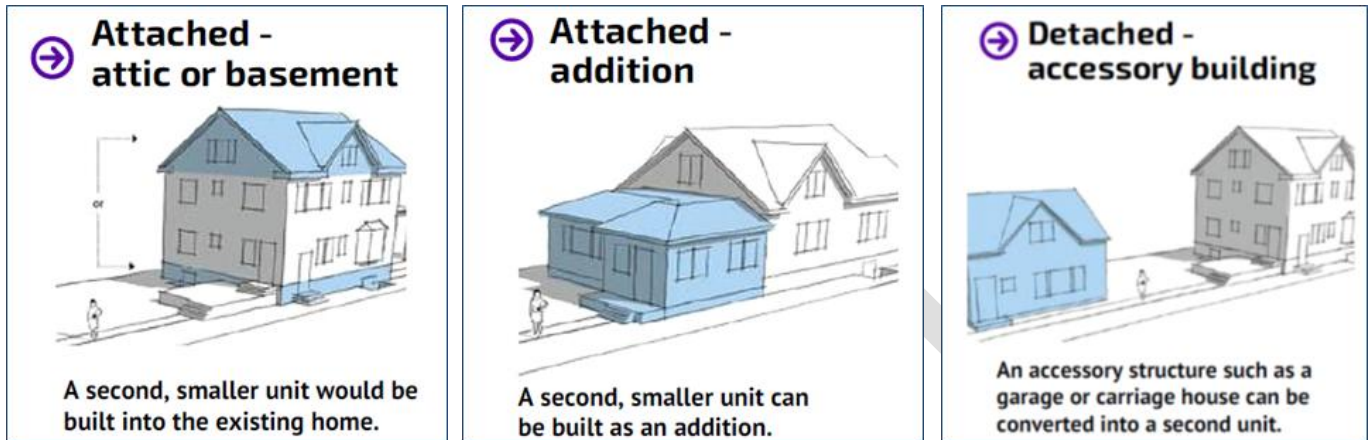


DRAFT - Accessory Dwelling Units – Building Safety Guide

An Accessory Dwelling Unit is a second, smaller dwelling units either developed out of an existing single family house (such as a basement, attic or addition) or as part of an accessory structure (such as a converted garage or carriage house).



Drawings courtesy of City of Minneapolis

The purpose of this guide is to assist contractors, builders, and developers with the design and construction of accessory dwelling units.

NOTE: Prior to constructing or creating an Accessory Dwelling Unit (ADU) on your property you must obtain the necessary permits (i.e. zoning, building, electrical, mechanical, plumbing, etc.), required by code. More information on these is detailed below:

Planning & Zoning

Zoning Ordinance Requirements

- ADUs are permissible in the following zoning districts only:
 - R1A, R1B, R1C, R1D, R1E and R2A To view the Ann Arbor Zoning map, follow this link: www.a2gov.org/zoningmap
- An ADU is permissible **ONLY** on a lot with a single family dwelling. If the lot contains a duplex or other multiple family residence, an ADU is not allowed.
- Only one accessory dwelling unit shall be permitted per single-family detached dwelling.
- The minimum lot size required to construct an ADU is 5,000 square feet in any of the 6 districts where they are allowed.
- The gross floor area of the ADU cannot exceed that of the primary dwelling, and:
 - If the lot is between 5,000 square feet and 7,200 square feet, the maximum size of the ADU is 600 square feet
 - If the lot is greater than 7,200 square feet, the maximum size of the ADU is 800 square feet.
- The ADU shall be designed so that the appearance of the main building remains that of a single-family residence or detached accessory structure such as a garage or carriage house.

- Any new entrances shall be located on the side or in the rear of the building.
- The owner of the property shall occupy one of the dwelling units, except for temporary absences not to exceed a combined total of 6 months in a calendar year.
- The ADU shall not be occupied by more than 2 related individuals and their offspring or 2 unrelated individuals
- The combined total of individuals that can live on the property cannot exceed ONE of the following:
 - One or more persons related by blood, marriage, adoption or guardianship living as a single housekeeping unit, in all districts.
 - Four persons plus their offspring living as a single housekeeping unit, in all districts.
 - Six persons living as a single housekeeping unit in R4 districts.
- ADUs can be constructed as part of the primary residence subject to building code (see below).
- Any addition used for an ADU is still subject to zoning requirements such as rear and side yard setbacks, as well as height limitations.
- ADUs can be constructed as part of an accessory structure subject to the following:
 - Legally conforming structures built before Dec. 31, 2016 may be converted all or in part to an ADU
 - Existing legal accessory buildings constructed before December 31, 2016 that are more than 200 square feet may be demolished and rebuilt to include an ADU
 - Newly constructed accessory structures cannot be used for ADUs. For example, tiny houses would not be allowed.
- At least one additional off-street parking space is required unless:
 - The house already has two off street spaces (such as a two-car garage), which meets the requirement
 - The property is within a quarter-mile of a bus stop
 - Tandem or stacked parking in a driveway can count toward the off-street parking requirement as long as it is not located in the required front yard.



Legal tandem parking space for ADU



Does NOT meet parking requirement, as located in the required front yard.

- While one of the two residences must be owner-occupied, the other unit can be rented.
- All properties with an ADU must be part of the housing inspection program. More information on the housing inspection program can be found online at a2gov.org or by calling 734.794.6000 x42669
 - Note that if the ADU is within the primary structure, both residences will likely be inspected as they share walls, and would need to be inspected for fire safety.
- To avoid ADUs being used for Air BNB or other short-term rental, leasing or rental of the ADU for less than 30 days is prohibited.
 - The property is within a quarter-mile of a bus stop
 - Tandem or stacked parking in a driveway can count toward the off-street parking requirement as long as it is not located in the required front yard.
- A deed restriction must record with the register of deeds prior to occupancy. Both the planning and building departments have samples that can be used.

For Planning and Zoning questions regarding accessory dwelling units, please contact the planning department at 734.794.6000

Application Process

- 1) Zoning Compliance Permit – this is the first application to start the process.
- 2) Housing Inspection Program registration
- 3) Submit building plans - This step would include plans for mechanical, plumbing, and electrical as needed. Any grading permits would likely be pulled at this stage
- 4) Start construction and building/trade inspections
- 5) Deed restriction recorded and provided to Planning department
- 6) Certificate of Occupancy granted

MICHIGAN STATE BUILDING CODE

A. Two-Family Dwelling (Definition): The primary residence and the accessory dwelling unit associated with that residence are each treated as separate dwelling units under the State Building Code. A dwelling unit is a single unit providing complete independent living facilities for one or more persons, including permanent provisions for living, sleeping, eating, cooking and sanitation. Therefore, a structure containing a primary residence and an accessory dwelling unit is treated as a two-family dwelling with respect to the *Michigan Building Code*

B. Use of Contractors: It is highly recommended that home-owners use a licensed general contractor for construction or renovation projects, which is normally required for rental or commercial properties. There is an exception for single-family dwellings when a homeowner chooses to perform as the general contractor for the construction of a single-family dwelling on land owned by that person and where the home will be occupied by

the person or their family for a minimum of 12 months after completion. Note that all trade contractors including plumbing, electrical, and mechanical must be licensed..

It is highly recommended that home-owners use a licensed general contractor for development of an Accessory Dwelling Unit.

- C. Ceiling Height: Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 feet. An exception can be made when the existing average height is 7 feet. In that case, the minimum ceiling height is 6 feet, 8 inches. The required height shall be measured from the finish floor to the lowest projection from the ceiling. When considering the remodel of an existing basement to an accessory dwelling unit, the ceiling height requirement very important. If at least the minimum required ceiling height cannot be achieved, then the space may not be considered a dwelling unit or an accessory dwelling unit.
- D. 1-Hour Fire Resistant Separation: The dwelling units shall be separated from each other by wall and/or floor assemblies of not less than 1-hour fire-resistive rating when tested in accordance with ASTM E 119. The fire-resistance-rated floor-ceiling and interior wall assemblies shall extend to and be tight against the exterior wall, and wall assemblies shall extend to the underside of the roof sheathing. One common source for approved fire resistive designs is the U.L. Design Directory. Reference the U.L. Online Certifications Directory at ul.com. As an alternative, calculated fire resistance may be used.
- E. Supporting Construction for Fire-Resistant Floor Assemblies: When floor assemblies are required to be fire-resistance-rated, the supporting construction of such assemblies shall have an equal or greater fire-resistive rating. All load-bearing walls, exterior and interior, that hold up the floor/ceiling between lower and upper level units shall have 1-hour fire resistant protection in addition to 1-hour fire separation required for the floor/ceiling assembly. For exterior framed walls, the fire-resistance is required from the interior side only. Typically, a 1-hour fire protection for exterior walls may be obtained by applying one layer of 5/8" Type "X" gypsum board to the interior side of the wall. Interior load-bearing partitions shall have the rated gypsum board on both sides of the wall. 1-hour protected walls that do not form tenant or occupancy separation may have unprotected openings and need not comply with sound transmission standards. The main concern for supporting construction is to protect the structural components with 1-hour fire resistance.
- F. 1-Hour Fire Rated Wall: A common design for a 1-hour rated wall is constructed of 2x4 stud framing spaced 16" on center, with one layer of 5/8" type "X", fire-rated gypsum board applied to each side of the wall. Although this design provides the mandatory fire rating, it does not address the sound transmission requirements.
- G. 1-Hour Fire Rated Floor/Ceiling: A common design for a 1-hour rated floor/ceiling is constructed of 2x10 floor joists (joist must be on 16" centers), with one layer of 5/8" type "X" fire-rated gypsum board applied to the bottom of the joist. For floor systems

constructed of wood joists smaller than 2x10s, an approved method of achieving a one-hour rating is to apply two layers of 1/2" Type "X" fire-rated gypsum board to the bottom of the joists. The floor finish and subflooring shall provide a minimum of 15 minute fire resistance. Subflooring may be 11/16" tongue-and-groove boards or 15/32 wood structural panels. Finish flooring may be hardwood or softwood flooring on tar paper, carpeting, or ceramic tile. Although this design provides the mandatory fire rating, it does not address the sound transmission requirements. Refer to the discussion of Sound Transmission below.

- H. Penetrations of Fire-Resistive Assemblies: Penetrations may consist of plumbing pipes, HVAC ductwork, electrical boxes, electrical panels, washing machine boxes, dryer vents, etc... which breach the membrane of a 1-hour fire resistive assembly. Penetrations shall be protected by an approved penetration firestop system installed as tested in accordance with ASTM E 814. It is prudent to limit the number of penetrations into a fire-resistive assembly wherever it is feasible to do so. Typically, there are fewer penetrations when the dwelling units are side-by-side, than when the dwelling units are vertically stacked. In some cases foam spray may meet this requirement.
- I. Common Area(s): The fire-resistive separation line between the two dwelling units needs to be clearly defined in the design. An envelope of fire protection shall form a continuous enclosure around the dwelling unit that terminates at an exterior wall, roof deck, or intersection at another rated assembly. Sometimes there are areas within a structure that are separate from both tenant spaces, such as a common laundry room, common utility room, or interior corridor. Common areas shall be separated from both of the dwelling units by 1-hour fire-resistive construction.
- J. Fireblocking: Fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between the top story and the roof space. The areas where inspectors see the most fireblocking infractions are at dropped ceilings, soffits, and cove ceilings; as well as between basement foundation walls and adjacent framed walls.
- K. Basement and Bedroom Emergency Egress Windows/Doors: Basements with habitable space and every sleeping room shall have at least one openable window or exterior door approved for emergency egress or rescue. The units must be operable from the inside to a full clear opening without the use of a key or tool. Where windows are provided as a means of emergency egress or rescue, they shall have a sill height of not more than 44 inches above the floor. Egress window shall have a minimum net clear opening area of 4 s.f., minimum net clear opening height of 22 inches, and minimum net clear opening width of 20 inches. Each egress window from sleeping rooms must have a minimum total glass area of not less than 5.0 s.f. in the case of a ground window and not less than 5.7 s.f. in the case of a second story window. Escape and rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Where a door opening having a threshold below the adjacent ground elevation serves as an

emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Code..

- L. Premise Identification (Address Labels): Approved numbers or addresses shall be provided in such a position as to be plainly visible and legible from the street or road fronting the property. These numbers should contrast with their background and be Arabic numerals or alphabet letters. The minimum size for address numbers is 4 inches high with a minimum stroke width of 0.5 inch. Each dwelling unit within a multiple dwelling building shall be labeled with an address specific to that dwelling unit. (e.g., 100-A, 100-B, etc.)

ELECTRICAL CODE ISSUES:

- A. Licensed Electrical Contractor: All electrical work shall be done by an electrical contractor, licensed in North Carolina. The general contractor should advise the electrical contractor of the location of any fire-rated walls and floor/ceiling assemblies.
- B. Separate Metering of Electrical Utilities: Separate metering is optional, and is the home-owners decision.
- C. House Meter: Branch circuits in dwelling units shall supply only loads within that dwelling unit or loads associated only with that dwelling unit. Branch circuits required for the purpose of lighting, central alarm, signal, communications, or other needs for public or common areas of a two-family dwelling shall not be supplied from equipment that supplies an individual dwelling unit. Separate metering of electrical usage shall be provided for common use areas. Note that this may require that the panel be upgraded.
- D. Overcurrent Devices (breakers and fuses): Each tenant space or dwelling unit shall have an electrical panel that is readily accessible. The panel box serving one tenant may not be located within another tenant's space. All the circuitry located within a tenant space shall be protected by overcurrent devices located within that tenant's electrical panel. Usually, the panel for a particular dwelling unit is located within that dwelling unit. Sometimes the panels for both tenants are located within a common utility room that is accessible to both tenants.
- E. Electrical Penetrations in Fire-Rated Assemblies:
- I. Electrical Boxes in Fire-Rated Ceilings: One metal electrical box not exceeding 16 square inches in area is permitted for light fixtures in each 90 sq. ft. of ceiling area. Nonmetallic electrical boxes are permitted provided such boxes are listed for use in fire resistant assemblies and are installed in accordance with their listings.
 - II. Electrical Boxes in Fire-Rated Walls: Openings not exceeding 16 square inches are permitted provided the total area of such openings does not exceed 100 square inches for any 100 sq. ft. of fire resistant wall area. The wall board must be cut so that the clearance from the electrical box does not exceed 1/8 inch. Outlets on opposite sides of the same wall shall be separated as follows:

- a. By a horizontal distance of not less than 24", or
- b. By a horizontal distance of not less than the depth of the wall cavity when the wall cavity is filled with cellulose loose-fill or mineral fiber insulation, or
- c. By molded fire blocking made of an approved fire-resistive material listed for such applications and installed according to manufacturer's installation instructions (an example are Puddy Pads)

F. General Wiring Requirements: The electrical wiring shall comply with the N.C. Electrical Code. The number and size of electrical circuits provided within each dwelling unit shall comply with the Electrical Code. All electrical work shall be performed by a N.C. licensed electrical contractor. Branch circuits that supply 125-volt, single-phase, 15- and 20-ampere outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit-interrupter listed to provide protection of the entire branch circuit. Lighting fixture outlets are included along with plug outlets in the definition of the receptacle outlets that are required to be AFCI-protected in bedrooms.

G. Smoke Detectors: A minimum of one 120-volt permanently connected smoke detector shall be installed in each sleeping room, outside of each separate sleeping area in the immediate vicinity of the bedrooms and on each additional story of the dwelling, including basements and cellars but not including crawl spaces and uninhabitable attics. All detectors shall be interconnected such that the actuation of one alarm will activate all alarms within that individual dwelling unit and shall provide an alarm that will be audible in the sleeping areas. All detectors shall be approved and listed and shall be installed in accordance with manufacturer's instructions. The required smoke detectors shall receive their primary power from the building wiring and when primary power is interrupted, shall receive power from a battery. Wiring shall be permanent and without a disconnecting switch other than those required for overcurrent protection. Whenever an addition, alteration or repair to an existing dwelling unit requires a building permit, smoke alarms shall be installed within the existing portion of the dwelling unit. If one or more sleeping rooms are added or created, then smoke alarms shall be installed. Where alterations and repairs do not result in the removal of existing interior wall or ceiling finishes, smoke alarms are permitted to be solely battery operated and are not required to be interconnected.

3. PLUMBING CODE ISSUES:

A. Licensed Plumbing Contractor: All plumbing work shall be done by a N.C. licensed plumber. The general contractor should advise the plumbing contractor of the location of any fire-rated walls and floor/ceiling assemblies.

B. Plumbing Penetrations in Rated Assemblies: Any penetrations in the fire resistive wall for floor/ceiling assembly by plumbing piping shall be protected with an approved firestop system to provide a minimum 1-hour fire resistance. Any PVC or CPVC piping is protected by fire collars or wrap strips which incorporate an intumescent material. In the extreme heat of a fire condition, the intumescent material will expand to fill the hole created when the plastic pipe melts. Metallic pipe penetrations may be firestopped with approved fire-rated

caulks, installed with backing and sufficient annular space to accommodate the caulk per an approved firestop design.

For detached ADUs only:

- C. Metering of Water Service: Separate metering of water service for each dwelling unit is not required and at the owner's discretion.
- D. Separate Sewer Taps are required for detached ADUs.

4. MECHANICAL CODE ISSUES:

- A. Licensed Mechanical Contractor: All HVAC work shall be done by a N.C. licensed mechanical contractor. The general contractor should advise the mechanical contractor of the location of any fire-rated walls and floor/ceiling assemblies.
- B. HVAC Penetrations of Fire-Rated Assemblies: Any ductwork installed within fire-resistive walls, or floor/ceilings shall be approved for such installations. Approved fire dampers shall be installed at penetrations of any fire-rated wall assemblies. Approved ceiling dampers shall be installed at penetrations of any rated ceilings.
- C. Return Air – Not Permitted To Be Shared Between Separate Dwelling Units: A single forced air system may not serve two separate dwelling units because return air from one unit would be
- D. introduced into the environment of the other unit. Discuss this issue with your mechanical contractor. Often, the larger, primary dwelling unit will have a forced air HVAC system, while the smaller accessory dwelling unit will have an alternate heat system such as electrical baseboard, direct vent gas unit heaters, or central return furnace.
- E. Gas Meters: Separate metering is required for gas utilities serving each dwelling unit. Is optional and up to the owner's discretion.

4. PARKING

If an off-street parking space is to be added, a grading permit will be required as well as zoning review. Refer to the application process above for timing.