

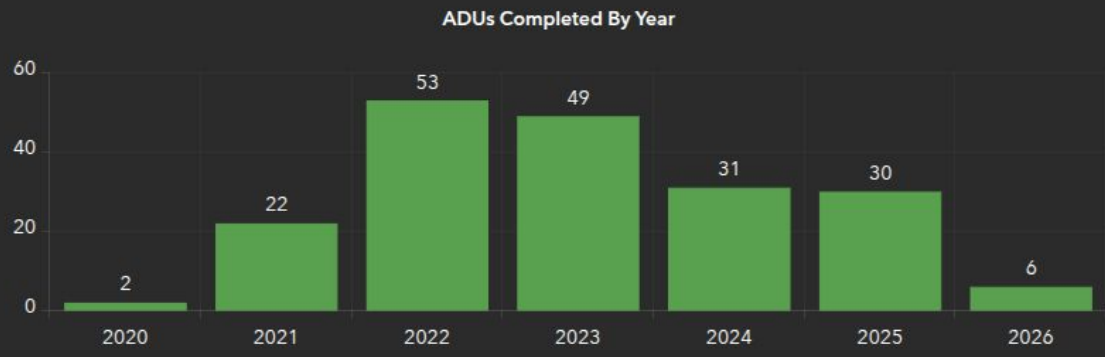


**CITYBUILDER**



# **ADU Accelerator Program Professional Training**

# Accessory Dwelling Unit (ADU) Permit Data



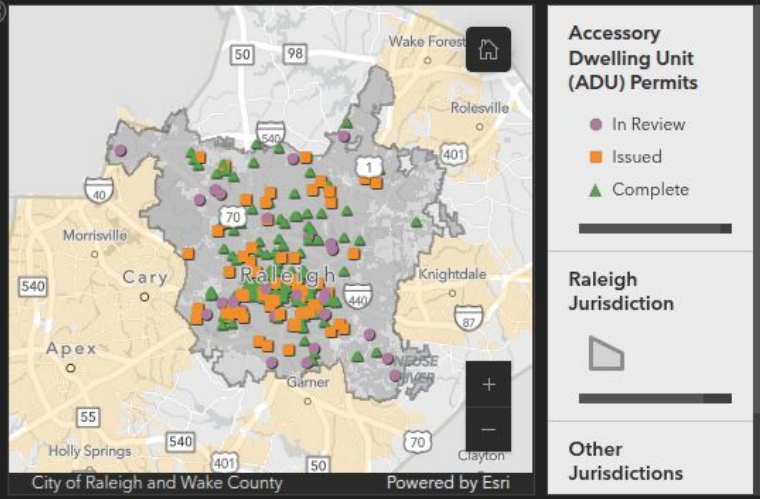
ADU Permits    ADU Applications    **ADUs Completed**

**In Review**  
**44**

**Issued**  
**264**

**Completed**  
**193**

Total ADU Applications  
**321**



This data shows permits in review, issued, and completed for Accessory Dwelling Units (ADUs) since the City began tracking in late 2020. "In Review" means a building permit has been applied for but not issued. This may include permits that are ready for issuance, but have an outstanding issue, like remaining fees. "Issued" means the building permit has been issued, and the project is eligible for construction or may be complete. "Completed" means a certificate of occupancy has been issued and the units can be occupied. The data includes all permits labeled as ADUs. For complete data, please visit the [City's Open Data Portal](#).

## Professional Training

Creating a pipeline of skilled professionals for Raleigh's growing green housing market



## Sustainability Tour

Elevating Raleigh-based designers and contractors who model sustainable practices and demonstrate the potential of gentle density to reduce sprawl.



## Feasibility Tool

Allowing Raleigh homeowners to determine the feasibility of building an ADU on their property

# ADU Accelerator Program

Expanding housing choice in Raleigh  
by supporting local entrepreneurs and builders and  
helping homeowners make informed choices

This work made possible through the City of Raleigh Impact Partner's Grant



# Today's Agenda

9:00 – 9:15      **Breakfast & Networking**

9:15 – 10:40      **Session 1**

- Why ADUs Matter Now
- Raleigh ADU Regulations: What Are the Rules Anyway?
- Designing an ADU That Permits & Performs

# Today's Agenda

**10:40 – 10:50      Break**

**10:50 – 11:25      Session 2**

- Construction Sequencing & Cost Drivers
- Full Project Roadmap: From Idea to Move-In

**11:50 – 12:00      Closing**

**1:00 – 5:00      Tour**



# ADU's: How Did We Get Here?

## WakeUP Wake County Led the Fight to Legalize ADUs 2014-2020

The Mordecai Backyard Cottage Project 2014  
School of Architecture | NC State University

The Mordecai Backyard Cottage Project is a research and design project conducted by the School of Architecture at NC State University. Faculty and students worked collaboratively with residents of the Mordecai community to envision a range of possibilities for backyard cottages, and conducted research on national precedents, current city codes, and potential benefits and impacts.

Backyard cottages are a historical housing type currently enjoying a resurgence of interest in North America. Also called accessory dwelling units (ADUs), they are second, smaller living units typically placed in the backyards of single-family homes. Often associated with the tiny homes movement, backyard cottages offer affordable alternatives to predominant housing models and practices.

They can provide:

**Affordability** for homeowners and their tenants  
**Adaptability** as family needs and make-up change over time

Cities such as Asheville, NC, Portland, Oregon, and Seattle, Washington, have adopted backyard cottages into their development ordinances. The City of Raleigh's Unified Development Ordinance (UDO) originally provided for backyard cottages but this provision was removed due to concerns about their potential impacts.

**Faculty + Students**

Thomas Barrie, AIA,  
Director: Affordable Housing and Sustainable Communities Initiative  
Taylor Belgz, Suzanne Cash, Paul Drake, Tenay Gondal, Kyle Jones, Faustine Pastor, Jason Patterson, Matt Tet, Dylan Thomson, Michael Wengertoth

**Community Partner**

The Person Street Partnership | Phillip Bernard: Chair

The **Affordable Housing and Sustainable Communities Initiative**  
School of Architecture | College of Design | NC State University  
http://design.ncsu.edu/ah+sc  
Contact: Thomas Barrie at tom\_barrie@ncsu.edu



### Other Opinion

Comment on these columns, our editors or the Editor of www.wakeupwake.com

The child in the basement

#### SPEAKING WHILE FEMALE

By Susan Swanson and Kate Gault

Y ou are again, while producing the hit TV series "The Mindy Project." One Morning noticed that her young female writers were going against some resistance. She posted their work and encouraged them to speak up.

What kind of support did she, the star, get?



We're not sure, but we would think she got a lot of support. It's not surprising that she would have a lot of support, given that she is a star and has a lot of influence.

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The beauty of backyard cottages

By Devin Breen

When you think of a backyard cottage, you probably think of a small, single-story structure with a gabled roof and a small porch. But what if you could have a backyard cottage that is as beautiful as a main house?

Backyard cottages are a historical housing type currently enjoying a resurgence of interest in North America. Also called accessory dwelling units (ADUs), they are second, smaller living units located in the backyards of single-family homes.

They are also called accessory dwelling units (ADUs), but an ADU can be an apartment in an existing house, whereas backyard cottages, as the name suggests, are separate, significantly smaller units. Backyard cottages used to be common but, beginning in the mid-20<sup>th</sup> Century, were increasingly zoned out and thus in many cities are illegal.

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### Backyard Cottages | FAQ's

#### What is a backyard cottage?

Backyard cottages are a historical housing type currently enjoying a resurgence of interest in North America. Also called elder cottage housing, in-law apartments, mother-daughter units, companion units, guesthouses, and alley flats, they are second, small living units located in the backyards of single-family homes. They are also called accessory dwelling units (ADUs), but an ADU can be an apartment in an existing house, whereas backyard cottages, as the name suggests, are separate, significantly smaller units. Backyard cottages used to be common but, beginning in the mid-20<sup>th</sup> Century, were increasingly zoned out and thus in many cities are illegal.

#### What are the pros and cons of backyard cottages?

Opponents of backyard cottages worry they will negatively affect the character of their communities. Frequently cited concerns are that they will result in increased density, traffic and parking, loads on city services, infrastructure and schools, absentee landlords, and substandard or incompatible housing. However, backyard cottages are recognized as a housing option that can provide stable housing as family needs change over time. They can provide a place for a parent or boomerang kid to live, or where homeowners can live as empty nesters (and rent the primary unit), or where a caregiver can live so the homeowner to age in place. Backyard cottages can also provide rental income to subsidize homeowners' mortgage payments allowing people to age in place. And they are sustainable. They use fewer materials and require less energy to heat and cool, thus reducing utility costs and carbon emissions. Additional housing units in inner city neighborhoods can also mitigate sprawl and support public transportation.

#### What cities allow backyard cottages?

Many cities do, some of which we consider to be our cultural and economic peers. Austin, Texas, for example, recently updated their zoning ordinance to make it even easier to create backyard cottages. Seattle, Washington, San Antonio, Texas, Phoenix, AZ, Boulder, Golden, and Aspen CO, and San Diego, Sacramento, and San Francisco, CA, have adopted backyard cottages into their development ordinances. Some cities, such as Portland, OR and Santa Cruz, CA, not only allow them, but also actively promote them. North Carolina cities that allow them include Charlotte-Mecklenburg, Winston-Salem, Durham, Wilmington, Asheville, and Chapel Hill. Many are in the process of expanding opportunities for backyard cottages.

#### How are they designed and regulated?

Most cities specify minimum lot size, property line set backs, height limitations, and maximum square footage. Some require off-street parking and that they match the style of the primary residence. Some cities require owner occupancy of backyard cottages to control who lives in them, but others, such as Portland, Vancouver and Asheville, do not. And, there are other means for ensuring they are good neighbors, such as requiring separate meters for each unit, registering each unit, and rigorously enforcing tenant laws. Most important is good design, which can produce smaller, low impact units that still offer generous living possibilities.



### Cameron Park ADU Tour



MORDECAI PUSHES FOR BACKYARD COTTAGES



# Why ADU's Matter Now

## For Municipalities

- Historic Building Type
- Gentle Density
- Complete Communities
- Sustainable Development
- Adding Housing at No Cost
- Potentially Affordable Housing
- Increase Tax Base

## For Households

- Flexible Housing as Family Needs Change
- Potential Rental Income

# Raleigh ADU Regulations: What are the Rules Anyway?

**Presenters:**

**Trent Mollison & Justin Bucher**

**Raleigh Planning and Development**



# What is an Accessory Dwelling Unit?

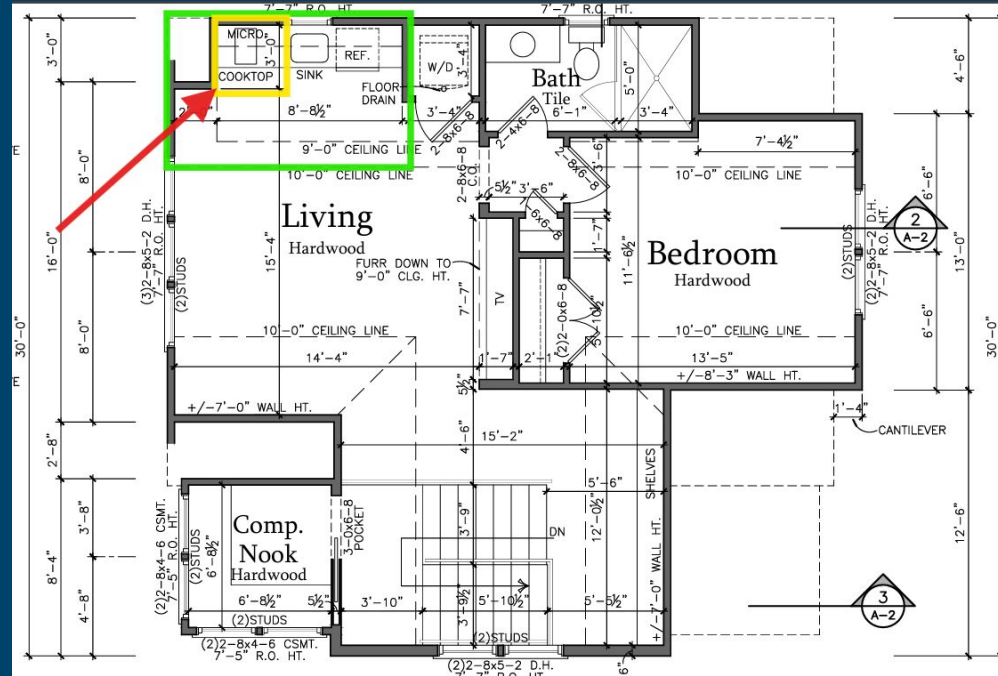
- A self-contained dwelling unit that exists on the same lot as another principal use.
- Can be attached, detached or internal to the principal use.
- Only residential uses are permitted in ADU's
  - Exception: Live work-use may be allowed so long as it's the only Live-Work use on the lot.

UDO section 2.6.3



# ADU vs. Accessory Structure:

- Ability to occupy an ADU independent of the parent structure.
- Contains full kitchen (e.g., oven range/cooktop).
- Gross Floor Area and Square Feet calculations for ADU's and Accessory Structures are categorized separately.
- ADU's receive addresses.





# ADU's in Residential Zones:

- Infill Regulations do not typically apply.
- ADU's are permissible on lots with existing Detached- and Attached- houses (i.e., duplexes), Townhomes, and Tiny Houses.
  - Tiny Homes: ADU's are not permissible on Flag-lots.
- In Residential Zones ADU's are prohibited on lots with Apartments (Triplexes +).



# ADU's in Frequent Transit Areas:

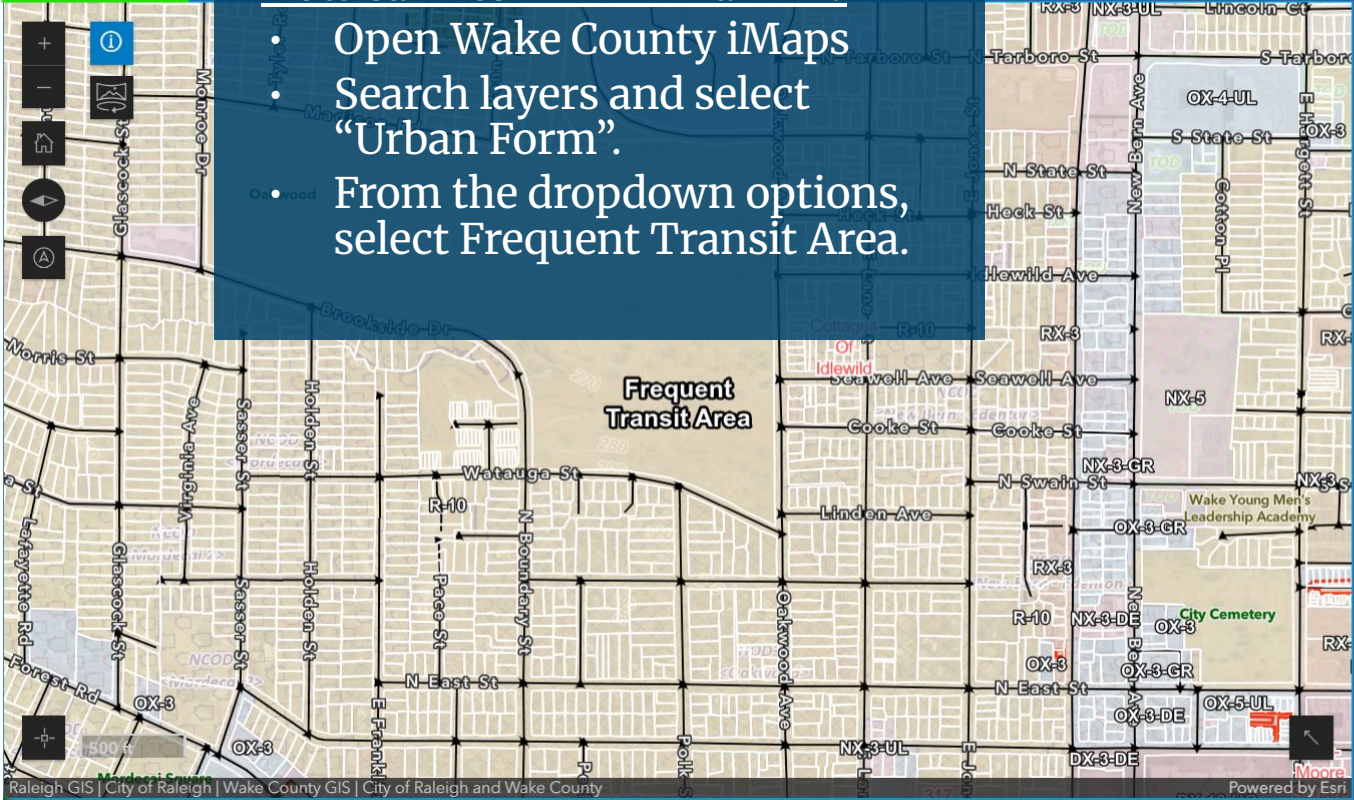
- What is the FTA? This is an area slated for bus or other transit service where the arrival time between vehicles is 15 min or less.
- A lot in the Frequent Transit Area allows for greater housing density which yields an allowance of two ADU's on a lot.
- **Regardless of FTA:** Townhomes only permit one ADU per lot.





# How can I tell if I'm in a FTA?

- Open Wake County iMaps
- Search layers and select "Urban Form".
- From the dropdown options, select Frequent Transit Area.



**Layers**

- Wake County Comprehensive Plan Development Framework
- Raleigh Planning and Development
  - Historic Properties
  - Urban Form
  - Main Street
  - Urban Thoroughfare
  - Transit Emphasis Corridor
  - Parkway Corridor
  - Commuter Rail Corridor
  - Transit Station Area
  - Mixed-Use Center
  - Bus Rapid Transit (BRT) Area
  - City Growth Center
  - Downtown
  - Frequent Transit Area

# ADU's as Manufactured Houses

- An ADU may be a manufactured home if it meets the definition outlined in our Unified Development Ordinance at 12.2.M
  - MH no greater than 600 sf in Gross Floor Area.
  - First floor height minimum 7ft – 6in.
  - Exterior wall covering must be non-reflective material.
  - The eave projections of the roof must not be less than ten inches (excluding roof gutters) unless the roof pitch is 8:12 or greater.
  - Roofline pitch must be 5:12 or greater.
  - Foundation skirting must meet zoning standards of compliance.

## Manufactured Home

A structure, as defined in N.C. Gen. Stat. § 143-145(7), transportable in one or more sections that is built on a permanent chassis and designed to be used as a dwelling, with or without permanent foundation.



# Base Dimensional Standards

- Height:
  - Maximum overall building height for ADU's is 26'.
- Lot Size:
  - If the lot is under 40,000 sf = max Gross Floor Area is 800 sf
  - If the lot is over 40,000 sf = max Gross Floor Area is 1,000 sf
  - Setback dimensions dependent on lot size.
  - ADU's on Townhome lots are setback from the \*site boundary\* as opposed to lot lines.

Lot Area	Greater than 40,000 sf	10,000 sf to 40,000 sf	Less than 10,000 sf
From side street (min)	15'	15'	10'
From side lot line	10'	5'	5'
From rear lot line	10'	5'	5'
From alley	4' without parking / 20' with parking	4' without parking / 20' with parking	4' without parking / 20' with parking

# Gross Floor Area: What is it?

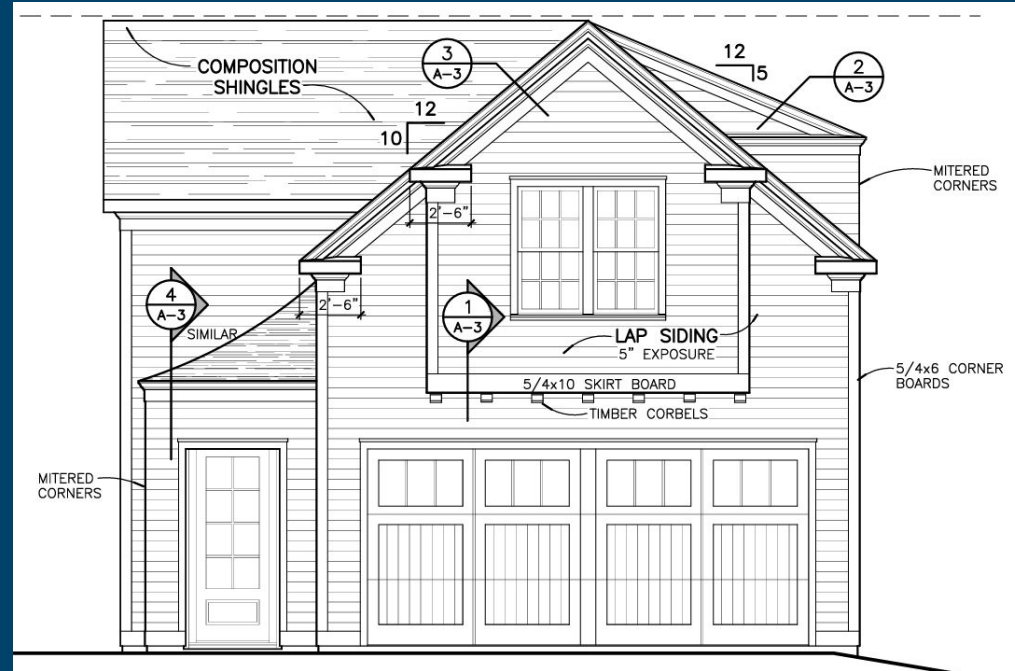
- The sum (in square feet) of the gross horizontal area of all floors of a building measured from the exterior walls or from the centerline when 2 buildings or units abut.
- Includes:
  - Basement floor area when more than 50% of the basement height is above the established curb level or above the finished lot grade level where the curb level has not been established.
  - Elevator shafts, stairwells, floor space used for mechanical equipment, attics, internal balconies and mezzanines, and floor area devoted to accessory uses are included in the calculation of gross floor area.
  - Attached garages shall be included in the calculation of gross floor area.
- Not Included:
  - Any space devoted exclusively to on-site parking; outdoor loading, display, storage, utility service areas; and/or uninhabited enclosed space on tops of roofs; or attic space having head room of less than 7' 10".

UDO sec. 12.2.G

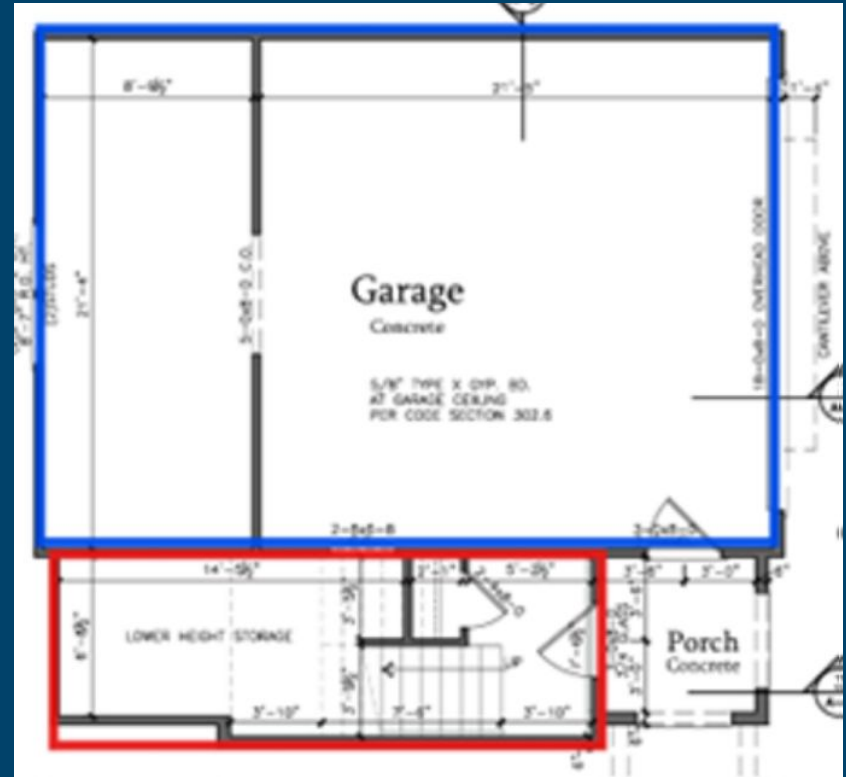
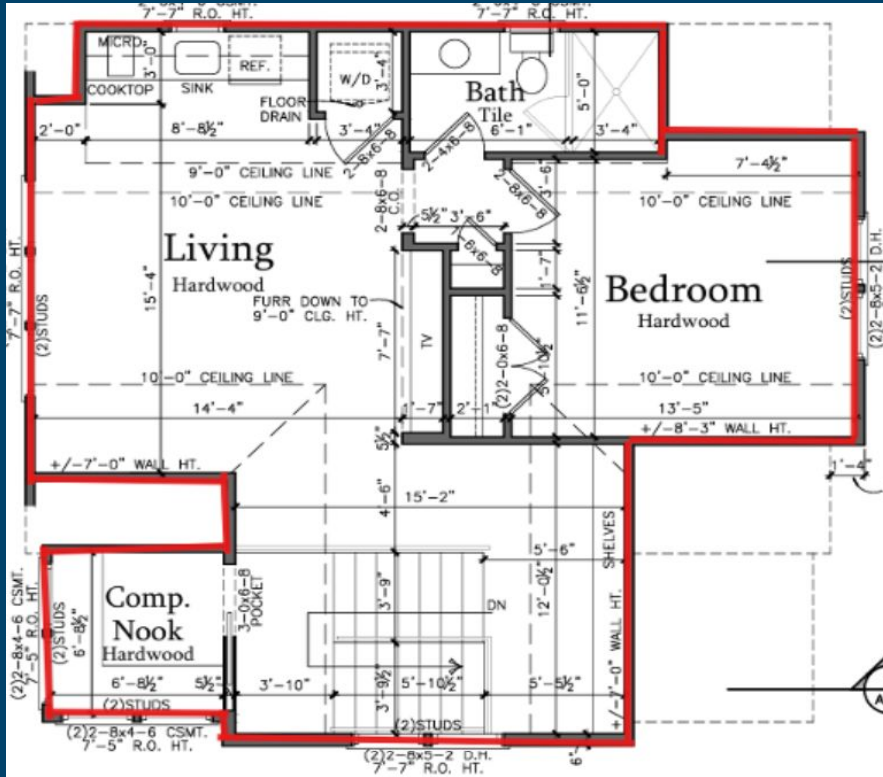
Area Calculations:			
Heated (sf)		Unheated (sf)	
1 <sup>st</sup> floor:	155 sf	Garage:	624 sf
2 <sup>nd</sup> floor:	576 sf		
<b>Gross Floor Area:</b> <b>731 sf</b>		<b>Unconditioned:</b> <b>624 sf</b>	
<b>Note:</b> For ADU's we're focusing on conditioned space. If any unconditioned space attached to the ADU it'll be connected to the accessory structure floor area.			

# Gross Floor Area: ADU's + Garages

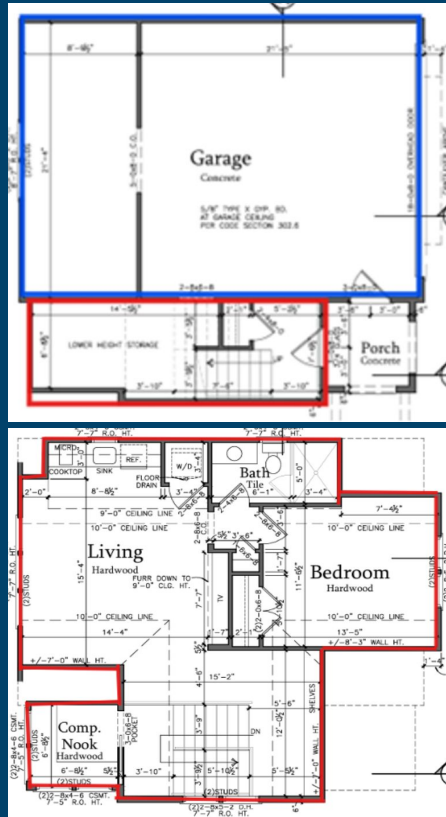
- ADU vs. Garage space is calculated and categorized separately.
- ADU Gross Floor Area includes all conditioned space.
- Attached un-conditioned space (garage) is included in the calculation for Accessory Structures.



# Gross Floor Area: ADU's + Garages



# Gross Floor Area Vs. Accessory Structure Combined Area



## Gross Floor Area

**Conditioned sqft:  
(ADU)**

**1st floor:  
112 sqft**

**2nd floor:  
682 sqft**

**Unconditioned sqft:  
(Garage)**

**1st Floor: 689 sqft**

Photo Credit

# Floor Area Standards: Accessory Structures

Accessory Structure max. allotments are governed by two thresholds:

- The floor area of all accessory structures combined on a lot can be no greater than the lot size allotment or;
- The combined floor area can be no larger than 50% of the principal structures floor area.

Lot Size	Greater than 40,000 sf	10,000 sf to 40,000 sf	4,000 sf to 9,999 sf	Less than 4,000 sf
Combined Floor Area (max.)	1,200 sf	1,000 sf	800 sf	600 sf
Combined Floor Area (max.)	50% of the principal structure floor area	50% of the principal structure floor area	50% of the principal structure floor area	50% of the principal structure floor area

The greater number between the two standards will control.

UDO sec. 6.7.2

Photo Credit

# ADU's: Mixed-Use Zones

## Districts Allowed In:

- Rx-, OX-, NX-, CX

## Gross Floor Area:

- Max allowance is 800sf regardless of lot size.

## May share a lot with non-residential/commercial buildings

- Apartments (Tri- and Quadplexes).

## Setbacks:

- Across all lot sizes structure setbacks remain the same.

Detached ADU Setbacks	
From primary street (min)	Must be located at or behind the front wall of the principal building
From side street (min)	10'
From side lot line (min) <sup>2</sup>	5'
From rear lot line (min) <sup>3</sup>	5'
From alley (min)	4' without parking / 20' with parking

# Connecting Features: Breezeways

- Structures joined by a breezeway are considered detached if the breezeway meets following thresholds:
  1. No more than 6 feet in width, including roof overhangs;
  2. Is no more than 16 feet in height or the height of the principal structure, whichever is less;
  3. Meets the accessory structure setbacks;
  4. Is open on at least one side except for structural support columns. The other side may utilize mesh, latticework, or a similar treatment;
  5. Is located no closer to the primary or side street than the wall plane of the principal structure closest to the street; and
  6. Has no walkway on the roof.

# Permitting:

## Work Class:

- Detached: ADU
- Internal: ADU-Change of Use
- Principal Building Addition:  
Addition + ADU

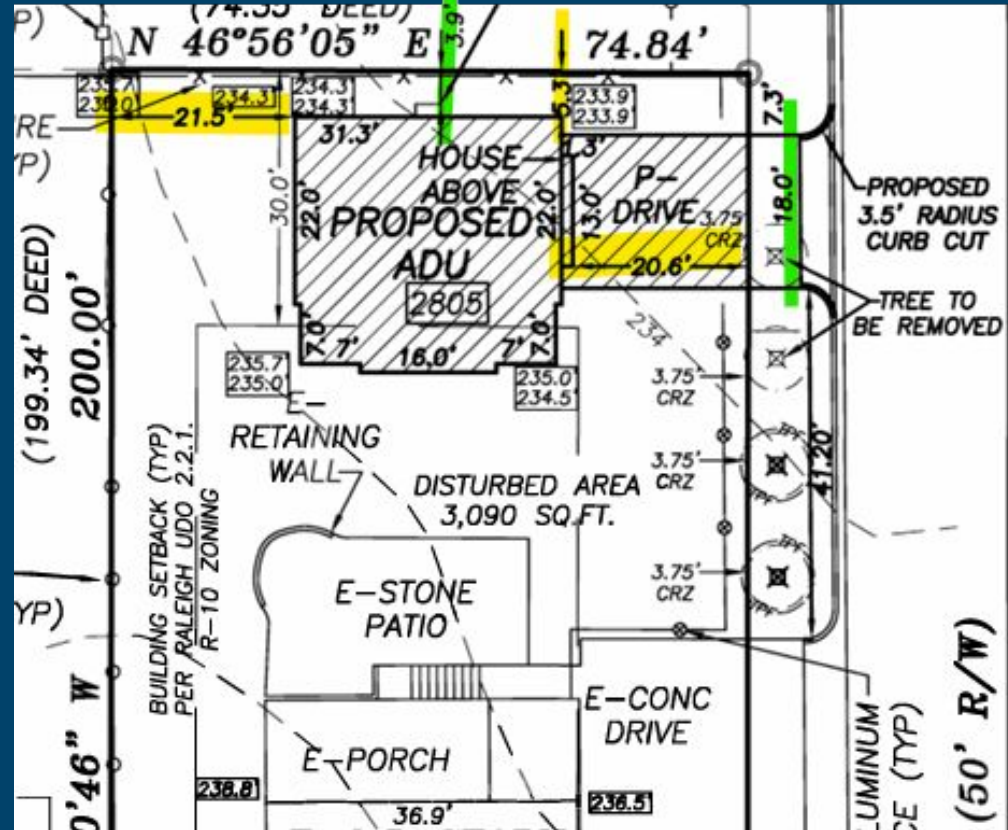
## Key Review Documents:

- Site Plan
- Residential Permit Data Form
- Construction Drawing with  
Floor Plans and Building  
Elevations



# Permit Review: Site Plan

- Setbacks must be clearly dimensioned from lot lines to denote Zoning Code compliance.
- Labeled as “Proposed ADU”.
- Address of the ADU must be recorded and shown.
- ADU Accessibility.



# Permit Review: Construction Drawing

Assess height compliance:

- Overall building height shown from the front elevation and measured from the front elevation average grade.
- Reflects height compliance and is within building max height of 26 feet.
- Building elements (porches, decks, bay windows, etc.) are consistent with site plan.

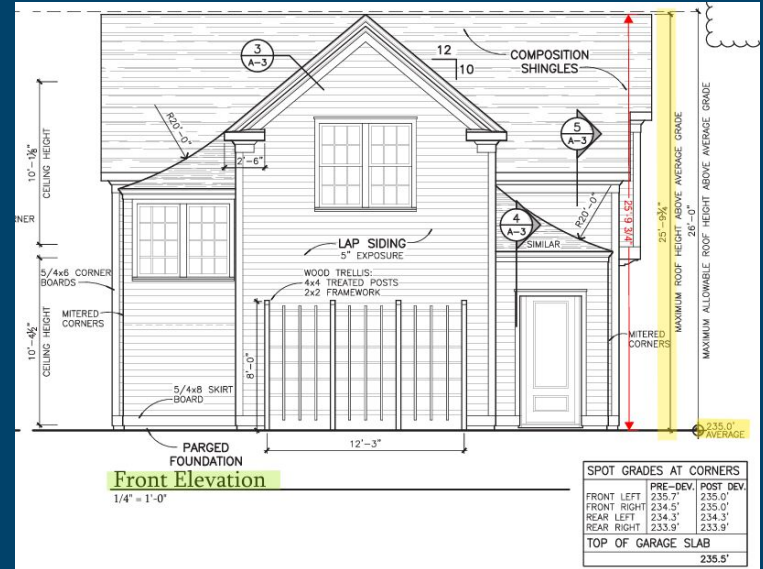
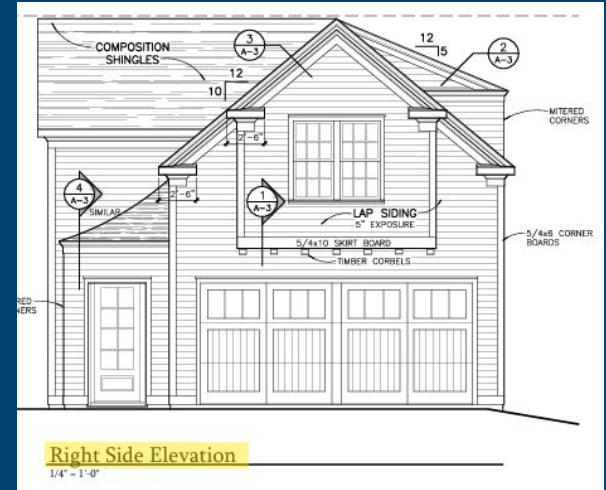
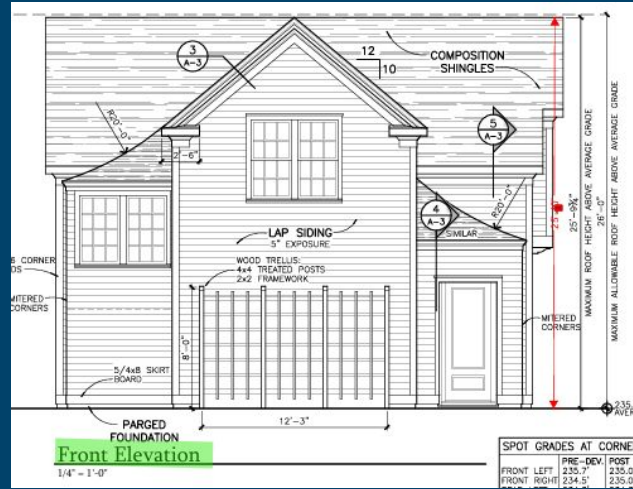
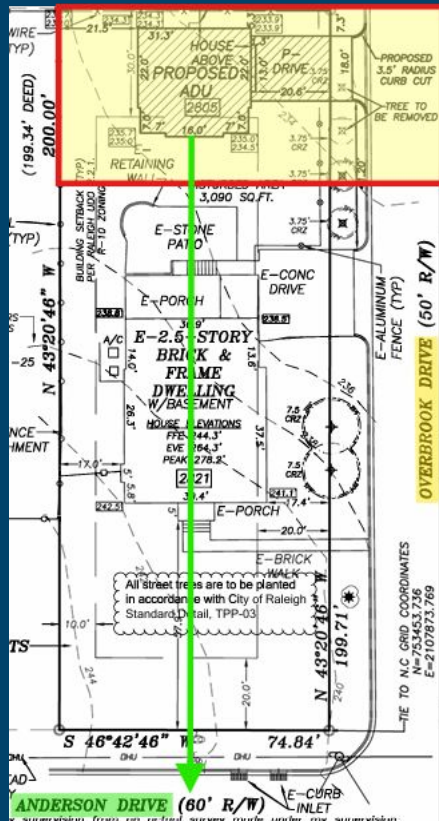


Photo Credit

# Building Orientation vs. Front Elevation



## Front elevation:

- The façade fronting the lots primary street regardless of building orientation.

Photo Credit

# Permit Review: Data Form



The Residential Permit Data Form is a calculation tool used to assess and confirm overall height based on lot elevation.



It is the primary source for assessing elevation spot grades at the location of the proposed building.



Elevation grades reported on subsequent documents must be consistent with what's reflected within this document.

# Permit Review: Data Form

## Residential Permit Data Application

Planning and Development Customer Service Center | One Exchange Plaza, Suite 400 | Raleigh, NC 27601 | 919-996-2492



Unless otherwise stated herein, all sections of this form must be completed and submitted with residential permit submittals as listed below. This form does not replace the required site plan/plot plan survey.

**Important Note:** If your project is subject to residential infill compatibility UDO Section 2.2.7, a foundation survey may be required. The foundation survey must be available at the time of zoning site inspection and must include a temporary benchmark, the elevation grade points, and the elevation at top of wall.

DEVELOPMENT TYPE (check all that apply)	
<input type="checkbox"/> Detached House	<input type="checkbox"/> Accessory Structure (15 feet or more in height)
<input type="checkbox"/> Townhouse	<input type="checkbox"/> Accessory Dwelling Unit
<input type="checkbox"/> Attached House (Duplex)	<input type="checkbox"/> Addition (15 feet or more in height)
<input type="checkbox"/> Apartment (Triplex or Quadruplex)	<input type="checkbox"/> Other

TO BE COMPLETED BY APPLICANT		
Applicant Name:	Company:	Date:
Project Address: 2821 Anderson Dr. Raleigh, NC 27608		

RESIDENTIAL STATUS	
1. Is the project utilizing the Frequent Transit Development Option (UDO Sections 2.7.1. or 3.7.1.)? If yes, leave Sections 2 and 3 blank and move to Section 4. If no, move to Section 2.	<input type="checkbox"/> Yes <input type="checkbox"/> No
2. Height measurement and building placement can be impacted by the infill status of a property. Do Residential Infill Compatibility regulations (UDO Section 2.2.7.) apply? If yes, move to Section 3. If no, leave Section 3 blank and move to Section 4.	<input type="checkbox"/> Yes <input type="checkbox"/> No

**BUILDING AND SIDE WALL HEIGHT ARE MEASURED FROM AVERAGE GRADE (UDO Section 1.5.7.)**  
If any side of the building contains more than two sidewalks, please submit additional sheets as necessary.

**3. Pre-Development Grade Measurements**  
Only complete this Section if "Yes" is entered into Section 2. If property slopes up from the street, enter information into Subsection D.

Enter the measurement for each applicable category in feet above sea level. The information on this form can be cross referenced by item letter on Elevation drawings to provide height measurement for buildings and sidewalks. Note: After the initial review and depending on the design of the structure and proximity to the property line, you may be required to provide information for additional sidewalks.

	Highest Grade Measurement	Lowest Grade Measurement	Average of Highest and Lowest Grades
A. Front Elevation	235.7	234.5	235.1
B. Left Sidewall	235.7	234.3	235
C. Right Sidewall	234.5	233.9	234.2
D. Rear Elevation (only required if property slopes up from the street)	234.3	233.9	234.1

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## 4. Post-Development Grade Measurements

If "No" is entered into Section 2, only enter information into Subsection E, however, if property slopes up from the street, also enter information into Subsection H. If "Yes" is entered into Section 2, complete all other Subsections.

Enter the measurement for each applicable category in feet above sea level. The information on this form can be cross referenced by item letter on Elevation drawings to provide height measurement for buildings and sidewalks.

	Highest Grade Measurement	Lowest Grade Measurement	Average of Highest and Lowest Grades
E. Front Elevation	235	235	235
F. Left Sidewall	235	234.3	234.65
G. Right Sidewall	235	233.9	234.45
H. Rear Elevation (only required if property slopes up from the street)	234.3	233.9	234.1

## 5. Grade Measurements for Overall Height Calculation

Based upon the residential infill status and slope of the property, enter in the appropriate information for the applicable category.

Enter the measurement for each applicable category in feet above sea level. The information on this form can be cross referenced by item letter on Elevation drawings to provide height measurement for buildings.

I. Residential infill does not apply to this case. Grade measurement is based on the average listed in part E of this form.	Avg. Grade =
J. Residential infill does not apply to this case and the lot slopes up. Grade measurement is based on the average of the average of part E and H of this form.	Avg. Grade = 234.6
K. Residential infill does apply to this case. Grade measurement is based on the average of the average listed in parts A and E of this form. (Use the average of E alone if it is lower than the average of A.)	Avg. Grade =
L. Residential infill does apply to this case and the lot slopes up. Grade measurement is based on the average of the average of parts A, D, E and H of this form. (Use the average of E and H alone if it is lower than the average of A, D, E, and H.)	Avg. Grade =

## 6. Overall Building Height

Maximum building height (for additions or new structures) must be met from the average grade of each primary street independently. For additions, you may demonstrate height to the peak of the existing structure if taller than the addition. Otherwise, height shall be measured to the peak of the addition (UDO Section 1.5.7.A.2.).

The information on this form can be cross-referenced by item letter on Elevation drawings to provide measurement for overall height. On the Elevation drawings, include the dimensions of any encroachments that exceed the maximum height limit (UDO Section 1.5.7.D.).

Name of Street (REQUIRED)	Average Grade	Overall Height (ft.)
Example: Oak Tree Lane	305'	32'
M. Anderson Dr	234.6	25' 9 3/4"
N.		

Only complete Sections 7 and 8 if "Yes" is entered into Section 2. Provide the addresses and primary street setbacks for principal buildings included in the comparative sample. For additions: The subject property setback must also be provided.

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raleighnc.gov

2

## 7. Street Setback Comparative Sample

Address:	Setback (ft):	Address:	Setback (ft):
Address:	Setback (ft):	Address:	Setback (ft):
Address:	Setback (ft):	Address:	Setback (ft):

## 8. Side Wall Plane Height and Length

List the sidewalk plane height measured from the average grade. See UDO Section 2.2.7.D. and E:

O. Left Sidewall: \_\_\_\_\_ ft. Use the average of the left side Pre- and Post-Development Grades to calculate height. If the Average of F is lower than the Average of B, use F to calculate height.

P. Right Sidewall: \_\_\_\_\_ ft. Use the average of the right side Pre- and Post-Development Grades to calculate height. If the Average of G is lower than the Average of C, use G to calculate height.

Any sidewalk that is:  
a. More than 50 feet in length; and  
b. more than 25 feet in height; and  
c. is located within 15 feet of a property line

Q. Please list applicable sidewalks that meet all three criteria. If none are applicable, please leave this section blank.

Must provide a projection or recession of at least 10 feet in length and 4 feet in width.

R.  
S.

## TO BE COMPLETED BY APPLICANT

I acknowledge that: "The information provided on this form is accurate and that I am responsible for any errors or omissions."

Print Name:	Company:
Signature:	Date:

Revision 2-12-2026

raleighnc.gov

3

# Final Points:

Like ADU's, exists the "Tiny Home" development type. Delineating features between the two include:

- Tiny Homes allowance to exist on the lot independent from any other structures.
- Are the only development type permissible on Flag Lots.
- Are tethered to building footprint max allowance of 800 sf and gross floor allowance of 1,200 sf.



# Questions? Contact -

Trent Mollison: Senior Planner  
City of Raleigh

[Trent.Mollison@raleighnc.gov](mailto:Trent.Mollison@raleighnc.gov)

919-996-2601

# Designing an ADU That Permits and Performs

**Presenters:**  
**Jenn Truman**  
**Aaron Lubeck**  
**The Rocket Shop**





**more about quality  
than codes**



# what we want:

(yes, this is from the pro:  
Ross Chapin, Pocket Neighborhoods)



74

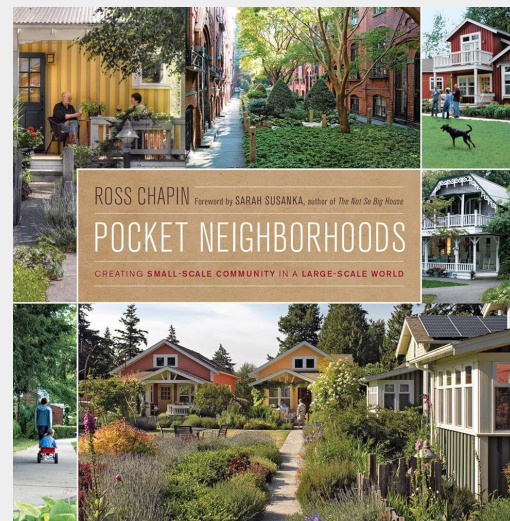
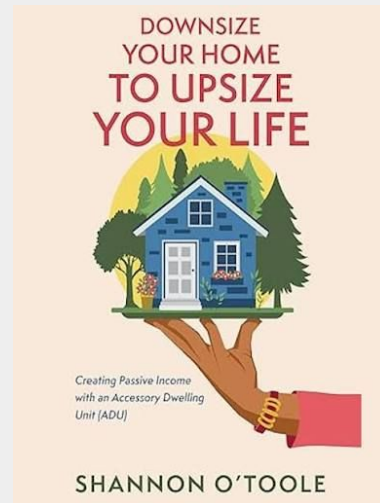
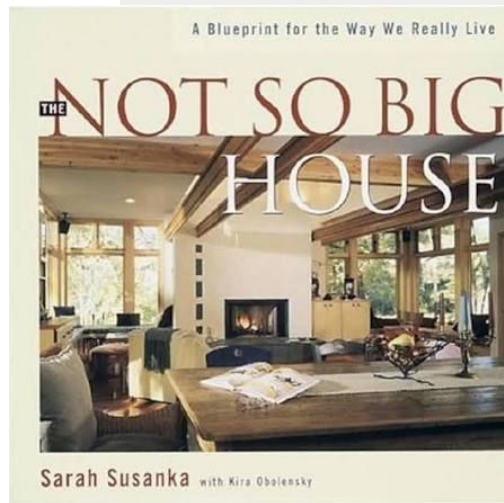
The lower courtyard is more formal in nature, with a central lawn and a flagpole; the upper courtyard has a relaxed mix of perennial flowers and shrubs.

The two courtyards have different qualities. The lower courtyard is more formal, with steeply pitched bungalow cottages lined up along the central lawn; the upper court is smaller and oriented around an informal, landscaped garden.

Garages are clustered together a short distance from the homes, an arrangement that has residents walking through the commons to their front door, offering a chance to enjoy the flowers or chat with a neighbor. This configuration also gave us the flexibility to fit buildings onto the land in ways that preserved trees and open space.



what we want:





# how we get there

Raleigh's Zoning Ordinances



Raleigh UDO

[Table of Contents](#)

[Home](#) > [CHAPTER 2. RESIDENTIAL DISTRICTS](#) > [Article 2.6. Additional Housing Patterns](#)

## Sec. 2.6.3. Accessory Dwelling

### A. Purpose and Objectives

The Accessory Dwelling housing pattern provides for the development of an accessory dwelling unit or units on a lot with an existing Detached House or Tiny House as an accessory use to a principal use of Single-unit Living, or on a lot with an existing Attached House, Townhouse or Tiny House as an accessory use to a principal use of Two-unit Living, or on a lot developed with an existing Townhouse as an accessory use to a principal use of Multi-unit Living.

### B. Base Standards Apply

Except as specifically set forth in this section, the allowed uses, the dimensional requirements, height limits and general development standards of the underlying zoning district apply.

### C. Definition

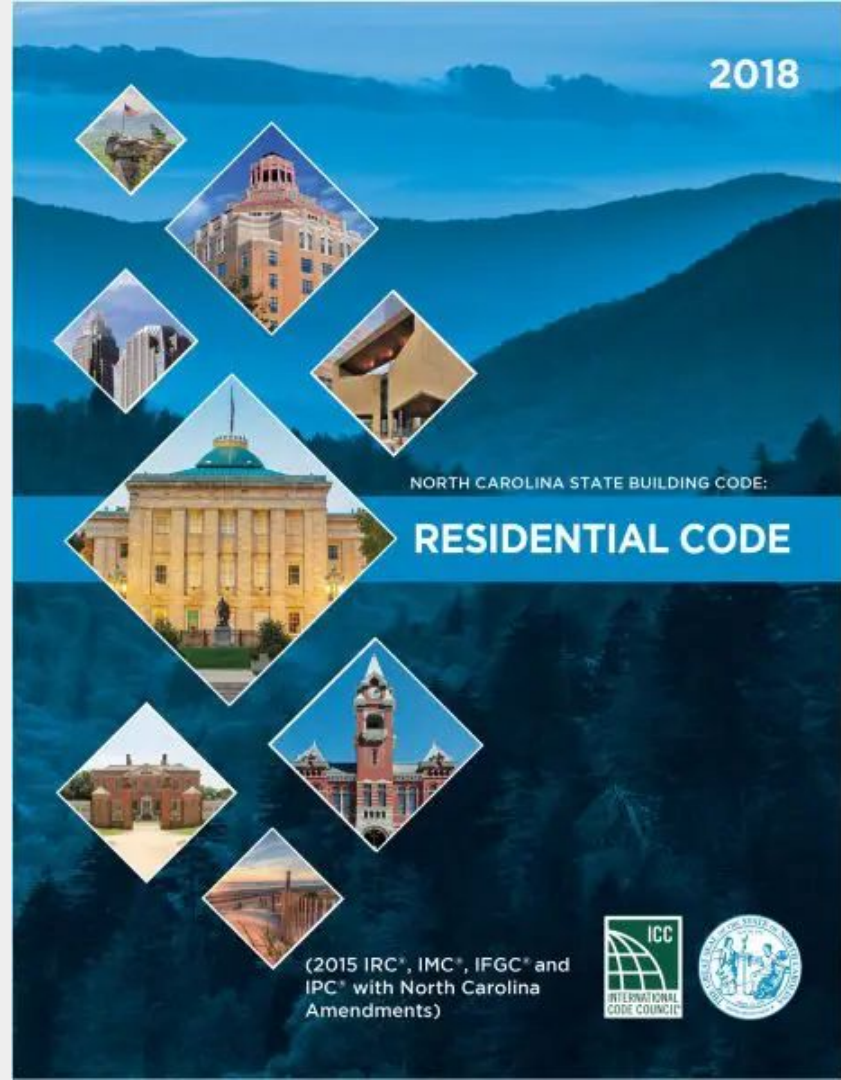
An Accessory Dwelling Unit (ADU) is a self-contained dwelling unit that is located on the same lot as a principal dwelling that meets the regulations identified in Section 2.6.3.D. An Accessory Dwelling Unit may be located above a garage. Accessory Dwelling Units may be detached, attached, or internal to the principal dwelling. Only residential uses are permitted in Accessory Dwelling Units with the exception





# how we get there

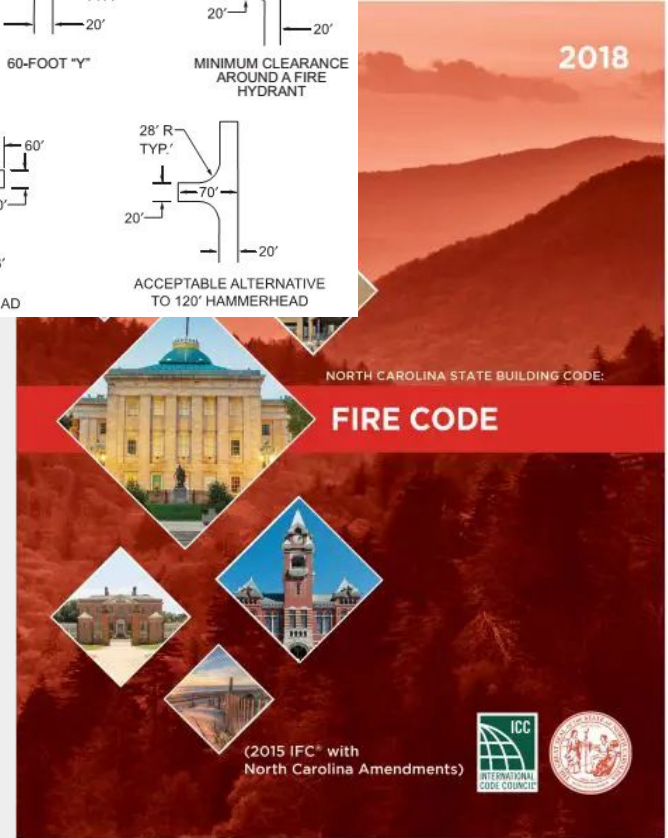
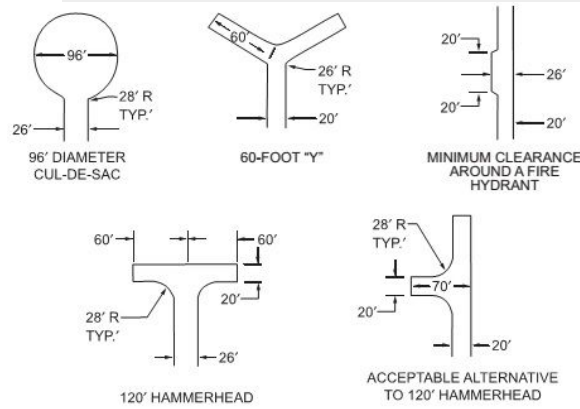
Raleigh's Zoning Ordinances  
NC Residential Building Code





# how we get there

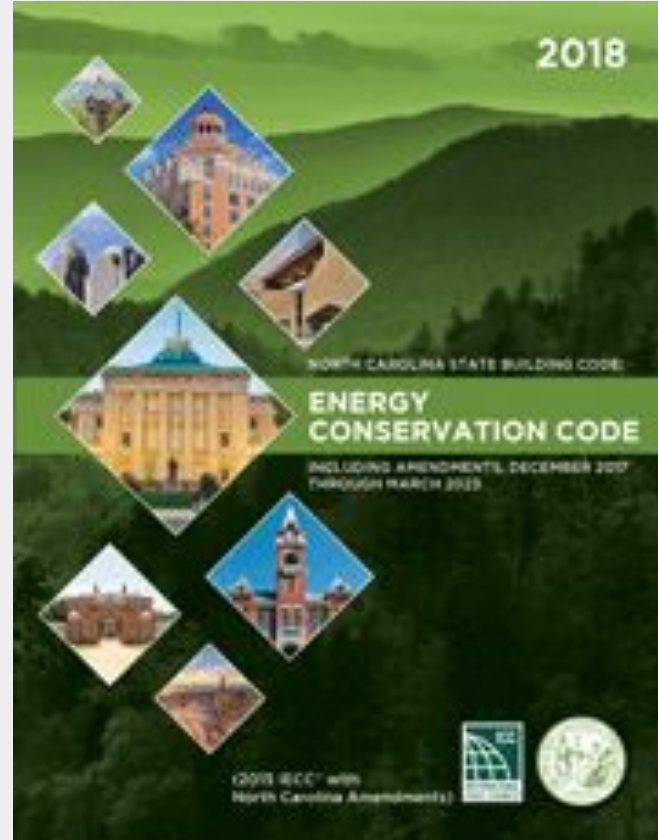
Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code





# how we get there

Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code  
NC Energy Code





# how we get there

Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code  
NC Energy Code  
Raleigh Stormwater Manual



## Stormwater Design Manual

*Effective Date November 2, 2024*



Raleigh  
Stormwater



# how we get there

Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code  
NC Energy Code  
Raleigh Stormwater Manual  
Raleigh Street Design Manual

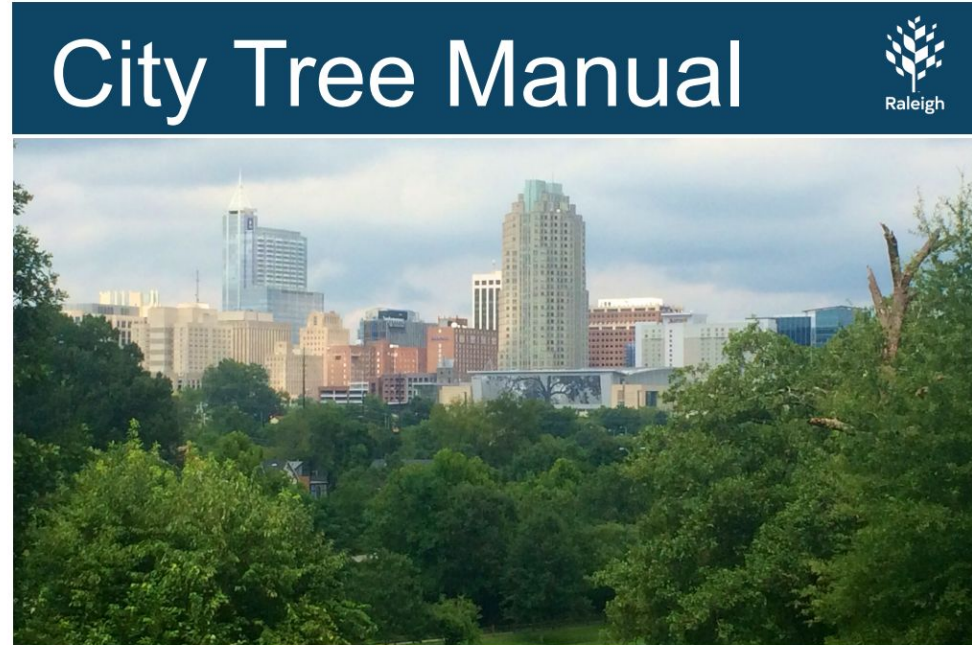


July 1, 2018



# how we get there

Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code  
NC Energy Code  
Raleigh Stormwater Manual  
Raleigh Street Design Manual  
Raleigh Tree Manual



## **Arboricultural Specifications and Standards of Practice**

Raleigh, North Carolina Companion to Municipal Code Part 9, Chapter 8. Trees and Vegetation.





# how we get there → design choices

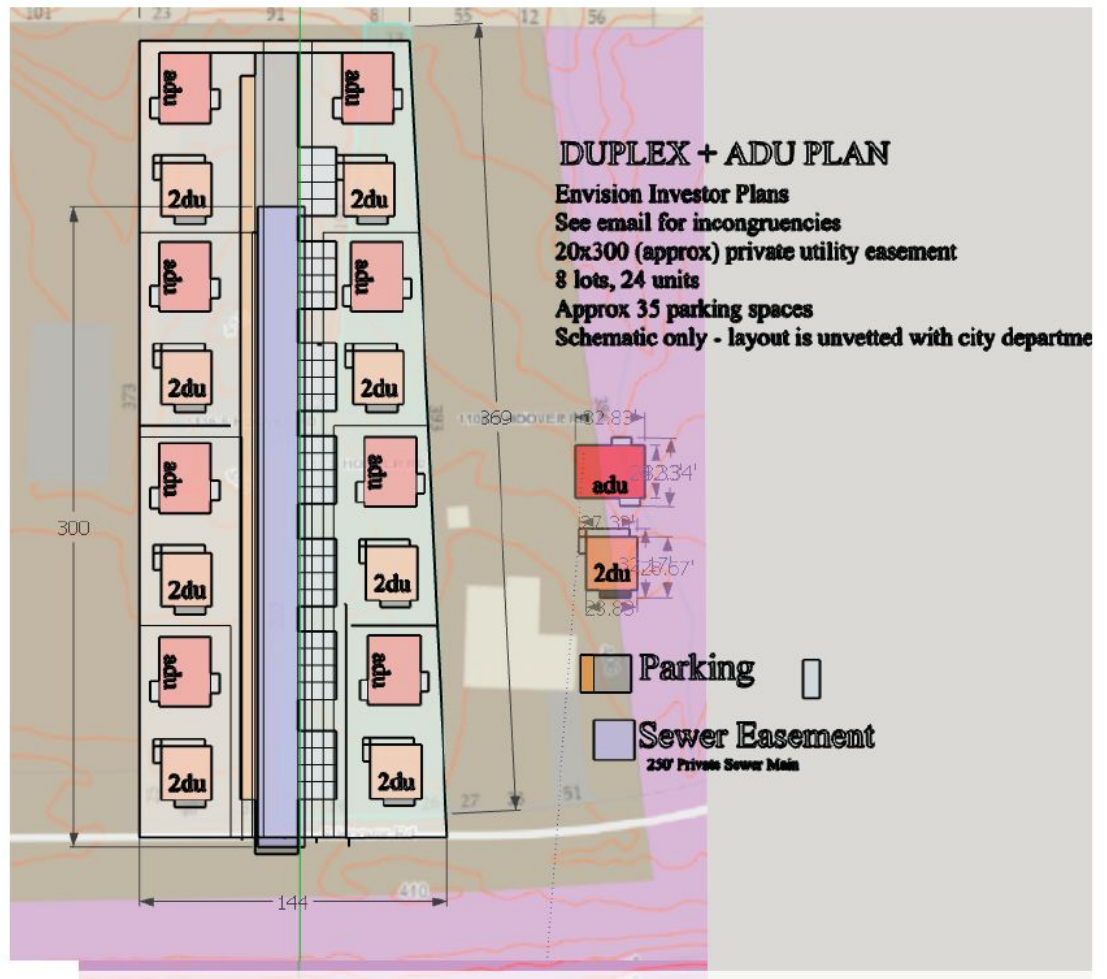
Raleigh's Zoning Ordinances  
NC Residential Building Code  
NC Fire Code  
NC Energy Code  
Raleigh Stormwater Manual  
Raleigh Street Design Manual  
Raleigh Tree Manual  
Raleigh Standard Details





the rocket shop

1 single family lot becomes 8 lots  
with 24 units (single + duplex)



provided. There is no warranty for third party survey or GIS information. This concept sketch reflects a cursory analysis of potential development options for the property in accordance with City of Durham zoning code, recent code changes and current staff interpretations is recommended.



**sustainability  
starts with the site**





# **elements of a cute backyard cottage**

shared greens

front porches

layered spaces

human scale

fences and screening



**building within  
existing neighborhoods  
means less sprawl**



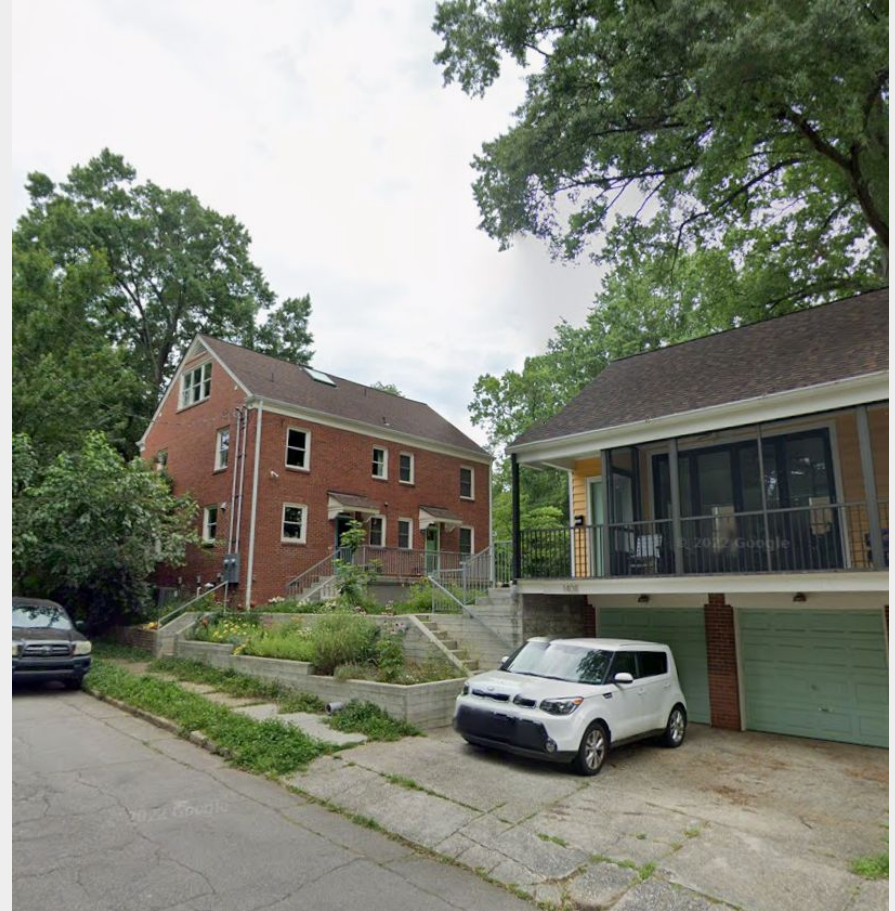


**walkable living**





# shared greens & outdoor spaces





# outdoor rooms

(porches are sustainability features)





# lifetime design

universal design

accessibility

age in place

Intergenerational living

**AARP** [Join](#) [Renew](#) [Membership & Benefits](#) [Members Edition](#)


[Health](#) [Money](#) [Work & Jobs](#) [Advocacy](#) [Social Security](#) [Medicare](#) [Caregiving](#) [Games](#) [Travel](#) [More...](#)

AARP LIVABLE COMMUNITIES

## Accessory Dwelling Units, Defined

ADUs are a family-friendly, community-creating type of housing that the nation needs more of

[f](#) [X](#)



*An ADU is always the smaller of two dwellings on a property. Renting out this 350-square-foot garage-conversion ADU in Portland, Oregon, helps the property owner, who lives in the lot's primary residence, pay her home mortgage. It's also possible for an existing home to become the ADU, such as when a larger house is built and becomes the primary dwelling. (Photo courtesy AccessoryDwellings.org)*



# small buildings, big performance

compact homes = less material

less energy use

simpler details





the rocket shop

It is in the details

### DETAILS FOR A THICK ROOF

Rigid-foam insulation installed above the roof assembly can create an air-membrane roof. With three layers of 1½-in. polystyrene insulation above the sheathing and approximately 9½ in. of cellulose insulation in the rafter cavity, the roof shown here has an R-value of approximately 63. The three layers of foam help to seal air leaks, but to make this assembly perform well, you need to incorporate some unconventional details.

Metal roofing is shown here. Other types of roofing work, too. Check asphalt-shingle warranties to make sure hot roofs are acceptable to the manufacturer.

Self-adhesive membrane

¾-in. OSB or plywood for securing roofing

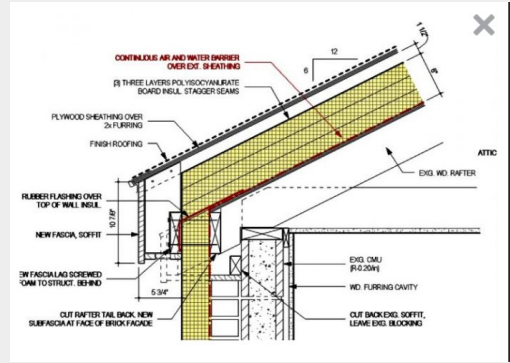
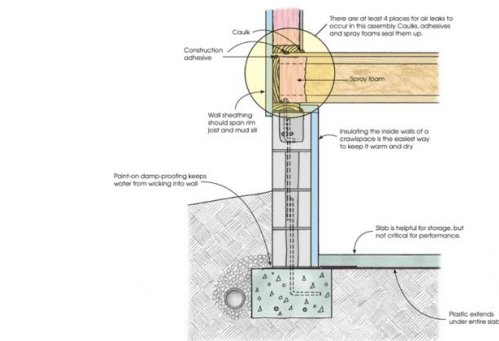
Install three layers of 1½-in. rigid insulation with staggered seams. Tape the seams of the final layer. For polystyrene or XPS, use contractor's tape or foil tape. For EPS, use canned foam. To make this assembly even tighter, tape or foam all of the layers.

¾-in. structural roof sheathing

Long screws penetrate the rafters to secure the top layer of sheathing.

The fascia should be installed before the peel-and-stick roof membrane so that the membrane can wrap over the fascia by at least ½ in. To provide wind ratings for the fascia, install a stack of beveled-edge 2x6s or 2x4s at the eaves.

To maintain a continuous air barrier, install strips of rigid foam as wind blocking between the rafters, in the same plane as the wall sheathing. Cut these foam strips short by about ½ in. to allow room for the expanding spray foam that will keep the strips in place.

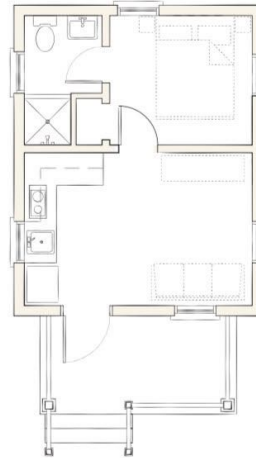


Drawing: John Hartman



**more of these**





we can help



**CONTACT**

Jennifer Truman  
NCIDQ, Associate AIA, EIT  
Principal, The Rocket Shop  
jenn@rocketshopnc.com

**INTENT AND CONFIDENTIALITY**

This drawing is provided to convey the conceptual intent of our client to develop the property and is confidential. This drawing may only be used for the express purpose for which it was produced, and may only be reproduced w/ permission by The Rocket Shop.

**Stock Plans**

**1620-1**

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The Rocket Shop

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# Break Time

**10:50 - 11:25**

## **Session 2**

- Construction Sequencing & Cost Drivers
- Full Project Roadmap: From Idea to Move-In

**11:50 - 12:00**

## **Closing**

**1:00 - 5:00**

## **Tour**



# Construction Sequencing and Cost Drivers

**Presenter:**  
**Joel Lubell**  
**Armature Design + Build**



# BUILDING ADUS IN RALEIGH

*A Perspective on Accessory Dwelling Units*

---

JOEL LUBELL

**ARMATURE**

DESIGN + BUILD



# ARMATURE DESIGN BUILD: OUR ACCOMPLISHMENTS

65+

Permits  
Since 2020

14

Full & Part-Time Team Members

6

ADU Projects

- Started February 2020 - Navigated pandemic startup.
- Finished the first ADU in Raleigh
- 3 ADUs completed; 3 currently under construction.
- Diverse Portfolio: Standalone, Attached, and Garages.
- Inside the Beltline (ITB) Raleigh Specialists
- High-Performance focus for long-term durability.



# PERMITTING: HOW I LEARNED TO STOP WORRYING AND LOVE THE BUREAUCRACY

## The 80/20 Rule

Maintain SOPs for 80% of operations while allowing 20% "float" for phone calls and emails. This prevents a nimble business from becoming a bureaucracy itself.

## Two Ways to Foolproof

- **Remove the Fool:** A strategy for small, nimble firms to maintain high quality through elite talent.
- **Create a Rule:** The City's necessary approach to serve the public and protect tax dollars.
- **Boiled Frogs:** Our team acts as the expert "boiled frogs," navigating nuances that seem impossible to outsiders.

# FAST TRACK PROGRAM: EXPECTATION VS. REALITY



## Upfront Savings

Reduces design costs by \$5,000 to \$20,000. It is a "Fast Track" to submission, not necessarily a faster permit.



## 1 of 8 Reviews

Only covers the building/structural review. The other 7 reviews (Zoning, Stormwater, etc.) are lot-specific.



## Hidden Variables

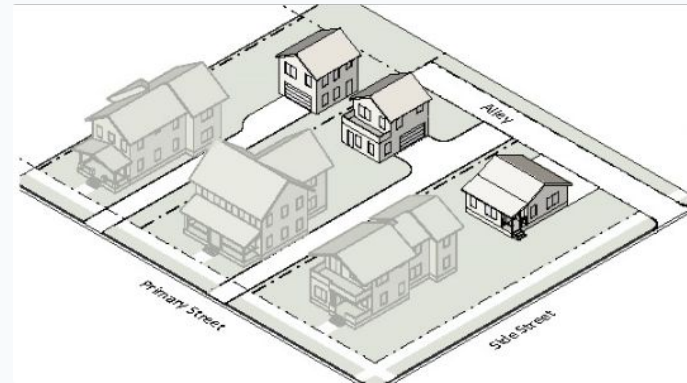
Urban forestry, addressing, and utilities are unique to your lot and are never "pre-approved."

# SITE LOGISTICS: A HOUSE IN THE YARD

## Logistical Realities

- **The \$50k Delta:** Site conditions and access constraints can create massive cost variances between identical buildings.
- **Manual Labor:** In tight urban infill, tradespeople must often hand-carry all materials through narrow side yards.
- **Prefab Limitations:** Raleigh's 12-month build season makes on-site construction highly efficient compared to prefab infrastructure.

*"Building an ADU is just like new construction, except there's an entire house in the way."*



# INFRASTRUCTURE: UTILITIES & GRAVITY



## Existing sewer line

A 3-inch sewer line only supports 3 toilets. To add an ADU, you often must verify if you have a 4-inch line (which supports 25+).



## Electrical Reality

Duke Power offers "free" trenching, but they will not dig under trees, sidewalks, or existing driveways.



## Gravity

Plumbing requires "fall." If the backyard is lower than the street, a sewer pump (with potential smell and venting) is mandatory.

# ECONOMICS: THE COST OF DENSITY



6

Sides to  
Build

40%

High-Cost Area  
(Kitchen/Bath)



No Dilution of  
Costs

**ADUs suffer from Cost Compression. You build the most expensive rooms without "diluting" the cost across large living spaces**

# A SILVER LINING: SCALABLE QUALITY

## Upgrade Efficiency

On a small scale, doubling the quality only adds a few hundred dollars.

## The Scaling Math

A 10% material increase on a \$200k project is only \$20k—but it's \$50k on \$500k project. Smaller footprints allow for superior finishes.

## The "Pretty Good House"

Framework for building durable, healthy, and energy-efficient homes without a bottomless budget. Focus on air leakage, insulation, and vapor control.



# FOUNDATIONS: SITE INTERACTION

Foundation Type	Best Use Case	Key Considerations
Concrete Slab-on-Grade	Level lots, standard ADUs	Traditional, durable, on-grade access.
"Concrete-less"	Specific site constraints	On grade but not concrete, High-performance detail
Elevated Foundation	Sloped lots, poor drainage	Finished floor 30" min from grade Must insulate and protect plumbing "underbelly."

# BUILDING SCIENCE: MOISTURE & CLIMATE

## The Armature Strategy

We use **Green Board (Moisture Board)** for all drywall in the building, not just bathrooms. This prevents mold if the HVAC is left off in summer.

## Semi-Conditioned Spaces

ADUs often sit unoccupied. Building them to be "bulletproof" against Raleigh's humidity ensures long-term durability for family members or renters.

### What Is Green Board Drywall?

Moisture-resistant drywall — for elevated humidity, not direct water

- 1 QUICK DEFINITION:**
  - 1** Moisture-resistant drywall — commonly called **green board** because of its distinctive green face paper
  - 2** Purpose: Engineered to handle elevated humidity better than standard drywall
- 2 HOW GREEN BOARD IS MADE:**
  - Gypsum core treated with wax emulsion + face paper coated to resist moisture absorption
  - Moisture-resistant coating on face paper
  - Wax emulsion in the gypsum core
  - HOW IT WORKS:** Shows the rate at which water vapor passes through the board
- 3 THE GREEN COLOR:**
  - Green color is **purely functional** — helps contractors and inspectors quickly identify moisture-resistant panels on job site, distinguishing them from standard white/gray or purple boards.
- 4 HISTORY + SPECS:**
  - HISTORY:** Green board became standard for bedrooms/kitchen walls in latter half of twentieth century, replacing standard drywall in humid interior zones.
  - SPECS:** Same thicknesses as regular drywall — most commonly 1/2 inch and 5/8 inch — installed, taped, and finished using identical methods.
- 5 THE CRITICAL DISTINCTION:**
  - GREEN BOARD RESISTS MOISTURE — IT DOES NOT REPEL IT**
  - Wax saturation of core + moisture-resistant paper facing slows moisture penetration — it does NOT prevent it entirely.
  - RESISTS + SLOWS ABSORPTION** (Diagram showing water droplets being slowed by a barrier)
  - REPELS + PREVENTS CONTACT** (Diagram showing water droplets being blocked by a barrier)

**GREEN BOARD = UPGRADE FOR HUMIDITY. NOT WATERPROOF. NOT FOR SHOWERS.**

# DESIGNING FOR PEOPLE: ACCESSIBILITY MATTERS



## Turning Radiuses

Motorized wheelchairs require specific radiuses. In a small space, every inch of door swing and closet access must be planned.



## Mobility Logic

ADUs are often for aging parents. Standard layouts fail in tight bedrooms when a bed competes with a swinging closet door.



## Aging in Place

The "Mother-in-Law" suite is a reality of demographics. We build to ensure safe, independent living for the long term.

# ZONING NUANCE: ADU VS. ACCESSORY BUILDING

## Distinct Legal Entities

Under the Raleigh UDO, an ADU and an Accessory Building (like a garage) are different structures with different allotments.

## The Hybrid Play

We have successfully built ADUs **above** Accessory Buildings. This strategy allows homeowners to maximize their lot usage and square footage efficiently.

# CONCLUSION: WORK WITH GOOD PEOPLE

Thank you for listening. Navigating ADUs requires a working with people who understand the science, the city, and the site.

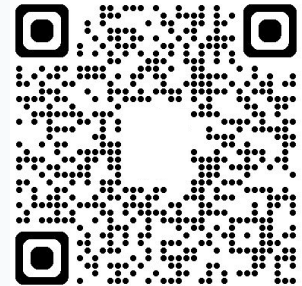
## Joel Lubell

JoelLubell@Armaturedesignbuild.com

Armaturedesignbuild.com

## Join the Conversation

Join our local chapter of **BS and Beer Raleigh** (Building Science and Beer). We meet monthly at bars or job sites to discuss building things better.



# Full Project Roadmap: From Idea to Move-in

**Q & A Panelists:**

***a homeowner, a designer, a builder, and a regulator walk into a bar.....***



# Wrap Up: What's Next

If we want more ADUs...

- What do we need to STOP?
- What do we need to START?
- What do we need to CONTINUE?



**CITYBUILDER**



**Thank You!**

Raleigh, NC

# YIMBY TOWN '26

NOVEMBER 17-19, 2026 • RALEIGH, NC

GET TICKETS

CALL FOR SPEAKERS

