

BACKYARD BUILDING: SAVING THE PLANET ONE ADU AT A TIME



A Primer for Accessory Dwelling Unit Pre-Design

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Introduction

Congratulations on your sojourn into the world of Accessory Dwelling Unit design and construction! This is a complex but rewarding endeavor. You will be increasing the functionality of your property by increasing the living area so that you can accommodate relatives or family members, or create a rental unit that will provide income long into the future.

If you are reading this after seeing the companion videos, you are lucky: this text document is much more comprehensive than the videos. The videos are very basic. However this document could easily become a thousand-page manifesto. I am making this available (in short form) to help get you started with the process based on many conversations that I have had and have seen on the internet, specifically regarding how to get started. I am calling this Pre-design.

I see many discussions online regarding how to get started building an Accessory Dwelling Unit (ADU). Many people attempt to design it themselves or start by hiring a “builder” who includes design. While this building type is probably the simplest habitable space that you can build short of a one-room addition, it still has a number of complex requirements and limitations, many of which vary from city-to-city.

I am located in Los Angeles, so most of the suggestions in this publication are from the perspective of a southern California climate and lifestyle. My goal is to get you started on the right track. This can be a fun activity or a stressful activity, and will probably be both. Early, thorough preparation can make for smoother sailing during the process.

This document will focus on beginning the pre-design process and answering some questions that might seem like impediments to the actual design of the building. If, at any time, you feel overwhelmed with the process, take a break and step back for a day or two. Let your brain clear. When you return, you might find a new avenue to explore, or you might decide you need professional help. It is often beneficial to hire a professional who deals with these issues every day, just as you would hire a dentist to deal with dental surgery. And while I'm not equating the pain involved in starting an ADU with the pain that can occur due to untreated issues with your teeth. I'm making the point that a professional has the training, experience, and tools to solve the problems that require more than aspirin.

I am keeping the language in this document free from architectural jargon as much as possible, but the nature of the industry will require use of some specific terminology, so I include a glossary.

Feel free to concentrate on only the chapters that interest you. However, you will rapidly become aware of the fact that many aspects of ADU design affect many other aspects, and nothing can be considered on its own.

Two quotes come to mind:

“You don't know what you don't know.”

and

“Some people know just enough to be dangerous.”

PART I:
ALLOWANCES,
REQUIREMENTS,
DESIRES

CHAPTER 1: What am I Allowed to Build?

You can find all sorts of guides for building an ADU on the internet with just a simple search. There are many websites and publications that try to explain the process, each from a slightly different perspective. Many of these sites have assembled information that will help you with the planning and design of the ADU. Dip your toe into the many sources and you will find that the subject very quickly becomes very complex. The State of California basically says you can build an 800 s.f. accessory dwelling unit on your property, no matter what size or what zone your property is in. To that end, the parking requirements have been relaxed and the two-car covered stall requirement will be waived if you convert your existing two-car garage into an ADU. At this point in time, California has deemed the need for additional housing more important than the need to require off-street parking.

However, all this is a little deceptive, because there are certain restrictions of local jurisdictions that can further limit the size.

This chapter gives an example of how to determine setbacks for detached accessory units in Los Angeles using the Inter-departmental correspondence chart. This is a very specific example, but it will open the door to answering other similar questions.

There are many ways to get the requirements for building an ADU in Los Angeles, and none of them are exhaustive and complete, I'm sad to say. Even the data that I will impart is given with the caveat that you should check with your local jurisdiction for possible recent changes to the code or interpretations. The chart referenced here has a lot of information on straightforward ADU restrictions, but, as everything in life, there are grey areas and exceptions to the rules.

Start by finding going to ladbs.org/adu online. This is the source for much information and almost as much consternation with regard to ADUs, JADUs, and Moveable Tiny Houses. Click on "Ordinance and Interdepartmental Memo," then click on "[Implementation of 2019 Accessory Dwelling Unit \(ADU\) Ordinance and State ADU Law](#)" to get to the document referenced below.

In the Inter-departmental Correspondence from the city of Los Angeles, you'll see a chart called "Table 1: Detached Accessory Dwelling Units and Movable Tiny Houses." If you look at the first heading, it says Detached ADU Options. Directly below that, you find the description of your ADU that's relevant. For the sake of this example, we'll say we are converting an existing building on the property into an accessory dwelling unit. Let's say it's a garage or a shed.

Table 1: Detached Accessory Dwelling Units and Movable Tiny Houses¹

	Detached ADU Options (located in an accessory building)				Movable Tiny House per Ordinance
	Conversion of Accessory Building per State Law	800 SF max New Construction per State Law	1,200 SF max per Ordinance	Two ADUs per State Law	
Required Main Use on the Lot	Existing single-family dwelling	Existing or proposed single-family dwelling	Existing or proposed single or multifamily dwelling	Existing multifamily dwelling	Existing or proposed single or multifamily dwelling
Applicable Code Section(s) for Listed Option	CA Govt. Code 65852.2(e)(1)(A)	CA Govt. Code 65852.2(e)(1)(B) and applicable part ² of LAMC 12.22 A.33 (c)-(d), (g)	LAMC 12.22 A.33 (c)-(d)	CA Govt. Code 65852.2(e)(1)(D) and applicable part ² of LAMC 12.22 A.33 (c)-(d), (g)	LAMC 12.22 A.33(f) and those in (c) not applied solely to buildings and structures
Number of ADUs Allowed by Option	1 per Lot	1 per Lot	1 per Lot	up to 2 per Lot	1 per Lot (limit of one approval per year)
Additional ADU/JADU Options for the Lot ³	Plus 1 JADU (in single-family zones)	Plus 1 JADU (in single-family zones)	Plus 1 JADU (in single-family zones)	Plus attached ADU(s)	Plus 1 JADU (in single-family zones)
Very High Fire Hazard Severity Zone/Hillside Area Restriction ⁴	No	Yes	Yes	Yes	Yes
ADU Size Limit	None, plus 150 SF max addition for ingress/egress	800 SF	1,200 SF ⁵	None	150 SF min to 430 SF max
ADU Height/Story Limit	None	16 feet	2 stories, plus zoning height limit if new building or addition	16 feet (even for conversions of existing space)	2 stories
ADU Minimum Side and Rear Yard Setbacks	None	4 feet ⁶	4 feet if new building ⁵ or addition	4 feet (even for conversions of existing space)	4 feet
ADU Automobile Parking ⁷	None	Yes (see LAMC 12.22 A.33(c)(12))	Yes (see LAMC 12.22 A.33(c)(12))	Yes (see LAMC 12.22 A.33(c)(12))	Yes (see LAMC 12.22 A.33(c)(12))

¹ The information shown in this table is only a summary of the key provisions for each option. Refer to the listed code section(s) for all the required development standards and regulations.

² Except for those provisions which do not allow such an ADU otherwise in compliance with all applicable provisions in Government Code Section 65852.2(e) and LAMC 12.22 A.33(g).

³ Refer to the "Combinations of ADUs and JADUs" subsection for details regarding when more than one ADU/JADU option is allowed on the same Lot.

⁴ Exceptions provided in LAMC 12.22 A.33(c)(4)(i) and (ii).

⁵ Unless limited by other applicable zoning rules such as floor area limits for the Lot, Lot coverage limits, or location of accessory building regulations; however, standards that limit floor area or Lot coverage may not preclude an ADU that is up to 800 square feet maximum, if no more than 16 feet in height and with 4 foot minimum side and rear yard setbacks per LAMC 12.22 A.33(c)(1)(iii).

⁶ No additional setbacks are required for a structure that is constructed in the same location and to the same dimensions as an existing structure per LAMC 12.22 A.33(c)(8).

⁷ One space is required for an ADU unless 1) located within ½ mile walking distance from a bus or rail stop, 2) one block from a designated car share pickup or drop off location, 3) within an applicable historic district, or 4) when an ADU is fully contained within an existing accessory structure. In addition, replacement parking is not needed when a garage, carport or parking structure is demolished in conjunction with ADU construction.

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So if you look down the left hand side, the information that we are trying to gather is "Side Yard and Rear Yard Setbacks." You'll see that row, and then if you check the

intersection of that row with the “Conversion of Accessory Building per State Law” column, you’ll see “None.” There are no requirements for additional setbacks if you have an existing building that doesn’t comply with current setback requirements.

Let’s run through another example. In this case, we’ll use and 800 s.f. accessory dwelling unit, New Construction. So you want to build a new structure in your back yard that’s 800 s.f., which is allowed by the state.

If you look at the “800 s.f. max New Construction per State Law” column, where that intersects the “ADU Minimum Side and Rear Yard Setbacks” row, it says “4’”. So, in this case, you’re required to have a 4’ setback from the side property line and the rear property line.

Now, if you notice, it also has a reference to a note at the bottom of the page, which is Note 6. Note 6 says “No additional setbacks are required for a structure that is constructed in the same location and to the same dimensions as an existing structure per LAMC 12.22 A.33(c)(8).” This sounds like it is clarifying the case where you have decided to rebuild an existing structure (which could have been destroyed by fire or termites, for example) in exactly the same location as an existing structure. However, I would not take this a “gospel” without confirming with the building department.

This also brings up the topic of why these charts and regulations are never “cut and dried.” There are always “grey” areas. You always need to check your local government agency because there are always ordinances that are being changed, ordinances that are being written, so make sure to confirm any of this information with your local jurisdiction prior to proceeding.

You’ll notice that this chart is good for a lot of other things. It tells you the number of ADUs allowed, ADU size limit, height limit, all kinds of things are in this chart if you just make use of it.

Other factors:

Many ADUs are being built in back yards next to properties where no other ADUs exist. Be aware, however, that your neighbors could build an ADU in a month or a year and negate your carefully planned views. Be sure not to depend on location of neighbors property for your ADU desirability.

An interesting factor for architects in the design of ADUs, since few of them require parking, is that any facade can be the front. There is more flexibility in terms of the exterior design and orientation than when designing a typical single family (primary) residence. Views from the ADU to the neighbors should be considered, but also views of the ADU should be considered.

Be aware, also that other factors can affect where you can build. There may be easements over the property which you have to stay clear of or get an encroachment permit. Building closer than five feet away from the property line will require the wall to be fire-rated, which is possible but can be tricky to accomplish.

CHAPTER 2: What am I Required to Build, Whether I Like It Not?

If you decide to build an ADU or other habitable structure on your property, certain government agencies can require you to build in a certain manner and according to established rules and regulations. The two primary agencies are the Planning Department and the Building Department (Your jurisdiction might have other names for these departments).

Per LACITY.org, “The [Department of City Planning](#) is charged with the responsibility of preparing, maintaining, and implementing a General Plan for the development of the City of Los Angeles. The General Plan consists of the Framework Element, which provides overall guidance for the future of the City and other citywide elements including State mandated elements such as the Transportation, Housing, Open Space, and Land Use Elements.

The Planning Department implements the General Plan utilizing a variety of tools through the application of zoning regulations. Traditional zoning, Specific Plans, Overlay Districts, and special use permits, such as Conditional Uses and Variances, all regulate the use of land in the City.”

The Building Department monitors the construction of the built environment with regards to construction standards and life safety. A Building Permit is usually issued by the Building Department after review of construction documents by the Planning Department, the Building Department, and other relevant agencies.

Habitable buildings are required to provide protection from the weather, sanitation, heat to warm the air, light and ventilation, structural integrity, and fire safety, for the inhabitants. The various government agencies review construction documents for compliance with city codes and ordinances to insure that all the minimum requirements are met.

The Bureau of Engineering can require certain upgrades to your property if you are doing construction, and often takes this opportunity to require you repair the sidewalks and driveway.

Chapter 3: What do I Want to Build?

Finally, the question that begins to touch on the more fun aspects of the project: What should we include in the ADU? If you engage an Architect, he/she will typically start by creating a “program” in conjunction with the Owner. Even if you don’t engage an Architect, a program is a good place to start. This program is a carefully conceived and discussed document listing desires and needs of the Owner for what the project should provide, based on the Owner’s budget. The program might include primarily functional requirements, but can also include aesthetic requirements. Some particularly environmentally aware clients use it to list “green” building requirements that they would like to include in the building.

A program with “green” building elements might include:

- Energy-efficient lighting

- Upcycling
- Sustainable materials
- Recyclable materials
- Reduce waste during construction
- Dutch door
- Slabs of wood from old barns
- Furniture reuse
- Use tin ceiling as tile
- Use sheet metal cut into squares as diamond shingles, interior or exterior
- Mix old with new
- Solar Panels
- Water collection
- whole-house fan
- flow-through ventilation
- paint colors: using warm white paint to make a space feel warm and inviting without turning on many lights
- motion sensor lights
- Blackout curtains and UV window film
- Dual-glazing
- Passive solar design
- Shade trees to reduce energy consumption
- Tankless water heater

...as well as the number of bedrooms, bathrooms and other rooms.

It can also include aesthetic considerations such as

- Fung Shue
- Design to make a small space seem bigger
- Mirrors
- long sight lines
- use few materials
- Open doors onto useable porch
- Concealed light sources

Your program will be individual to you and should not be taken lightly. It should be the basis for all future design decisions.

Aesthetics are as important as function! If you aren't happy and content everyday, something was done wrong or not addressed in the early phase of the project. You will find more about programming and the phases of an architectural project in Chapter 6.



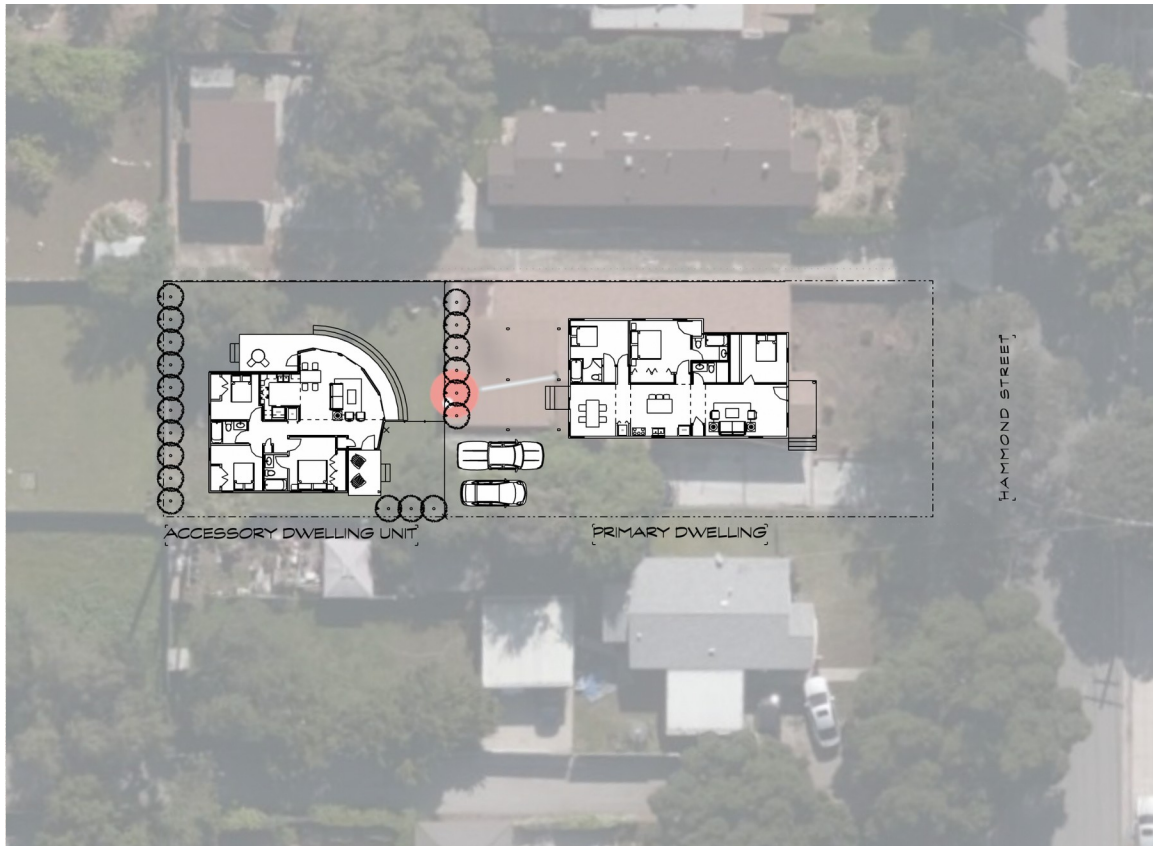
PART II: FAQs ABOUT GETTING STARTED

This section covers several topics relative to getting the design started. This is not a comprehensive “How-To” manual for designing or building an ADU. These issues often seem like considerable hurdles to overcome. But there are many people who have dealt with these issues before you, so don’t think you have to go it alone. I list a few ideas to get started. In many cases, the answers just lead to more questions, but “ya gotta start somewhere!”

CHAPTER 4: Where Should I Locate an Accessory Dwelling Unit on my Property?

Where you might want to locate your accessory dwelling unit on your property: There are four major factors that I think have an influence on the location. We have already discussed government agency restrictions. Government agencies can tell you how far away from property lines you can be and be and how far away from other buildings on the property. For example, Los Angeles only requires 5' clearance from the ADU to another building on the property, even though two free-standing buildings (not ADUs) require 10' clearance between them. Building Department restrictions: A structure closer to a property line than five feet will require

a one-hour fire rating. Although this is possible, it might make more sense to stay five feet away, especially if you have a small lot or other restrictions.



Cost

Bringing electricity or natural gas or both to your unit can have a significant impact on the cost of construction. You need to take it into consideration because the further you are from a main line, the more expensive it can be for trenching (digging trenches for the pipes, etc.). Cost is also influenced by site conditions such as topography. Extreme variations in the slope of the land can make it difficult to construct the ADU. The same can be said for existing obstructions or the proximity to existing nearby buildings, which will need to be avoided, thus affecting the layout of the and cost of the building and the complexity of the structure necessary to support it.

Energy efficiency can affect cost. Primary living areas facing south will inevitably lead to more south-facing windows, which allow more sun into the house and require more energy to cool the house. Sun shading devices can be added to south-facing windows, but intelligent room layout and building siting can avoid the need and expense for these.

Some cities require photo-voltaic panels on any new residential construction. Siting the ADU in such a way that it is not considered “new construction” will reduce the cost, due to the fact that purchasing a solar system can be avoided. One way to do this is to have the ADU attached to the house or an existing garage, so it is not considered “new construction”.

Siting the ADU in such a way that exterior spaces feel like extensions of interior spaces will save cost in a couple of ways: The first is that there is less money spent on the construction of the ADU itself, and the second way being that huge “impact fees” on larger dwellings may be avoided. In Pasadena, California, impact fees on a 750 s.f. ADU were \$25,000 less than impact fees on a 1000 s.f. ADU!

Of course, we are talking about short-term cost here. It may be more economical in the long run to spend the extra money early on in order to get more income on a rental unit with more bedrooms.

Function

The direction and location of the front door makes a difference to the arrangement of the rooms inside the accessory dwelling unit. Some cities have requirements regarding which way the front door can face relative to the front door of the primary dwelling unit on the site. Keeping “public” spaces together and separate from bedrooms contributes to the livability of the dwelling and the privacy of the occupants when they need it.

Privacy

Privacy is affected by location and direction of the front door, location and direction of windows, and also by lighting. It's best not to have lights that don't shine onto the neighbors or shine onto the primary dwelling unit. But if you have to, there are mitigating factors: you can use shades on the lights and you can use timers and light sensors to control when the lights are actually "on". Also, windows can have the bottom half tinted or obscure to add privacy, if no other option exists for positioning them away from unfortunate paths or adjacent dwellings.

CHAPTER 5: How Long Will it Take to Achieve Positive Cash Flow if I Rent the ADU?

Renting an ADU can be a great source of supplemental income. This Chapter examines how long will it take to achieve positive cash flow if you use cash to build your ADU versus if you get a 30-year loan. I'm not a banker, I'm not a lawyer, I'm not a realtor (disclaimer), but I can give you some comparative numbers on how long it will take to recoup your money and start a positive cash flow if you use cash versus acquiring a 30-year loan for an accessory dwelling unit, in order to help you make a decision.

I have an Excel spreadsheet set up just to do some calculations and I have an amortization schedule calculator from creditkarma.com.

Let's assume that you will spend \$150,000 construction cost and you're going to be getting \$1500 per month rental income. That gives you \$18,000/year rental income, so it will take 8.33 years to pay off or make back that \$150,000 initial expenditure.

$$12 \text{ months} \times \$1500 / \text{month} = \$18,000 / \text{year income}$$

$$\$150,000 / \$18,000 = 8.33 \text{ years}$$

This is enough to discourage anyone from investing in an ADU as a means of increasing income, especially millennials, who tend to move around more frequently. An ADU cannot be sold separately from the land and the primary dwelling unit.

Time to Recoup Investment in an Accessory Dwelling Unit

Cash Only			
Construction Cost	\$150,000		
Rental Amount	\$1,500 per month		
Income or Cash Flow	\$18,000 per year		
Time to Break Even (Const. Cost / Rental Amount Per year)		8.33	Years
With a 30 Year Loan			
Construction Cost	\$150,000		
Rental Amount Income	\$1,500 per month		
Income	\$18,000 per year		
Downpayment: 20% of \$150,000 Construction cost	\$30,000		
Loan Amount: Construction cost - downpayment	\$120,000		
Closing Costs Estimate: 3.5% of Loan Amount	\$4,200		
Total Amount out of pocket: Downpayment + Closing Costs	\$34,200		
Loan Amount	\$120,000		
Loan Rate: Estimate	4.50%		
Total Loan Payments (From Amortization Calculator)	\$218,888		
Loan Length	30 Years		
Principal and Interest	\$608 per month		
Taxes and Insurance Estimate	\$300 per month		
Mortgage payment: Principal and interest and Taxes & Insurance	\$908 per month		
Cash Flow: Rent minus Mortgage Payment	\$592 per month		
Cash Flow	\$7,104.00 per year		
Time to Break Even: Out of Pocket / Annual Cash Flow		4.81	Years

However, there is a much more attractive alternate, which is getting a construction loan. This almost seems counter-intuitive, but follow along and discover the wisdom of using

other people's money to make money! With a 30-year loan, let's assume the same numbers: \$150,000 construction cost with \$1500/month rental income gives you \$18,000/year. Since you're going to be getting a construction loan, the downpayment is usually 20%, which is \$30,000. The loan amount is now \$120,000 instead of \$150,000. We're going to assume closing cost estimate of 3.5% of the loan amount, which is \$4200. So your total expenditure at the beginning of the process if you get a loan is \$30,000 (downpayment) + \$4200 = \$34,200 expense. The loan amount is \$120,000 instead of \$150,000, so we take that \$120,000 and put it into the amortization calculator.

Let's assume an interest rate of 4.5% for 30 years. This gives you a monthly principal and interest payment of \$608. There are 360 payments. Total dollar amount paid back for the loan is \$218,888.

Amortization Calculator



Amortization is the gradual reduction of a debt over a given period. Our amortization calculator will amortize (show the reduction) your debt (such as a mortgage) and display your payment breakdown of interest paid, principal paid and loan balance over the life of the loan.

It comes as a surprise to some that most of your initial payments on a loan are used to pay interest. For example, in a 30-year mortgage over 83% of your payments are used to pay down interest in the first year, while only 3% of your payments are used to pay down interest in the final year. This is the primary reason why little equity is built in the first few years of a mortgage.

Amortization Calculator

1	Loan Amount	<input type="text" value="\$ 120000"/>
2	Interest Rate	<input type="text" value="4.5"/> %
3	Number of Years	<input type="text" value="30"/>

Calculate

Your Amortization Summary

Base Calculations

Monthly Principal & Interest	Number of Payments	Total Payments	Original Loan Amount
\$608	360	\$218,888	\$120,000

So taking the monthly principal and interest payment of \$608 and including a taxes and insurance estimate of \$300/month: Your payment/month is now \$908. If you subtract that from the \$1500/month income that you're getting from the rent, then your cash flow is \$592/month. So at the end of a year, you've made \$7104 cash flow, and it will only take

4.81 years to pay off your initial expenditure, due to the fact that it was only \$34,200, not the entire \$150,000. At the end of 4.81 years, you begin to have positive cash flow, even though you won't pay off the loan for 25.19 years.

That's quite a remarkable difference: 8.33 years versus 4.81 years before you start achieving positive cash flow. There are a lot of numbers in a short space. I hope it's clear.

There are other options that are worth exploring: how does a 15-year loan compare to paying cash or getting a 30-year loan? Or does it make sense to pay off more principal each month on the loan in order to "own" the ADU faster? These would be interesting options to investigate!

CHAPTER 6: Should I Hire an Architect?

The simple answer is “Yes!” Although it may seem like your neighbor’s ADU is the perfect design for you to copy, there will likely be specific issues that affect your property differently than your neighbor. These could include:

- Size of the property
- Your program
- Easements
- Distance to public transportation
- Slope of the ground
- Views
- Other structures on the property

- Condition of existing walls and foundation which you wish to use
- Etc.

An Architect is accustomed to dealing with government agencies, building departments, general contractors, subcontractors, consultants, engineers. He or she does this for a living. An Architect is not just jumping on the bandwagon expecting to learn “on the job.” This is not a hobby. There are life-and-death implications if the project is not designed and built properly.



The phases of an architectural project are outlined here. Your project may or may not have all these phases, since the building type is relatively simple. They are: Programming, Pre-Design, Schematic Design, Design Development, Construction Documents and Plan Check/Permit.

Programming

Architects usually work from a “program” that is created by the client in conjunction with the architect. The program is simply a list of requirements and desires for what should be included in the project. It’s a “wish list” to a certain extent. It should be prioritized by what is critical vs items that are desirable but perhaps not critical, if they can be accomplished within the budget. The program can include items such as rooms that are required, sizes of functions, rooms and workspaces, equipment that must be accommodated, relationships between the required functions, such as proximity requirements, views or particular orientations, and even stylistic and aesthetic preferences.

Some clients require the latest energy saving strategies, or highly detailed woodwork, for example, whereas others might want a very inexpensive project which can be finished by the owner as more funds become available. Often, a client will collect a number of photographs from magazines or the web showing elements/colors that they like. This is quite valuable in giving the architect a direction. But some clients are open to suggestions of the architect as to what he thinks is appropriate for existing conditions and to accommodate the required functions.

It is not necessary for the client to propose where the functions occur or how the project is physically laid out: This is the purview of the architect during the design phases.

Pre-design

We visually survey the site. Site dimensions and restrictions are obtained from a variety of sources including the Office of the Tax Assessor and the local planning department. Applicable codes are reviewed to verify parking requirements, setbacks, height restrictions, etc. The information that is garnished during this phase is used as a framework within which Schematic Design is done.

If the project is a remodel or addition, existing conditions must be documented. This includes measuring the existing building and drawing the site and building to scale to be

used in the next phase. Any drawings of the site or the building that the owner might already have are often useful in this phase.

Schematic Design

This is a conceptual design phase. Various alternatives and layouts of the functions are investigated by sketching on paper. The schematic designs usually include several options within a range of budgets. The goal is to define the basic layout of all the functions and overall massing of the building, if relevant. Schematic design presentations usually include simplified floor plans and elevations. There will be several meetings where the client and architect discuss the alternatives and express preferences.

In some cases, the owner might not yet have a site, or the project might be tenant improvements of one sort or another. We often help the owner determine the “fit” of his program to a particular site by doing quick “space planning” of the program into several alternative locations.

Design Development

Once the Schematic Design is distilled down to a single design that is agreed to by the client and the architect, more detailed design is done. During this phase, all elements of the project are defined, from finish materials to window types to hardware. The “style” of the project is fleshed out aesthetically. The architect works closely with the owner to select items such as finishes and hardware that meet the owner’s approval. This phase usually overlaps the next phase to a certain extent, due to the method of design and documentation utilized by the architect.

Construction Documents

All elements of the design need to be communicated to the contractor. In order to do this, construction documents are produced. They show the contractor where everything goes in the project and how everything fits together.

Construction documents include architectural drawings that show walls, doors, windows, plumbing fixtures, millwork, light fixtures and outlets, and finishes, etc. They can also include drawings done by engineers for aspects of the project that are not usually done by the architect. Engineers can be retained for civil/site work, soils testing, structural, mechanical (air conditioning, heating), plumbing, and electrical work, as needed. Often in small projects, such as residential additions, mechanical, electrical and plumbing engineers are not required. These trades are usually done “design/build,” which means that the contractor will hire subcontractors who include the design engineering as part of their work.

Plan Check/Permit

When the drawings are complete, they are submitted to the local jurisdiction for “plan check.” The drawings are reviewed for compliance with all codes and ordinances by several agencies. These can include the planning department, building department, green building review, public works, health department (mostly for restaurants/commercial kitchens), industrial waste, sewer, and others. There can be other very specific approvals required from some local agencies as well, such as the California Coastal Commission or design review boards.

The plan check process can take from a day to many months depending on the complexity of the project, how busy the building department is, and how much you want to pay (Los Angeles, for example, has “expedited” plan check available for an additional fee). The agencies usually send back comments, commonly referred to as “corrections”, that must be addressed by the architect and his team of consultants, and re-reviewed by the agencies. The plans are then resubmitted to the city for review. Once the agencies are satisfied, the documents are approved for permit.

CHAPTER 7: I Can't Visualize How it Will Look

Hire someone who can provide a virtual model via 3d modeling or virtual reality!

Architects understand how elevations and floor plans translate into actual buildings; their clients usually don't. As an example, an established firm was fired from a project because the homeowner, who approved the plans, thought the roof looked like a fast food restaurant, even though the contractor had built per the construction documents.

So, what happened? There wasn't a physical or virtual three-dimensional (3d) model of the project. A 3d model, whether physical or virtual, is the best way to see how your new home will look when built. Software, today, allows for design review from multiple angles. Being able to work in 3d

helps clients get better involved in the design process and they enjoy the viewing experience and “walking through” the space before it is built. Don’t hesitate to ask about a 3d model before the commencement of your project.



CHAPTER 8: An Architect Charges Too Much

Typically, an architect's fee is calculated as a percentage of the project's total cost. Depending on the services provided by the architect, the rate can range from five percent to twenty percent. However, when you first start the design process for your project, it is difficult, if not impossible, to accurately determine the final project cost. During this initial time period (before a good estimate of the final project cost is possible) the architect may charge an hourly fee or a retainer. The retainer or hourly fee will be credited towards the total architectural fee once it has been determined. Monthly billing is the industry standard. Also, ask when payment is expected and the preferred method of payment, i.e. check, credit card, etc. Keep in mind that the architect's fee applies to all the costs of your

project. Examples of project costs are the construction budget as well as consultant fees, such as environmental impact studies or structural engineering fees. The most important thing about fees is complete transparency. Insist upon it.

Some “designers” or “builders” will include design services in a contract with you in order to secure the construction agreement. Be aware that they might not include all the services that you will get with an architect. Yes, I am biased, but I believe a good architect will provide value to your project in ways that you will only comprehend once you get started.

CHAPTER 9: How Can I Find a General Contractor?

An experienced architect should have a list of contractors they like to work with. Your architect should be able to help you choose the best contractor for your project. Always get multiple bids on the construction of your project – even if you already have a contractor. This is an industry standard and gives you better leverage at the bargaining table. Additionally, having a contractor during the design process ensures you will not be building more than you can afford.

CHAPTER 10: How Long Will it Take?

Seldom in my forty years as an Architect have I included a time schedule for how long it will take to get a permit in my Contract for Architectural Services. The reason is that there are too many variables over which I have no control. If consultants need to be hired, we are at the mercy of their workload. The same goes for how long the building department and other government agencies will take to review the drawings. It's impossible to predict. Just use as example the recent pandemic: Workforces were cut, people were working from home, and it became almost impossible to get any timely resolution or interpretation to questions. I have not had any complaints that my work took too long, because the client is well-informed throughout the design process.

ADDENDUM 1:

Ordinances

I've been a licensed architect in California since 1980. I've seen many ordinances come into existence or be modified due to changing knowledge gained over the years. A couple of fields where this is most noticeable

- Accessibility for the physically impaired
- Structural design for earthquakes

As a society, we have become more attuned to providing facilities for the handicapped via the Americans with Disabilities Act. Also, every time there is a significant earthquake, the existing codes are re-evaluated and revised to better withstand them in the future. Just recently, there was a horrific loss of life in Florida due to the collapse of a condominium building. Within two weeks there were reports that a task force is being assembled in order to determine if additional regulations can minimize the likelihood of another similar tragedy. This just goes to show how ordinances change over time.

During most of my career, the factor that drove how much floor area you could build was based on several things, one of which was whether you had enough parking on your site or access to parking. Now, suddenly, the two-car parking requirement for a single family dwelling is essentially out the window! The state has decided that providing housing is more important than making sure residents have a place to park their cars. The State has erroneously decided that if the SFD is within a half-mile of a public transportation stop, no parking is necessary on the site! Existing garages can be converted to ADUs. Never mind the fact that very few residents actually use public transportation. I predict that there will be a backlash when all the street parking is filled up and the residents all start complaining about no place to park! The moral of that story: Don't delay!

Ordinances may or may not be to your advantage in the future, and there's no predicting how long existing ordinances will be in effect.

ADDENDUM 2: The Architect Licensing Procedure

This section is provided just in case your mother always wanted you to become an architect.

Architects are licensed by the State in a process that tests their knowledge of numerous subjects that the state has deemed critical over many years of building design and construction.

Licensing procedure:

To practice architecture in the United States, you must have a license from a U.S. jurisdiction. The jurisdictions include the 50 states, the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands.

Each jurisdiction is responsible for regulating the practice of architecture within its borders. NCARB recommends and encourages national requirements for licensure by developing standards for the 55 licensing boards, which then issue licenses to applicants who meet their specific registration requirements.

How to Get Licensed

The licensure process will differ depending on your chosen jurisdiction, but the basics of initial licensure are similar.

1. Earn an architecture degree from a NAAB-accredited program, or meet your jurisdiction's education requirement.
2. Gain and document the required experience. All 55 U.S. jurisdictions accept the Architectural Experience Program®(AXP®), but some require additional experience.
3. Pass the ARE®. All 55 U.S. jurisdictions require you to pass the Architect Registration Examination®.
4. Meet any extra jurisdictional requirements. Some boards require additional experience or a location-specific supplemental exam before licensure.
5. Have your NCARB Record transmitted to the jurisdiction where you would like to be licensed. Before transmitting your Record, you should contact your board to verify its individual requirements.

ncarb.org

Glossary

ADU: Accessory Dwelling Unit

JADU: Junior Accessory Dwelling Unit

Setback: Limit of unbuildable area along a property line, usually determined by the zone that the property is located in.

Encroachment: Amount that the government agency will allow construction inside an easement.

Ordinance: Government ruling/law that defines certain aspects of construction and zoning.

Jurisdiction: The location of a piece of property which has control to make ordinances for the area. Can be a city, state, county, or all of the above.

Accessory Building: a free-standing building in the yard of a primary dwelling unit.
Location and size are usually determined by ordinances in a particular jurisdiction.

Primary Dwelling: The main residence on a piece of property.