

Housewarming-Party House-Design Contest

As an attendee of [REDACTED]'s housewarming party, you are strongly encouraged to participate in an informal house-design contest. Your design must be original to you. You can bring a pre-drawn design if you want to, but it is preferred that you draw your design with pencil and paper while at the party.

The winners will be judged by instant-runoff voting: each attendee will vote for his favorite design, his second-favorite design, and his third-favorite design on a single ballot.

There are no criteria for voting. You can submit a barebones floor plan or a full set of multi-view drawings. Designs will not be disqualified for failure to adhere to code.

Code Requirements and Common-Sense Recommendations

ICC's 2024 IRC (International Residential Code), IPMC (International Property Maintenance Code), and IZC (International Zoning Code) are available for free perusal at codes.iccsafe.org. This helpful educational handout covers only normal houses (technically including duplexes). If you really want to, you can submit a design for an efficiency unit, a triplex, or an apartment building, but such buildings are outside the scope of this document, and for information regarding them you will have to check the codes listed above.

Other information in this document was distilled from Wiley's *Architectural Graphic Standards for Residential Construction and Planning and Urban Design Standards*, and from NKBA's *Kitchen Planning Guidelines*.

Definition of Dwelling Unit

A house **MUST** include provisions for living (a living room), sleeping (bedrooms), eating (a dining room), cooking (a kitchen), and sanitation (bathrooms).

A house **SHOULD** include provisions for laundry (a laundry room) and utilities (a utility room).

A house **MAY** include provisions for circulation (corridors) and storage (closets).

A house with area ≤ 1200 ft² can be called a "small house". A house with area ≤ 400 ft² can be called a "tiny house".

Living and Dining Rooms

A living or dining room **MUST** have width ≥ 7 ft.

A living or dining room **SHOULD** have width ≥ 8 ft, in order to accommodate a 2-ft table and two 3-ft areas for chairs.

Occupants	Minimum area (ft ²)			
	Living room		Dining room	
	Mandatory	Recommended	Mandatory	Recommended
1–2	120	"	—	"
3–5	120	"	80	"
6	150	"	100	"
≥ 7	150	22 per occupant	100	15 per occupant

The numbers in the table represent 15 ft² for each person sitting at a table and 7 ft² for each person sitting without a table.

Combining the living room and the dining room into a living/dining room is permitted.

Bedrooms

A bedroom **MUST** have width ≥ 7 ft, area ≥ 70 ft², and area ≥ 50 ft² per occupant.

Typical bed sizes include twin XL (40 inches \times 80 inches), queen (60 inches \times 80 inches), and king (76 inches \times 80 inches). Don't forget that loft, double-bunk, and triple-bunk beds exist.

A rectangle with width 4 ft and depth 2 ft can represent a shelving unit, a wardrobe, or a desk. In front of a desk, leave 3 ft of space for a chair.

Kitchen

Normal kitchen-countertop depth is 2.5 ft. Normal distance between opposing kitchen countertops is 5 ft.

The National Kitchen and Bath Association's *Kitchen Planning Guidelines* are a bit complicated, but a reasonable summary of them is that a kitchen SHOULD have perimeter ≥ 20 ft at the fronts of countertops and appliances (e. g., a 10 ft \times 10 ft U-shaped kitchen).

Bathrooms

Reasonable bathroom dimensions include 5 ft \times 10 ft (with the door on any corner) for a full bathroom with "type B" accessibility, 5 ft \times 8 ft (with the door on any corner) for a full bathroom with no special accessibility, and width 4.5 ft \times depth 4 ft (with the door at either end of a long side) or width 6 ft \times depth 3 ft (with the door at the middle of a long side) for a half bathroom.

A dwelling unit SHOULD have ≥ 1 bathroom for every four bedrooms.

Closets

A non-walk-in bedroom closet SHOULD have depth ≥ 2 ft and width ≥ 3.5 ft per person. (Remember that closets can be replaced with wardrobes.)

A U-shaped walk-in bedroom closet SHOULD have width ≥ 6.5 ft, accounting for a 2.5-ft aisle and two 2-ft areas for shelves and hangers.

Egress

At least one exterior door MUST have width ≥ 36 inches. All doors SHOULD have width ≥ 32 inches.

A corridor MUST have width ≥ 3 ft and SHOULD have width ≥ 4 ft.

Windows

A living, dining, or sleeping room MUST have windows and skylights with total transparent area $\geq 8\%$ of floor area and total openable area $\geq 4\%$ of floor area.

A bedroom MUST have a window serving as an emergency escape and rescue opening, with openable width ≥ 20 inches, openable height ≥ 24 inches, and openable area ≥ 5 ft² on a ground floor or 5.7 ft² on a higher floor.

I normally satisfy these requirements with 4 ft \times 4 ft sliding windows.

Stairways

Stairway slope MUST $\leq 77.5\%$, representing maximum riser height of 7.75 inches and minimum tread depth of 10 inches.

Stairway width MUST ≥ 3 ft and SHOULD ≥ 4 ft. Stairway landing depth MUST \geq stairway width.

Typical distance between floors is 9 ft, representing 8 ft from floor to ceiling and 1 ft from ceiling to floor.

Walls

Typical wall thickness is 4.5 inches (0.375 ft), representing a 3.5-inch stud (nominally a 2 \times 4) and two 0.5-inch layers of drywall or exterior sheathing.

Landscaping

Typical sidewalk width is 4 ft.

A house MUST have ≥ 2 off-street parking stalls. A parking stall MUST have width ≥ 9 ft and depth ≥ 20 ft.

Typical garage interior width is 2.5 ft + 9.5 ft per car, representing 7-ft cars and 2.5-ft aisles.

Typical garage interior depth is 21.5 ft, representing a 19-ft car and a 2.5-ft aisle.

Utility/Laundry Room

Dimensions of 5 ft × 10 ft suffice for a washer, a dryer, a circuit-breaker box, and a water heater. If you choose to use central HVAC rather than a mini-split heat pump, larger dimensions may be required.