

Guest House Requirements

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High Level

This design is for a small house that will be built in the backyard of a main home as a secondary dwelling or guest house for use by a retired couple.

Goals

It has four over-arching goals:

1. Super energy efficient
2. Universal Design or ADA compliance
3. Bright and Airy
4. Small and compact

Constraints

The primary constraints are:

1. 800 sq ft maximum
2. Single story on slab
3. Kitchen + Living Room + Bathroom + Bedroom (minimum)
4. 5:12 roof pitch
5. Vaulted ceiling in living area; flat over bedroom/bathroom
6. Largely rectangular; Oriented East-West
7. Wrap-around covered porch covering North, West, and South facades
8. Must be visually "compatible" with the main house

Energy Efficiency

This house should be extremely energy efficient, to the point that it might even be a "passive" home if that was possible in Arizona (it's not). Getting to "net-zero" shouldn't be a problem, though.

Climate

We live in Phoenix, Arizona -- known as "The Valley of the Sun". It is extremely sunny year round. Summer temperatures peak at 115-120 F (43-48 C) with overnight lows 80+ F (27+ C). Winters, on the other hand, are short and relatively mild. That is to say, the need to cool a home dominates any energy calculation with the need to heat almost an after-thought.

Again, the need to block the sun and to keep out the heat is overwhelmingly the biggest goal!

The emphasis on cooling means that it's physically impossible for this house to be truly "passive".

Siting

This house shall be situated in the rear of the 3/4 acre backyard of the primary house. It shall be oriented on the East-West axis with the "front" of the house facing North.

There are no trees to the North, West, or South that are close enough or large enough to offer any shade. There are trees on the East that can provide some amount of shade in the morning.

Windows

The front (or North) wall of the house shall be largely covered by glass doors, which can be retracted to create "indoor/outdoor" space. They may be patio doors, French doors, or folding doors (budget constrained).

The South wall shall have smaller windows, which must be completely shaded from the Sun from March through October.

The East and West walls should have either no windows at all or windows that have innovative filtering to block nearly all direct sunlight.

Shading

There shall be a deep wrap-around covered porch completely covering the North, West, and South walls. There is no porch on the East wall as there shall be a driveway there.

There shall be electrical connections and mounts capable of supporting multiple ceiling fans on each porch, along with ample lighting.

Roof

The roof will likely be metal. It never snows and rarely rains so solar reflectivity and emissivity matters more than anything else. It must have a 5:12 pitch to match the primary house, though -- at least on the South side. The North side of the roof may have a steeper angle.

Size

The *maximum* size shall be 800 sq ft, but the preferred size is closer to 650-700 sq ft. The key is that this house should be no bigger than it needs to be and to try for "smaller" as much as possible.

Universal Design

The house shall be designed from the ground up with Universal Design principles. These used to be called ADA requirements.

The retired couple that will be living here are not infirm in any way, but if such a situation arises in the future, the house should adapt with either no modifications or very minor ones.

The following are some special considerations.

Flat

Everything should be as flat as possible. That means no stairs of any sort. The house shall be on a slab and that will be on the same plane as the driveway and porches, allowing for direct access without going up or down.

Doors

All doors should be 36" wide or wider (if pocket door). The exterior doors should have no step; largely flush with the floor.

Bathroom

The bathroom probably is the most regulated part of any ADA design, along with the kitchen. This bathroom will have a walk-in shower as its core, with no bath tub.

In general, this design should follow the NKBA standards: <https://cloud.chiefarchitect.com/1/pdf/nkba/nkba-planning-guidelines.pdf>

Kitchen

Much like the bathroom, the kitchen should follow the NKBA standards.

Bright and Airy

Small homes have a tendency to feel claustrophobic, since everything is so close together. The goal for this house is to feel much bigger than it actually is.

Ceiling

The ceiling should be vaulted in the shared living space, which should include the living room and kitchen.

The roof does need to have a 5:12 pitch facing South, but it doesn't necessarily have to be symmetrical. The peak doesn't have to be centered on the house. One constraint: the ceiling peak cannot exceed 15 ft (the guest house roof cannot be higher than the primary house roof).

The bedroom(s) and bathroom should have a flat roof -- maybe 9 ft high instead of the standard 8 ft?

Space

The living room and kitchen must be in an open floor plan. Beyond that, the feeling of space will largely come from the Universal Design factors, which dictate how far apart things need to be.

Indoor/Outdoor

Regardless of the layout of the rest of the house, the living room and bedroom should be on the North wall, both of which should be primarily made up of "moveable" glass (patio door; French doors; folding doors; etc).

Other Considerations

"Compatible" With Primary House

Since this is a guest house, the town planning committee has required that the guest house be visually "compatible" with the primary house. This is a subjective decision, so there is some amount of flexibility.

A few relatively static requirements have been mentioned in earlier sections. That is, it must be a single story; 5:12 roof (visible); and cannot be bigger than the primary house in any dimension. The only dimension that could possibly be bigger is the roof height and in that case, it's somewhere around 16 ft.

Other bits are more flexible. We don't particularly care for how our existing house looks so we're willing to update the primary home to more closely match the guest house.

Bedroom(s)

The house needs to have at least one "master" bedroom, but if another room can logically fit in the design, then it's worth considering. The second room doesn't have to be an official bedroom -- it may be considered more of a "bonus room".

Closets should be considered mostly a waste of space. Free-standing wardrobes make more sense.

Bathroom Access

This isn't a hard requirement but will be a "nice to have" -- if the bathroom could simultaneously feel like a master bathroom and a shared bathroom. That is, the bathroom must be directly accessible via the shared living area (no going through the bedroom to get to it) but if it could be situated such that with a judicious closing of some kind of door, that it would be accessible from the bedroom without being in view of the shared living area... that would be ideal.

Laundry

There must be a place for a stackable washer/dryer combo, although a separate room isn't necessary.

Overall Design Aesthetic

The overall aesthetic should lean more towards "contemporary", "transitional", or "modern". There are several attached images and links with compatible design ideas.

The exterior design may be dominated by lines. That is, the leading siding choice is wide horizontal boards, which will give a strong sense of horizontal lines. The roof may have a "slate" look, which also gives a strong horizontal line component. This should be contrasted with some strong vertical elements. Maybe shading? Maybe just decorative?

The exterior design is somewhat limited in that whatever notable elements are there must also be applied to the primary house.

The interior design has no such limitation. It should be unabashedly contemporary.

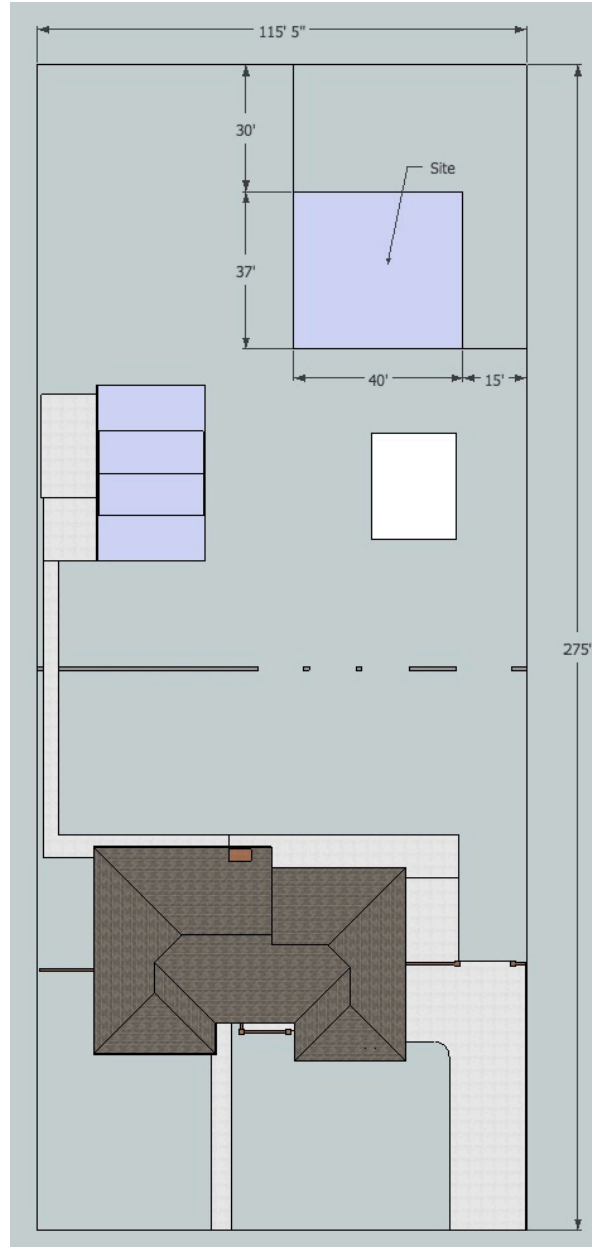
The Lot

The lot is located at [REDACTED]

Coordinates are [REDACTED]

Lot Dimensions

The guest house will be located somewhere in a roughly 40 ft x 40 ft space situated 30 ft from the North property line and 15 ft from the East property line.



Primary House

Here is a model of what the primary house looks like. It's a model and not a photo since the extensive trees out front make it impossible to get a clear shot of the actual house. The model shows the structure of the house, which is more important than what it looks like anyway.



Design Inspiration

The following are existing designs that have inspired us to some degree. Each has some element that corresponds to the above requirements.

Truoba Plans

We liked so much about these plans that we were willing to try a custom design from the same designers.

<https://www.truoba.com/house-plans/tm-615/>

Bright and airy, with a very well done interior. It's far too modern to pass the planning board and is too big, but conceptually it was the first plan that really piqued our interest.

<https://www.truoba.com/house-plans/tm-117/>

A wrap-around porch and lots of big windows / doors to the North.

<https://www.truoba.com/house-plans/tm-217/>

Conceptually similar to the Mini 117 but with a more interesting floor plan.

Leap Adaptive Plans

The "feeling" of these plans captures almost perfectly what we are going for... but practically have too much wrong to not be able to adapt them. If we can get the same feeling with the custom design as we get from the overall look of these, though, then it's a win.

<https://www.leapadaptive.com/hummingbird-h1-model>

Incredibly open, with a clear feeling of "indoor/outdoor". Nice modern design. Far too small, though.

<https://www.leapadaptive.com/hummingbird-h2>

An adaptation of the h1 so it shares the same positives. The master suite is nice, but somewhat wasteful of space.

<https://www.houseplans.com/plan/2500-square-feet-3-bedroom-3-bathroom-2-garage-contemporary-modern-40577>

A further adaption of the base plan. We like the concept of the breezeways in this one, more than anything. Otherwise it's far too big.

Exterior Design Elements







Interior Design Elements





