in any court against the City or its officers, employees, boards, officials or commissions

R112.2 Membership of board. Delete text and insert the following: The Ladue Board of Building Appeals is hereby established and shall consist of the membership of the Ladue Zoning Board of Adjustment.

R112.3 Hearing on appeal. Delete text and insert the following: The board shall meet to hear an appeal upon notice from the chair within sixty (60) calendar days of the filing of the appeal.

R113.4 Violation penalties. This section shall be added and read as follows: Any person who shall violate a provision of this code, or who shall fail to comply with any of the requirements thereof, or who shall erect, move, construct, alter, remove, demolish or repair a structure in a manner that is not in compliance with an *approved* plan or directive of the Building Official, or of a permit or certificate issued under the provisions of this code, or who shall start any work requiring a permit without first obtaining the permit thereof, or who shall continue any work in or about a structure after having been served a stop work order, except such work as that person has been directed to perform to remove a violation or unsafe condition; or any owner or tenant of a building or premises, or any other person, who takes part or assists in any violation of this code or who has charge of any building, premises, or part thereof in which such violation shall exist, shall be guilty of a misdemeanor, punishable, upon conviction, by a fine of not more than five hundred dollars (\$500.00). Each day that a violation continues shall be deemed a separate offense.

R114.3 Refusal to comply. This section shall be added and read as follows: The Building Official shall revoke a permit in the case of refusals to comply with stop work orders.

SECTION R115

CONSTRUCTION SERVICES

R115.1 Facilities required. This section shall be added and read as follows: Sanitary facilities shall be provided during construction, remodeling or demolition activities, for construction workers and such facilities shall be maintained in a sanitary condition. Construction workers toilet facilities of the non-sewer type shall conform to ANSI Z4.3.

R115.2 Facilities placement at job site. This section shall be added and read as follows: Non-sewer type facilities shall be placed a minimum of twenty (20 feet 6096 mm) from street edge, door shall face away from the street and a lattice screening shall be placed on three sides.

R115.3 Construction access, parking and delivery. This section shall be added and read as follows: Site access, parking and delivery shall be conducted on paved or rock surface.

R115.4 Material storage. This section shall be added and read as follows: Material storage shall be placed a minimum of twenty feet (20) (6096 mm) from the street edge.

R115.5 Site safety fencing. This section shall be added and read as follows: Site fencing shall be installed when determined to be necessary by the Building Official.

R115.6 Dumpster waste container. Delete text and insert the following: Dumpster waste containers shall not be placed on any street or street right-of-way. Trash and waste shall be picked up and removed as necessary.

R304.3.3 Capacity exceeding 1.5 cubic yards. Delete text and insert the following: Dumpsters and containers with an individual capacity of 1.5 cubic yards or more shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines.

Exceptions:

1. Dumpster or containers in areas protected by an approved automatic sprinkler system installed throughout in accordance with Ladue Fire Code Chapter 34 Section 903.3.1.1, 903.3.1.2 or 903.3.1.3.
2. Storage in a structure shall not be prohibited where the structure is of Type I or IIA construction, located not less than 10 feet from other buildings and used exclusively for dumpster or container storage.

Delete table and insert the following:

TABLE R301.2(1)
CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

GROUND SNOW LOAD	Speed ^d (mph)	Topographic effects ^k	Special wind region ^l	Wind-borne debris zone ^m	SEISMIC DESIGN CATEGORY ^f	Weathering ^a	Frost line depth ^b	Termite ^c	WINTER DESIGN TEMP ^e	ICE BARRIER UNDERLAYMENT REQUIRED ^h	FLOOD HAZARDS ^g	AIR FREEZING INDEX ⁱ	MEAN ANNUAL TEMP ^j
20 psf	115(51)	No	No	No	C	Severe	30 inches	Moderate to heavy	6° F	Yes	November 13, 1989	963	55.2° F

For SI: 1 pound per square foot = 0.0479 kpa, 1 mile per hour = 0.447 m/s.

- a. Weathering may require a higher strength concrete or grade of masonry than necessary to satisfy the structural requirements of this code. The weathering column shall be filled with the weathering index, “negligible,” “moderate” or “severe” for concrete as determined from figure R301.2(3). The grade of masonry units shall be determined from ASTM C 34, C 55, C 62, C 73, C 90, C 129, C 145, C 216, OR C652.
- b. The frost line depth may require deeper footings than indicated in Figure R403.1(1). The *jurisdiction* shall fill in the frost line depth column with the minimum depth of footing below finish grade.
- c. The *jurisdiction* shall fill in this part of the table to indicate the need for protection depending on whether there has been a history of local subterranean termite damage.
- d. The *jurisdiction* shall fill in this part of the table with wind speed from the basic wind speed map [Figure R301.2 (4) A]. Wind exposure category shall be determined on a site-specific basis in accordance with Section R301.2.1.4.
- e. The outdoor design dry-bulb temperature shall be selected from the columns of 97 ½-percent values for winter from Appendix D of the international Plumbing Code. Deviations from the Appendix D temperatures shall be permitted to reflect local climates or local weather experiences as determined by the *building official*.
- f. The *jurisdiction* shall fill in this part of the table with the seismic design category determined Section R301.2.2.1.
- g. The *jurisdiction* shall fill in this part of the table with (a) date of the *jurisdictions* entry into the National Flood Insurance Program (date of adoption of the first code or ordinance for management of the flood hazard areas), (b) the date(s) of the flood Insurance Study and (c) the panel numbers and dates of the currently effective FIRMs or other flood hazard map adopted by the authority having *jurisdiction*, as amended.
- h. In accordance with Sections R905.1.2, R905.4.3.1, R905.5.3.1, R905.6.3.1, R905.7.3.1 and R905.8.3.1, where there has been a history of local damage from the effects of ice damming, the *jurisdiction* shall fill in this part of the table with “YES.” Otherwise, the *jurisdiction* shall fill in this part of the table with “NO.”
- i. The *jurisdiction* shall fill in this part of the table with the 100-year return period air freezing index (BF-days) from Figure R403.3(2) or from the 100-year (99 percent) value on the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32°F).”
- j. The *jurisdiction* shall fill in this part of the table with the mean annual temperature from the National Climatic Data Center data table “Air Freezing Index-USA Method (Base 32° F).”
- k. In accordance with Section R301.2.1.5, where there is local historical data documenting structural damage to buildings due to topographic wind speed-up effects, the *jurisdiction* shall fill in this part of the table with “YES.” Otherwise, the *jurisdiction* shall indicate “NO” in this part of the table.
- l. In accordance with Figure R301.2(4) A, where there is local historical data documenting unusual wind conditions, the *jurisdiction* shall fill in this part of the table with “YES” and identify any specific requirements. Otherwise, the *jurisdiction* shall indicate “NO” in this part of the table.
- m. In accordance with Section R301.2.1.2.1, the *jurisdiction* shall indicate the wind-borne debris wind zone(s). Otherwise, the *jurisdiction* shall indicate “NO” in this part of the table.

R302.7 Under-stair protection. Delete text and insert the following: Enclosed accessible space under stairs shall have walls, under stair surface and any soffits protected on the enclosed side with 5/8” (16mm) type X gypsum board.

R309.2 Separation required. Delete text and insert the following: The garage shall be separated from the residence and its attic area by not less than 5/8-inch Type X gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8-inch Type X gypsum board or equivalent. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than 5/8-inch Type X gypsum board or equivalent. Garages located less than 3 feet from a dwelling on the same lot shall be protected with not less the 5/8-inch Type X gypsum board applied to the interior side of exterior walls that are within

this area. Openings in these walls shall be regulated by Section R302.1.1. This provision does not apply to garage walls that are perpendicular to the adjacent dwelling unit wall or the garage meets R309.3.

R309.3 Fire Sprinklers. Delete text and insert the following: Private garages shall be protected by fire sprinklers where the garage wall has been designed based on Table R302.1(2), footnote a. Sprinklers in garages shall be connected to an automatic sprinkler system that complies with Section P2904. Garage sprinklers shall be residential sprinklers or quick-response sprinklers, designed to provide a density of 0.05 gpm/ft². Garage doors shall not be considered obstructions with respect to sprinkler placement.

R309.4 Automatic garage door openers. Delete text and insert the following: Automatic garage door openers, if provided, shall be listed and labeled in accordance with UL 325.

R309.5 Flood hazard areas. Delete text and insert the following: For buildings located in flood hazard areas as established by Table 301.2(1), garage floors shall be:

1. Elevated to or above the design flood elevation as determined in accordance with Section R322; or
2. Located below the design flood elevation provided that the floors are at or above *grade* on not less than one side, are used solely for parking, building access or storage, meet the requirements of Section R322 and are otherwise constructed in accordance with this code.

R309.6 Carports. Delete text and insert the following: Carports shall be open on not less than two sides. Carport floor surfaces shall be of an *approved* noncombustible material. Carports not open on two or more sides shall be considered a garage and shall comply with the provisions of this section for garages.

Exception: Asphalt surfaces shall be permitted at ground level in carports.

The area of the floor used for parking of automobiles or other vehicles shall be sloped to facilitate the movement of liquids to a drain to toward the main vehicle entry.

R310.7 Openings into a patio structure. This section shall be added and read as follows: Emergency escape and rescue openings shall be permitted to open into a patio structure, provided that the patio structure is unenclosed.

R313.1 Townhouse automatic fire sprinkler systems. Delete text and insert the following: Any builder of a *townhouse* shall offer to any purchaser the option to install or equip such *dwelling*s or residences with a fire sprinkler system at the purchaser's cost in accordance with the requirements of State of Missouri revised statutes Chapter 67, Section 67.281.

R313.1.1 Design and installation. Delete text and insert the following: If installed, automatic residential fire sprinkler systems for *townhouses* shall be designed and installed in accordance with Section P2904 or NFPA 13D.

R313.2 One- and two-family *dwelling*s automatic fire sprinkler systems. Delete text and insert the following: Any builder of a one-two-family *dwelling*s shall offer to any purchaser the option to install or equip such *dwelling*s or residences with a fire sprinkler system at the purchaser's cost in accordance with the requirements of State of Missouri revised statutes Chapter 67, Section 67.281.

R313.2.1 Design and installation. Delete text and insert the following: If installed, automatic residential fire sprinkler systems for one-two-family *dwelling*s shall be designed and installed in accordance with Section P2904 or NFPA 13D.

R314.3 Add the following:

5. Within media or theater rooms and exercise rooms.
6. All levels of an accessory building having habitable space.
7. All levels with habitable space above a garage when not having communication with major section of the house.

R324.1 General. This section shall be added and read as follows: Solar energy systems shall comply with the provisions of the section, and IFC 605.11.

R401.3 Site Grading and Drainage. This section shall be added and read as follows: Lots shall be graded to drain surface water away from the foundation walls. The grade shall fall a minimum of 6 inches (152 mm) within the first 10 feet (3048 mm). Storm water collected from roofs, paved areas, *yard*, courts and sub-soil drainage systems shall discharge to daylight with positive drainage within the buildable area of the lot and not into required yard setbacks as established by the Ladue Zoning Code, or to an *approved* storm water collection system.

R703.18 Permanent closure. This section shall be added and read as follows: Doors, windows and other exterior wall openings shall not be closed with permanent construction unless the new construction meets all requirements of this code for exterior wall construction.

R703.19 Temporary closure, restricted. This section shall be added and read as follows: Doors, windows and other exterior wall openings shall not be closed or boarded up with temporary construction unless the Building Official makes a finding that such temporary closure is necessary to protect the public health, safety or welfare.

R703.19.1 Temporary closure, standards. This section shall be added and read as follows: Temporary closures permitted under this Section 704 shall consist of not less than 1/2 inch (13 mm) thick weather resistant plywood coated with *approved* paint or protective coating to prevent deterioration, cut to fit within openings, securely nailed or screwed in place and securely braced.

R807.1.1 Secondary access. This section shall be added and read as follows: A second attic access shall be placed at opposite ends of the building as practicable, when building square footage exceeds three thousand 3,000 square foot (914.4 m).

R905.2.8.2 Valleys. Delete text and insert the following: Valley linings shall be installed in accordance with manufactures instructions before applying shingles. Valley linings of the following types shall be permitted.

1. For open valleys (valley lining exposed) lined with metal, the valley lining shall be not less than 24 inches (610 mm) wide and of any of the corrosion-resistant metals in Table R905.2.8.2.
2. For open valleys, valley lining of two plies of mineral surfaced roll roofing, complying with ASTM D3909 or ASTM D6380 Class M, shall be permitted. The bottom layer shall be 18 inches (457 mm) and the top layer not less than 36 inches (914 mm) wide.
3. For closed valleys (valley covered with shingles), valley lining of one ply of smooth roll roofing complying with a minimum of No. 15 felt complying with ASTM D226 Type 1, ASTM D4869 Type 1 or ASTM D6757, or valley lining as described in item 1 or 2 shall be permitted. Self-adhering polymer modified bitumen underlayment complying with ASTM D1970 shall be permitted in lieu of the lining material.

Delete table and insert the following:

TABLE N1102.1.2 (R402.1.2)
INSULATION AND FENESTRATION REQUIREMENTS BY COMPONENT^a

CLIMATE ZONE	FENESTRATION U-FACTOR ^b	SKYLIGHT ^b U-FACTOR	GLAZED FENESTRATION SHGC ^{b, e}	CEILING R-VALUE	WOOD FRAME WALL R-VALUE	MASS WALL R-VALUE ⁱ	FLOOR R-VALUE	BASEMENT ^{c, j} WALL R-VALUE	SLAB ^d R-VALUE & DEPTH	CRAWL SPACE ^c WALL R-VALUE
1	NR	0.75	0.25	30	13	3/4	13	0	0	0
2	0.40	0.65	0.25	38	13	4/6	13	0	0	0
3	0.35	0.55	0.25	38	20 or 13 + 5 ^h	8/13	19	0/13 ^f	0	5/13
4 except Marine	0.35	0.55	0.40	49	20 or 13 + 5 ^h	8/13	19	0/13 unfinished 10/13 finished	10, 2 ft	10/13
5 and Marine 4	0.32	0.55	NR	49	20 or 13 + 5 ^h	13/17	30 ^g	15/19	10, 2 ft	15/19
6	0.32	0.55	NR	49	20 + 5 or 13 + 10 ^h	15/20	30 ^g	15/19	10, 4 ft	15/19
7 and 8	0.32	0.55	NR	49	20 + 5 or 13 + 10 ^h	19/21	38 ^g	15/19	10, 4 ft	15/19

For SI: 1 foot = 304.8 mm.

- a. R-values are minimums. U-factors and SHGC are maximums. When insulation is installed in a cavity which is less than the label or design thickness of the insulation, the installed R-value of the insulation shall not be less than the R-value specified in the table.

- b. The fenestration U-factor column excludes skylights. The SHGC column applies to all glazed fenestration. Exception: skylights may be excluded from glazed fenestration SHGC requirements in Climate Zones 1 through 3 where the SHGC for such skylights does not exceed 0.30.
- c. "15/19" means R-15 continuous insulation on the interior or exterior of the home or R-19 cavity insulation at the interior of the basement wall. "15/19" shall be permitted to be met with R-13 cavity insulation on the interior of the basement wall plus R-5 continuous insulation on the interior or exterior of the home. "0/13" means R-0 continuous insulation on the interior or exterior of the home or R-13 cavity insulation at the interior of the basement 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 (609.6 mm), whichever is less in Zone 1 through 3 for heated slabs.
- e. There are no SHGC requirements in Marine Zone.
- f. Basement wall insulation is not required in warm-humid locations as defined by figure N1101.10 and Table N1101.10.
- g. Or insulation sufficient to fill the framing cavity, R-19 minimum.
- h. The first value is cavity insulation, the second value is continuous insulation, so "13+5" means R-13 cavity insulation plus R-5 continuous insulation.
- i. The second R-value applies when more than half the insulation is on the interior of the mass wall.
- j. Band or rim board insulation shall be minimum R-19.

N1103.3.2 (403.3.2) Sealing (Mandatory). Delete text and insert the following: Ducts, air handlers, filter boxes and building cavities used as ducts shall be sealed. Joints and seams shall comply with Section M1601.4

Exception: Duct sealing and tightness test is not required if the air handler and most ducts are located within conditioned space.

N1103.3.5 (R403.3.5) Building cavities used as ducts or plenums. Delete text and insert the following: Individual stud space or floor joist space may be used for return air as a duct, plenum enclosure construction materials that are exposed to the airflow shall have a flame spread index of not more than 25 and a smoke developed index of not more than 50 when tested in accordance with ASTM E84 or UL 723.

The use of gypsum boards to form plenums shall be limited to systems where the air temperatures do not exceed 125°F (52°C) and the building mechanical system design conditions are such that the gypsum board surface temperatures will be maintained above the airstream dew point temperature.

M1502.4.4.1 Specified length. This section shall be added and read as follows: The maximum length of the exhaust duct shall be 35 feet (10668 mm) from the connection to the transition duct from the dryer to the outlet terminal. Where fittings are used, the maximum length of the exhaust duct shall be reduced in accordance with Table M1502.4.4.1.

Exception: The total developed length of dryer exhaust ducts may be up to a maximum of 55 feet (16764 mm) when cleanouts and signage are provided. Cleanouts shall be provided for every 15 feet (4572 mm) of length, within 12 inches (305 mm) of the second elbow and at every elbow thereafter. Permanent signage shall be provided to identify each cleanout location. Permanent signage shall also be provided at the dryer exhaust connection to inform occupants of the periodic inspection and cleaning requirements.

M1503.1 General. Delete text and insert the following: All kitchens shall be equipped with means of mechanical exhaust directly over, or adjacent to, a range or cook top. The mechanical exhaust system may be of the recirculating type or may exhaust directly to the outside. Recirculating systems shall be equipped with the appropriate filtration for grease removal and odor control and must be capable of operating in a moist environment. Either type of system shall be a listed exhaust system. With either type, the mechanical exhaust system shall be allowed to run on an intermittent basis. Exhaust systems shall be installed in accordance with Sections M1503, M1505 and M1507.3. Range hoods shall discharge to the outdoors through a single-wall duct. The duct serving the hood shall have a smooth interior surface, shall be air tight and shall be equipped with a backdraft damper. Ducts serving range hoods shall not terminate in an attic or crawl space or areas inside the building.

Exception: Where installed in accordance with the manufacturer's installation instructions, and where mechanical or natural ventilation is otherwise provided, listed and labeled ductless range hoods shall not be required to discharge to the outdoors.

M1503.4 Makeup air required. Delete text and insert the following: Exhaust hood systems capable of exhausting in excess of 600 cubic feet per minute (0.19 m³/s) shall be provided with makeup air at a rate approximately equal to the exhaust air rate. Such makeup air systems shall be equipped with a means of closure and shall be automatically controlled to start and operate simultaneously with the exhaust system.

Delete table and insert the following:

TABLE M1601.1.1(2)
GAGES OF METAL DUCTS AND PLENUMS USED FOR HEATING AND COOLING

Type of duct	Size (inches)	Minimum Thickness (inch)	Equivalent Galvanized Sheet Gage
Round ducts and enclosed rectangular ducts	14 or less	0.013	30
	Over 14	0.016	28
Exposed rectangular ducts	14 or less	0.016	28
	Over 14	0.019	26

M1801.1 Venting required. Delete text and insert the following: Fuel-burning appliances shall be vented to the outdoors in accordance with their listing and label and manufacturer's installation instructions except appliances listed and labeled for unvented use. Venting systems shall consist of approved chimneys

or vents, or venting assemblies that are integral parts of labeled appliances. Gas-fired appliances shall be vented in accordance with Chapter 24.

Exception: Unvented appliances where the manufacturer's instructions require a window to be opened during operation of the appliance shall not be installed.

M2006.3 Temperature and pressure-limiting devices. Delete text and insert the following: Pool heaters shall have temperature and pressure-relief valves.

M2101.11 Joints between different piping materials. This section shall be added and read as follows: Joints between different materials shall be made with approved adapter fittings. Joints between different metallic piping materials shall be made with approved dielectric fittings or brass converter fittings.

G2408.4 (305.7) Clearances from grade. Delete text and insert the following: Equipment and appliances installed at grade level shall be supported on a level concrete slab or other approved material extending not less than 2 inches (50.8 mm) above adjoining grade.

G2420.5 (409.5) Appliance shutoff valve. Delete text and insert the following: Each *appliance* shall be provided with a manual or automatic shutoff valve installed on the supply piping in an adjoining cabinet or drawer base at either side at the point of use for all cooking stoves and cook tops. Shutoffs may be under the cook stove if accessibility is accommodated by an open space under appliance on free standing legs. Shutoff valves shall not be located in the *basement* under the *appliance*.

G2420.5.1.1 (409.5.1) Shutoff valve in fireplace. This section shall be added and read as follows: Gas operated fireplaces and built-in outdoor grills shall have a keyed or valve shutoff located outside of the firebox in either the floor or wall not further than 6 feet (1829 mm) from the firebox or *appliance*.

P2603.5.1 Sewer depth. Delete text and insert the following: *Building sewers* that connect to a private sewage disposal systems shall be not less than 18 inches (457 mm) below finished grade at the point of septic tank connection. *Building sewers* shall be not less than 30 inches (762 mm) below grade.