

Dense and Sensibility: Subtle Design and Policy for Accessory Dwelling Units

By

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“To keep such possibilities at a distance, architects would call me ‘that planner’ (and planners, for other reasons, ‘that architect’). I am both and more. I had approached the decision to study planning from a European viewpoint. Europeans believe that to be an ‘urbanist architect’ is to be exceptionally good at design. But Americans think architects become planners because they are ‘no good at design.’”

— **Denise Scott Brown**

In memory of Nilma Benejam.

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The Introduction

The Context

“They say they have been driven out by high rents. In some cases, they complain, rents have been doubled on them. These persons say...that they are earning as good wages as they ever did, but they are unable to pay the increased rent.”

The San Francisco Bay Area’s skyrocketing rents have been making the headlines throughout economic recovery period following the Great Recession of the Late 2000s. This quote could be seemingly pulled out of any contemporary news website or area blog. Its source, however, is an article titled “Driven Out by High Rents” from the San Francisco Call’s issue in July of 1906. High costs of living and impossible rents, it appears, are nothing new to the region. Even the San Francisco’s much-chagrined \$4 toast isn’t without precedent. Canteens in the city’s earliest years often charged \$1 for toast, \$2 if buttered. 150 years of inflation bump that price up to \$52 present-day dollars.¹

“Despite the amazingly high cost of living and the extraordinary opportunities for frittering away money, everyone in early San Francisco was supremely confident that he would soon be able to return home with an incalculable amount of gold. Everything was conceived on a vast scale, and there was always plenty of cash available for any scheme that might be proposed, no matter how impossible or bizarre it seemed.”² Again describing the Gold Rush era, the quote could just as easily apply to the Yo app’s valuation at \$10 million in 2014.³ But why is a history of unaffordable rent, expensive toast, and overvalued schemes of any importance?

Clearly, the Bay Area is no stranger to eras of high cost in its housing market. However, in a city where headlines from 1849 read much like those from 2016, studying the specific conditions in detail and with nuance becomes important in imagining possible solutions. History’s precedents, while useful to understand, do not necessarily present solutions applicable to today’s contemporary reality and values.

In Oakland, where rents have increased 20% in the past year and doubled since 2011,⁴ policymakers can’t even agree if these conditions are substantially different from previous areas of rapid population growth. “There is no housing crisis in Oakland,” says the city’s Planning and Building Director Rachel Flynn in October of 2015.⁵ “Oakland has an affordability crisis,” contradicts Mayor Libby Schaaf that same month.⁶ There was no gold nugget or earthquake to clearly signify the start of the contemporary housing crisis. In fact, it comes just a few years after the nation’s foreclosure crisis. While struggling to adapt to the ricocheting housing prices, long-term residents and new arrivals alike are suffering from a built environment that is too inflexible to deal the turbulence of this decade.

In previous eras of growth, the region has resorted to changing the natural environment to accommodate the built environment. The urban fabric’s flexibility stemmed from its ever-enlarging footprint. Large portions of San Francisco Bay were filled in; grasslands became farms; farms became suburban communities. Having sprawled over the past century and a half, few large sites suited to new construction remain that are not outweighed by environmental and infrastructural consequences.

Pushes to lower the region's greenhouse gas emissions and alleviate already-snarled traffic necessitate a departure from continued outward expansion and suggest infill construction as a better solution to these particular issues. The existing urban fabric's elasticity could be reinvigorated through increased density. But this notion is not without its own controversy; many residents are not eager to see their neighborhoods change. Even though the processes that led to lower density residential areas are challenged by contemporary values, the by-product of these processes in previous eras--single family homes--are still highly desired.

The Crisis

Efforts to preserve some of the Bay Area's beloved low- and medium-density housing stock are rebutting the location of, if not the need for, new higher-density construction. These preservation-focused sentiments are often reactionary; backlash against both completed and proposed buildings stems from the public's perception of change, density, and neighborhood character. In these instances, perception becomes the lynchpin to understanding these sentiments. It describes two interrelated, yet nuanced, processes. The first includes the mental associations and connotations that change, density, and character carry in the American context. The second includes the alignment or misalignment of a person's assessment of their surroundings versus the actual conditions. An analysis of density helps to clarify the differences between these two aspects of perception.

Although oversimplified, for the greater part of the 20th century in the United States, there has been an implied correlation between the concepts of density and affordability. The reference is familiar to

us: the high-rise projects housing the inner city poor, distant and separated from the wealthy, spacious suburbs of the middle and upper classes. The twenty-first century, however, has upended this traditional understanding with the confluence of several trends: the commodification of urban real-estate, the urban preference of millennials, and the suburbanization of poverty. The dense cores of many urban areas are now eliciting some of the most expensive rents in their metropolitan areas. Likely magnified by the economic growth of technology companies, the San Francisco Bay Area has seen some of the strongest examples of these effects in recent years. In other words, people's perception of urban living environments is trending towards increased desirability. This is straining the cost of living in areas that meet these desired conditions, and putting pressure on nearby but lower-density areas to change.

However, there is more to density than simple numerical calculations. First, the numbers themselves are more complex than they initially seem. The relationship between density and affordability, for example, is generally thought to be one of positive correlation. Higher density yields more affordability. But paradoxically, higher density also yields higher land costs. While the cost per square foot may go down with higher density developments, the barrier to entry for land ownership increases.

Secondly, there are also important factors that are more qualitative and subjective. Simple design decisions can have significant effects on people's perception of the built environment. Student research undertaken in Berkeley Professor Peter Boselmann's CP241 course over several years has consistently shown that residents of units with dual-orientation (windows or views onto both

the front and back of the property) perceive fewer people to live on their block than those who live in units with only a single exterior orientation. Design decisions such as these impact how residents assess their surrounding environment to surprisingly high degrees, while going largely unnoticed. They can render similarly dense neighborhoods to be perceived as either crowded or comfortable.

Yet growing vocal criticism of architects and planners may suggest that contemporary design is exacerbating the perceived degree and rate of change. At one extreme, the professions are accused of destroying the character and fabric of the city through dull and soulless developments. These critiques can be grouped into a category describing the generic. At the other extreme, through radical designs and unnatural densities planners and architects are blamed for pushing their own agendas and ignoring existing context. Invoking the esoteric aura of theoretical discussions, these criticisms can be understood as the iconic.

In fact, the perception of density is having profound effects on how the professions of the built environment engage with, and are viewed by, the public. Tension over design and density has, particularly in the Bay Area, stalled many of the efforts to alleviate the housing crisis through additional construction. In one recent example, a project that has been in the development pipeline for 13 years finally won approval by reverting to a design that was originally scrapped in 2006.⁷ Similar stories of resident's protesting the design, scale, or density of proposed projects and delaying the project can be found in Potrero Hill⁸, the Mission,⁹ and Berkeley.¹⁰

Although criticism of these professions is not new, aesthetic and theoretical discourse has historically taken place largely outside of the general public's sphere of influence. The proliferation of digital communication platforms has enfranchised these previously dismissed voices, foregrounding professional criticisms to unprecedented and un-ignorable levels. Architectural theorist Jeffery Kipnis has even suggested that architecture's digital revolution was spawned not by computer-aided design, but by social media.¹¹

Many of the recent proposals have petitioned for changes to their site's regulations, such as zoning or land use variances. Public outreach and consensus is important in these cases. However, for projects that comply with existing rules, how impactful should the public concerns over design and density be? Concerns about the waning influence of planners and architect's expertise is more than just of professional concern. The Bay Area is more expensive than ever, and the public is rejecting many of the conventional solutions offered by planners and architects as potential remedies. Instead of attributing the Bay Area's affordability problems solely to the effect of NIMBYs, perhaps a critical self-reflection of the profession's traditional roles and the rules they operate within is necessary. Can a more nuanced and detailed approach to zoning and design guidelines partially ease the public's concern over changes in their neighborhoods? Can revisiting the boundary between planner, architect, and public participant re-instill public faith in the construction process? What sacrifices need to be made to produce an urban fabric flexible enough to adapt to uncertain futures, and what benefits can be exacted in that process? Thinking critically about these questions is paramount in an era when simply growing the region's boundary with low-density construction is no longer a sustainable and viable solution.

The Concept

If the criticism is accepted, then conceptual examination of the generic and the iconic may provide crucial insight. The challenge is to find a design language that operates within the thresholds of the generic's dullness and the iconic's flagrancy. This thesis hypothesizes that in between these two poles lies a delicate complexity that is not easily or immediately perceived: the subtle.

An exploration of the subtle intersects many difficult and contentious discussions in the environmental design disciplines. While the terminology may be new, it draws upon various more familiar trends and sources in both architecture and planning, showing that many of the root ideas have been around for some time. These established voices and precedents help distill abstract and conceptual understandings of the subtle, the generic, and the iconic into visual patterns. Visible and describable relationships emerge from the pattern studies, eventually distilling into a design strategy for new construction. This transforms the subtle from a singular definition to an almost infinite relationship between parts that can be applied at every scale of proposed new construction. This more flexible understanding of relationships becomes an important tool not only revealing existing areas of opportunities, but also for challenging assumed constants as well.

So what does the subtle look like? The subtle can operate at various scales and within multiple interpretations. But considering the extreme specificity of the Bay Area's affordability issues, a widely-supported and inherently subtle form of housing serves as a promising, albeit imperfect, local foundation. Accessory dwelling units (ADUs) provide a popular and familiar

framework for adding new units into a neighborhood without radically transforming the existing "character." However, the viability of ADUs as a widespread solution to the housing crisis is inherently limited. While ADUs are now widely legal with many suitable sites for development, existing zoning policies do not necessarily align with the goals of adopted ADU ordinances.¹² They frequently present difficult barriers for a typical homeowner to resolve, in addition to the financial costs for construction.

The subtle can create a new housing typology by rethinking ADUs both as individual buildings and as well as their aggregate relationships. This transformation brings two potential benefits. The first would be increased present-day buildability. Less expensive, more flexible units would not only incentivize their overall construction, but would allow their construction for a wider range of income level and household sizes. The second benefit provides a potential starting point for incremental densification of the Bay Area's inner ring suburbs, allowing more units to be built in areas that are currently viewed as hostile to change. While certainly not the standalone panacea for contemporary urban challenges, this new subtle paradigm can address the complex issues intersecting both the affordability and credibility crises that the Bay Area will continue to face in the years to come.

The Site

El Cerrito, California.

This inner-ring suburb of San Francisco traces its origins to aftermath of the 1906 San Francisco Earthquake, when survivors flocked to the agricultural lands of the East Bay looking for a faster place to rebuild. Although it remained a small village for several decades, the nation-wide wave of suburbanization following World War II quickly transformed the city and cemented its suburban character. Having built-out to its current footprint by the 1960s, its population has held steady at around 25,000 for the past fifty years. With two BART stations providing easy access to job and entertainment centers around the Bay Area, El Cerrito is feeling the affordability pangs radiating from San Francisco and Silicon Valley. Although the city has been friendlier than most in responding to ABAG's (Association of Bay Area Governments) Regional Housing Needs Allocation, most large and underutilized sites well-suited for affordable projects are all now being developed. With few remaining obvious parcels left for conventional development models, the twenty-first century provides a challenge and opportunity for El Cerrito: how to meet its future housing obligations without demolishing and replacing its existing housing stock.

The city's zoning map is fairly regular. With only occasional bulges and contractions, a commercial strip extends throughout the city occupying the sliver of land between San Pablo Avenue and the elevated BART tracks. The commercial strip is lined by one to two blocks of multifamily residential zoning, buffering the single-family residential zoning occupying the large remainder of the city. The single family zoning

distinction has three subcategories based on minimum lot size, but can be more easily understood through the city's three neighborhoods. Midtown, adjacent to the commercial and multifamily strip, is characterized by a continuous grid system that follows the contours of San Pablo Ave. that was mostly laid out by the late 1930s. It is comprised mainly of single family homes with a minimum lot size of 5,000 square feet. El Cerrito Hills, further to the east, is a neighborhood that meanders up the hillside along curvilinear streets. It features larger homes, with a minimum lot size of 10,000 square feet, that are separated from Midtown by the Hillside Open Area save for a few connecting streets. Lastly, Del Norte is the neighborhood occupying the northernmost third of the city. It is somewhat of a hybrid of the other two neighborhoods, featuring the smaller, 5,000 sq. ft. minimum lot sizes but an organic street system instead of a grid.

Given the characteristics of this urban fabric, Midtown serves as the best site for deploying the subtle housing strategy. Its more predictable urban form allows better translation of abstract pattern studies into site-specific interventions. Although the illustrated designs will be specific to a particular city block, the relative regularity of the grid gives a much more consistent backdrop for imagining how similar construction could shape other blocks. El Cerrito Hills' and Del Norte's unpredictable block pattern would necessitate a completely different set of relationships, sizes, and strategies for each particular block. Additionally, actual and perceived fire risk have huge impacts on a city's policies and built forms. Midtown's flatter, more-connected street grid makes it a much more realistic zone

for imagining new housing types than the greater fire-hazardous and less-accessible hillsides, particularly after noting its proximity to the El Cerrito Plaza BART station and the several bus lines leading to it.

Analysis of the city's 2015-2023 Housing Element reveals how rethinking traditional models of growth could help El Cerrito implement its growth more equally throughout the city. While Contra Costa County is expected to receive an additional 300,000 residents by 2040, El Cerrito is only planning to receive about 4,000 of those. In other words, although El Cerrito represents around 2.25% of Contra Costa County's population, it is only planning to absorb around 1% of its future growth.¹³ There are serious sustainability implications if the county is expected to house new residents through far-flung greenfield construction instead of transit-accessible infill. Additionally, the city has a larger share of middle-aged and senior residents than the county or state averages, raising questions about the built environment's ability to adequately address these aging resident's mobility and financial needs.¹⁴

The Association of Bay Area Governments (ABAG) determines the Regional Housing Need Allocation (RHNA) and apportions a certain number of units for each city to meet. The required units are stratified by income level, ensuring that housing is built for a full spectrum of future residents. El Cerrito has been assigned a total of 398 units for the 2014-2022 RHNA.¹⁵ With 251 units already approved or under construction, El Cerrito is doing a better job than most at meeting their projected housing needs.¹⁶ The Housing Element explains how the remaining 147 units could be built through an analysis of vacant or underutilized land in the city. If all these parcels are developed, the city claims that 943 new units could be built. While this is a laudable goal, the detailed analysis

coyly reveals that these potential units would vary in difficult and feasibility.¹⁷ Many of these units would come from development parcels that are currently owned by BART, which encounters additional complications, or from very small parcels, which can encounter economic limitations. Additionally, the Housing Element estimates that by 2040, the average household size will only increase very slightly, to 2.37.¹⁸ Even if all 943 units are built over the next three decades, this will only result in a population increase of 2,234 residents. This pales compared to the earlier projected growth of 4,000 residents, coming up about 44% short. When this is taken together with the charts showing the dramatic increase in housing prices over the past four years, it becomes apparent that El Cerrito needs to explore additional strategies to house its growing population.

The Accessory Dwelling Unit (ADU) seems like a promising starting point. El Cerrito has acknowledged their benefit and recently legislated a by-right approval process for ADUs that meet certain criteria. However, a more detailed study in the ADU typology reveals shortcomings that limit their potential effectiveness for meeting El Cerrito's future housing needs. Studies have indicated that under current regulations, only 11% of parcels in El Cerrito's flatter neighborhoods would meet the requirements for ADUs.¹⁹ Even if parking requirements, the largest limitation, were revised, new ADUs would still face other challenges. Many of these challenges arise from ADU's regulatory grey area as neither interior additions to homes nor fully independent units. A more comprehensive look at all aspects of ADU policy is helpful not only in understanding the current challenges, but also in revealing areas of possible improvements.

The ADU

The Benefits

Accessory dwelling units (ADUs) are small, secondary units built on the same lot as an existing traditional house or apartment. Also called granny flats and in-law units, they are most often tucked away in the rear yard of their larger primary units, and stand either independently or attached. ADUs add unperceived housing in largely single-family neighborhoods without disrupting a neighborhood's sense of "character." Although the first pushes for legalization of these units began in the late 1970s and early 1980s, only today are Bay Area cities making concerted efforts to facilitate the construction of ADUs. Why are these units suddenly so popular?

A previously conducted study, fellow students Sonia-Lynn Abenojar, Tamar Nativ, and I were curious about the public's perception of ADUs and whether secondary units could be a potential source of less contentious housing than the larger developments currently being proposed.²⁰ We began by asking the following question: Does the presence of Accessory Dwelling Units (ADUs) on a given neighborhood block change a resident's perception of density in North Berkeley? Our hypothesis, put simply, was that the number of ADUs on a block would have no effect on the perceived density.²¹

Our strategy to answer this question was to find an area of the city where we could survey residents of blocks that were as similar as possible except for the number of ADUs. After selecting six blocks to study, we divided them into three categories: low (0-4 ADUs), medium (5-7), and high number of ADUs (8+). We then distributed

30 surveys to randomly selected households on each block.²²

The surveys contained a wide range of questions about the resident's background information, qualities about their neighborhood, and their familiarity and opinions regarding ADUs.²³ The vast majority selected positive adjectives to describe their neighborhood, but most said parking was insufficient and difficult to find. The majority were familiar with the term ADU, and about 20% had an ADU on their property. A majority agreed that ADUs are an unobtrusive way to increase density and most respondents disagreed when asked if ADUs disrupt the character of their neighborhood. However, while most respondents said that more housing should be built in the San Francisco Bay Area and throughout the city of Berkeley, only very few respondents supported additional housing in their neighborhood. Overall, these results were fairly consistent and very encouraging for Berkeley's proposed ADU legislation, which was being debated at the time of the stud but has since been adopted.

However, answering our initial research question required further investigation of the survey data, as well as comparison to data collected from the US Census and the American Community Survey (ACS). In addition to having data to compare against the survey respondent's background information, we also knew how many housing units and how many residents lived on each block.

Despite the wealth of information that we had about the area and the survey respondents, we only used two main criteria to evaluate our hypothesis. The first was

to compare the actual versus estimated number of units and residents on each block and compare the differences across the three groups (low, medium, and high number of ADUs). The second was to compare how residents of each block answered questions about whether they felt their block was crowded, and whether it had become more crowded since they first moved there.²⁴

After averaging the responses from each block, we found that residents had fairly accurate estimates of the number of people on each block (the estimated mean for most blocks was within 5% of the actual value). The blocks containing high numbers of ADUs were no more or less likely to overestimate the amount of residents on their block.²⁵

Residents, however, were less accurate in estimating the amount of housing units on their blocks. All together they underestimated the number of units by 30%. The blocks with the highest numbers of ADUs were slightly more likely to underestimate the number of units on their blocks. This result reinforced our hypothesis that there would be no correlation between the number of ADUs and how density would be perceived.²⁶

The second criteria proved a little more complicated. When comparing the perceptions of crowdedness on each block, we found a slight correlation with the number of ADUs on the block.²⁷ This correlation, however, was not enough to be statistically significant. When we investigated further, we found that the correlation was slight because it applied to one of the high ADU blocks but not the other. The block that was perceived to be more crowded had a much higher share of multifamily units than the other five blocks. Because of this, it would be difficult to attribute the increase in crowdedness specifically to the greater number of ADUs.²⁸

Future studies could benefit from larger sample sizes to increase the confidence of the findings. While our research question could not be answered conclusively, most of the results supported our hypothesis. Looking across the entire survey, the number of ADUs on a given block was one of the poorest indicators of how someone would answer the other questions. In addition to being largely unperceived, the supplemental income generated through their rent indicate why their surveyed perception was so positive. Importantly while their architectural complexity may vary, their inability to be easily or immediately perceived shows not only why their popularity amongst both residents and policy makers alike has increased, but why they serve as a strong starting point for further explorations of the subtle. Yet for all of their benefits, ADUs' potential remains limited both by conventional understanding of policy as well as a typological form that remains unchallenged.

The Financial Challenges

One of the challenges of construction an accessory dwelling unit is the price of construction. While homeowners can benefit from future income by renting out the unit, the upfront price of construction can exceed many homeowner's budgets. Other real estate products, like traditional single family homes and multi-family homes, have a wide range of products to help finance the purchase or construction of a unit. Prospective homeowners can use a small down payment to qualify for a much larger mortgage loan to purchase a home. Multifamily building owners, including duplex owners, can frequently borrow against the projected income of the additional units to expand the loan products and sizes available. ADUs, however, face many obstacles in finding an alternative to financing the full cost of construction up-front.²⁹

For example, complicated permitting requirements limit the amount of legal ADUs built in a given housing market. This makes the appraised “value” of an ADU difficult to determine due to the lack of sufficient comparables.³⁰ Additionally, permitting requirements are set locally, and can vary wildly across city lines. This makes the differences across the country too broad for national banks to develop a thorough enough understanding of the product to include in their lending portfolio. But as ADUs become more frequent, can an increased number of comparables encourage banks to adopt ADU financing products?

A mortgage broker from a local Citibank branch not only confirmed Peterson’s findings, but also suggested additional limitations for lending for ADUs. A major barrier to securing a financial product that loans against the projected income (such as those for duplexes) seems to be the title restrictions placed on an ADU. Unlike a duplex, the accessory unit cannot be sold independently of the main unit. At least for Citibank, this distinction means that the bank considers the ADU to be an extension of the homeowner’s primary dwelling. When an ADU is rented to a tenant, Citibank considers this situation more analogous to renting a room within your home to a boarder, rather than to a multifamily unit owner renting out a distinct unit in the building. Per bank policy, income generated from within an owner’s primary unit (whether from a boarder, an ADU, or Airbnb) cannot be used to back a loan.

While the evidence may seem daunting to finding lending alternatives for ADUs, there are silver linings that emerged from these conversations. Most importantly, these restrictions seem to be self-imposed by the banks to safeguard their investments. Research thus far has not encountered any federal or state imposed regulations

restricting loans for accessory units. This is important as it points to smaller, local financial institutions as potential innovators in this void of loan products. While national banks may never overcome the sheer variety in the regulatory landscape across city and county lines, local credit unions’ intimacy with their local markets can provide incentives to develop loan products in areas with favorable ADU legislation.

With an active community of ADU owners and advocates in Portland, Oregon, a local credit union has created a product to assist residents with a variety of property improvements neglected by traditional financial instructions.³¹ The “Rehab Mortgage” by Advantis Credit Union allows for owners occupying their units to borrow up to 90% of the improved value of the home, restricting to 75% for non-owner occupied units. The loan offers a range of fixed or ballooning payments across a 15-year term, at a rate that is only half a point higher than their traditional 30 year loans. Importantly, the loan explicitly mentions the construction of an ADU as an approved use of the money, along with a wide-ranging list of other approved improvements to a property. It is important to note, however, that this is still a different loan product than those offered to multifamily units. It is a home equity loan, borrowing against the improved value of the overall property, rather than borrowing against the projected income from the additional unit. While this is certainly an improvement to a complete lack of products, it may restrict a homeowner’s ability to borrow if their property’s collateral value is limited. For example, in an area with high construction costs, a low-income homeowner may not be able to generate sufficient loan value to construct the most beneficial ADU for maximizing rental income.

The Cooperative Center Federal Credit Union, based out of Berkeley, California, places homeowners of limited means in a similar predicament. A mortgage broker with the CCFCU described their limitation in lending for the construction of a new ADU is the lack of a rental history to justify a loan. While other home equity loan products would be available to help with construction, a loan based on the rental income's unit would only be allowed after several years of proven income from the unit. This places would-be ADU landlords in an impossible predicament: a loan for a rental unit can only be justified once the rental unit has been constructed.

The Policy Challenges

A 2014 UCLA study compared the ADU requirements, including parking, for the cities of Los Angeles County.³² The study used the City of Los Angeles' ADU requirements as a baseline measurement. For parking, the baseline requirements were as follows: 1 off-street space required, tandem parking allowed if permitted by zoning, no yard limitations, and no parking coverage requirements. The cities within the county that have published ADU regulations were assigned a score of 1 or -1 if the city had more, or less, stringent requirements than the city of LA.³³ Only five cities in the county has less stringent regulations than the city of LA, with the majority having much stricter standards. While looking at parking, the team found that there were 29 cities requiring more than 1 off-street space, 27 disallowing tandem parking, 61 requiring parking in certain areas of the property, and 27 having covered parking requirements.³⁴ Whether these requirements are

excessive may be difficult legal threshold to determine, but it is worth noting that in California, AB 1866 explicitly states the following:

It is the intent of the Legislature that any second-unit ordinances adopted by local agencies have the effect of providing for the creation of second units and that provisions in these ordinances relating to matters including units' size, parking, fees and other requirements, are not so arbitrary, excessive, or burdensome so as to unreasonably restrict the ability of homeowners to create second units in zones in which they are authorized by local ordinance.³⁵

Additionally, AB 2702 was proposed in 2004 to set a statewide cap on the maximum requirements permissible for accessory units. Although the legislation passed the legislature, it was vetoed by then-Governor Arnold Schwarzenegger for ignoring local contexts and overriding community decision-making.³⁶

Given the concerns over parking in many neighborhoods, this may not be a surprising source of limiting factors for constructing accessory units. The extent to which fire and life safety regulations limit the design configurations for ADUs, however, may be much more unexpected. The aforementioned UCLA study, for example, goes into detail about how the legislation passed in Los Angeles to solve the tenement overcrowding issues of the early twentieth century are placing excessive burdens on potential ADU builders.³⁷

One of the largest limitations is the prohibition on using alleys as a primary means of exit. Los Angeles requires a ten foot wide clear path of exit from the front door of a unit to the nearest street, yet alleys are not

legally considered streets in this legislation. Similarly, while driveways may satisfy this requirement for street access, many existing driveways in the city are not 10' wide. Solving this issue would require often expensive reconfiguration of the property, or a time-consuming public outreach process to be granted a variance. Current regulations also require code updates with a construction project as significant as an ADU. For example, if a single-family home owner lacked fire sprinklers in her home, she would be required to retrofit her home with sprinklers in addition to building sprinklers in the new accessory unit. While these regulations were adopted in good faith with the general public's well-being in mind, the increasing presence and pressure for ADUs invites an auspicious opportunity to revisit the effectiveness of these requirements.³⁸

Background Conclusion

The details of ADU benefits and limitations are important because they reveal several critical insights. For one, ADUs already exist in a murky regulatory zone. They don't fit neat descriptions, rules, or categories usually generated by the financial and public sectors. Rather than being seen as a limiting factor, this ambiguity can be leveraged as an asset allowing for formal experimentation that bends other traditionally hard-fast rules. In fact, the public sector is already showing creative and untraditional solutions to address ADU's existing limitations, opening the door to further deviation from convention. Secondly, while this research shows many substantiated benefits associated with ADUs, their limitations are equally as well understood. However, the limitations are usually evaluated as independent factors. This leads to improvements that, while helpful,

are predictably limited to their direct corollary. Reducing the required path of travel width to 8' would allow many existing driveways to serve as fire exits; separating the code triggers for the primary and accessory unit would reduce the capital costs required to build an ADU. Instead, applying the theories and qualities of the subtle allows for a much wider range of transformations by addressing multiple issues simultaneously. Minor and predictable tweaks are replaced by an altogether new typology that can increase the constructability of secondary units in the short-term, and provide a framework for increasing densification in the long-term.

This type of holistic re-thinking is already starting to gain momentum. While AB 2702 did not succeed, ongoing research and advocacy has led to a new push for revising ADU legislation at the state level. SB 1069, currently working its way through the State Senate, would ease parking requirements near transit, clarify some of the code triggers surrounding fire safety and sprinkler systems, and cap the maximum time to approve or deny a building permit.³⁹ If passed, it would ease the regulatory burden on ADUs statewide, bypassing the sometimes myopic land-use decisions made at the local level. The bill's sponsor, State Senator Bob Wieckowski, advocates that, "expanding the supply of these secondary units is not a panacea for our housing shortage, but it is an important step and will allow people to stay in the communities they were raised in."⁴⁰ A willingness to revisit and rethink the rules when they aren't working as intended is critical for chipping away at the region's housing crisis.

The Subtle

What is The Subtle?

Although not necessarily a gradient, the subtle occupies a space between the conceptual poles of the generic and the iconic, the polarized extremes of contemporary architectural discourse. The subtle proposes a delicate complexity that is not easily or immediately perceived. It stands in opposition to, but somehow between, the inherent dullness of the generic and the intrinsic flagrancy of the iconic.

More abstractly, the subtle also inhabits the nebulous threshold between reality and perception. As described in the introduction, the subtle can leverage differences between the actuality of the built environment and how it is perceived by residents for characteristics like density. ADUs highlight an example of increased density that goes largely unperceived by neighbors. If transformed into a new typology with increased subtlety, it proposes a strategy that could become sufficiently widespread to dent some of the rapidly rising rents in the Bay Area. Additionally, by serving as a camouflaged densification strategy, it may allow the desirable retail and transit opportunities of more dense, urban areas with a different and unexpected aesthetic character.

While conceptually rich and promising, the subtle may seem like a difficult idea to translate to visual elements. A deeper investigation, however, reveals a self-fulfilling subtlety that enriches its application to architectural and planning discussions. In other words, the application of its own definition is delicately complex.

Etymologically, the word subtle is derived from the Latin *sub*, meaning under, and *tela* meaning web or woven.⁴¹ Thus the word originally described the fine and delicate qualities of cloths and textiles and was only later adapted a more conceptual denotation. This vestigial visual reference becomes important in resuscitating the word's aesthetic interpretations.

In addition to its recollection of weaving, fabrics, and patterns the word subtle also has an oxymoronic relationship by relating to both simplicity and complexity. Subtlety requires a sufficiently delicate complexity to initially read as understated simplicity. A simple complexity, perhaps? It is neither too obvious of a simplicity, which implies the generic. Nor is it too loud of a complexity, which invokes the iconic. It occupies a sort of middle ground, containing aspects of both.

The language of patterns is referenced in another aspect of the subtle: the deviation from a self-generated sense of repetition and expectation. The subtle is quickly understood by camouflaging itself in the language of simplicity--a pattern that repeats and sets up an expectation. It is only under close examination that the complexity--the deviation from the pattern and the expected--is revealed.

Lastly, the subtle also connotes a wit or cleverness that filters information and complexity. For a joke to be subtle, it must be inherently missed or unnoticed by some of the audience. Though subtle as an explicit synonym of cunning may have receded into archaism, the themes it brings up in visual languages necessitates returning to this aspect of the word.

Etymological semantics aside, these explorations show the many intertwined and interrelated threads of subtlety. By weaving together different interpretations of subtlety from historical and theoretical precedents, this conceptual framework can yield more concretely visual sets of tools through pattern studies. Armed with simpler, visual relationships, designers can leverage these tools to distinguish their work from the iconic and the generic, and produce compelling projects that don't amplify the perceived rift between the professions and the general public. Not only can this assuage a local citizen's genuine concern with the repercussions of the iconic and the generic, it also weakens the invocation of design as an easy substitute for other (and potentially more problematic) concerns. Opponents of a below-market rate housing project would then have to establish their arguments on the merits of adding affordable housing, and not on proxy arguments about architectural style.

Applying the subtle to infill construction, however, would require operating with delicate complexity consistently at every scale. At the broadest, urban scale, the subtle describes the relationships of an intervention into the city fabric. It dictates the expression of figure, scale, and typology. At the neighborhood scale, the subtle expresses a purposeful relationship to surrounding buildings, both in individual and in aggregate. At the building scale, these factors operate equally as materiality, form, and precedent. Lastly, at the scale of design details, aesthetical subtlety forefronts the finest grain of decision-making that can reinforce the conceptual subtlety saturating the project. Each of these draws upon different aspects of references, patterns, and holistic experiences that comprise the three threads of subtlety.

While the concept of the subtle could be applied to any use of building, the Bay Area's skyrocketing rents suggest that a more nuanced investigation of housing could have the biggest impact in improving the region's affordability. If applied to the creation or reinterpretation of a housing typology and style that minimizes backlash and visual impact, neighborhoods currently overlooked as sources for new construction can become sites for unperceived units. Expanding areas of potential development could go a long way in helping the region redistribute new units and alleviate the burden on the few pockets that are currently being asked to solve a much larger problem.

Studying the history and theory of architecture and planning reveals that these concepts are not inherently new, even if they have never been formally grouped into a concept of subtlety. Three distinctly different threads can be discerned in the disciplines' shared language: the atmospheric subtle, the aesthetic subtle, and the allusive subtle. The atmospheric subtle is generated through subtlety as a field condition. It relates to the study of phenomenology in architecture and planning, where buildings can be designed as a set of multisensory experiences and aggregate into neighborhoods which have their own ineffable character and perception. Architect and theorist Juhani Pallasmaa highlights these qualities throughout Peter Zumthor's body of work.⁴² The aesthetic subtle is created in a particular instance in differentiation to the background condition. It is the misalignment of expectation and reality and can occur at the scale of the tectonic detail, the program, or the urban design. Many of these ideas were described in Florian Idenburg's lecture at the CED in 2013.⁴³ Finally, the allusive subtle is generated by referencing the precedents, history, or theory of architecture and planning. Through

understatement and wit, it filters the audience so that the allusion is not universally understood. These themes are extensively described in the writings of Robert Venturi and Denise Scott Brown.⁴⁴

The Atmospheric

"Atmosphere is my style" - J. M. W. Turner⁴⁵

While atmospheric qualities transcend all of the creative and artistic fields, some such as film, music, and painting are more commonly associated with these ineffable characteristics.⁴⁶ Across these works, and particularly in those of Turner, "the formal and structural ingredients...are deliberately suppressed for the benefit of an embracing and shapeless atmosphere, suggestive of temperature, moisture, and subtle movements of the air."⁴⁷

While atmospheric descriptions appear throughout the canon of architecture and planning, the late-twentieth-century philosophy of phenomenology most directly embraces and articulates these concepts. This loosely structured movement proposes theoretical and aesthetic constructs that center around the human body and its multi-sensory perceptions.⁴⁸ These concepts apply equally to the series of interior spaces buildings create, as they do to the ways these buildings incorporate into their site and amalgamate into the urban fabric.⁴⁹

Architect and prominent phenomenological theorist Juhani Pallasmaa defines atmosphere as the "overarching perceptual, sensory, and emotive impression of a space [that] provides the unifying coherence or character."⁵⁰ To him, atmosphere is attributed fully to neither the object nor the viewer, but instead lingers in between the two. Directly resulting

from this lingering is the paradoxical effect that the atmosphere of a space is perceived holistically before any details, characteristics, or meanings are intuited.⁵¹ Architect Peter Zumthor seconds this notion-- frequently describing his instantaneous reactions upon entering new spaces.⁵² These descriptions capture the association between the atmospheric and the subtle: the delicate complexity that is not easily or immediately perceived. In fact, Zumthor's criticisms of contemporary architecture feature striking similarities to this thesis' concepts of the generic and the iconic, in which "sheer profit, or, a will to build for the sake of building" drive the design rather than "how particular buildings become constructive parts of their surroundings."⁵³

This concern for integrating design into a particular place and context is central to Christian Norberg-Schulz's argument for the "spatial basis of meaning and identity."⁵⁴ Upholding the *genius loci*-- or spirit of a place--is where phenomenology's influence on urban planning and urban design begins to take shape. Theorist Gernot Böhme furthers this concept by arguing that it is not just the collection of buildings--or "objects"--that constitutes the atmosphere of a city, but also the quotidian routines and activities of its residents.⁵⁵ He also argues that while an atmosphere initially seems to be a completely subjective collective experience, he reverts back to examples from theater and film to support atmosphere's more tangible components. While set design successfully manipulates an assembly of objects, aided by deliberate decisions in sound and light, to create an atmosphere for an audience, atmospheric efforts often fall short in fields like urban design, in which the "observers" (the residents) are simultaneously treated like the actors and the audience.⁵⁶ Powerful atmospheric moments in urban planning and design, however, do

occur when the balance between actor and audience is challenged.⁵⁷ Examples include the sensory differences between walking along narrow lanes or wide boulevards, whether a city's streets are windy and hilly or long and straight, or surprising shifts in scales like stumbling upon a small church nestled between skyscrapers.⁵⁸

In studying the anti-development backlash emerging across the Bay Area through a phenomenological lens, the vernacular language of outraged citizens matches many of the theoretical concepts put forth by this group of theorists. Criticism of a design's incompatibility with the character of a neighborhood seems analogous to Norberg-Schulz's *genius loci*. And if buildings are expected to elicit a visceral response, criticisms of the generic would stem from a complete lack of an immediate, multi-sensory reaction. Displeasure with the iconic could be understood as the overwhelming and disorienting response elicited by a building ignorant of the area's context and traditions. While producing designs that seem familiar enough without veering into utter boredom requires a difficult balance, successful architects of the phenomenologist camp offer several examples worth study.



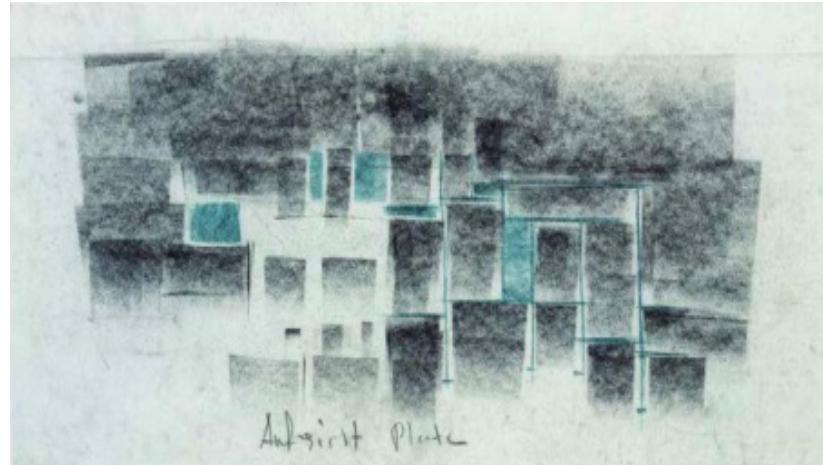
J.M.W. Turner's highly atmospheric style in *Rain Steam and Speed*

Peter Zumthor

"In a fragment of a second you can understand: Things you know, things you don't know, things you don't know that you don't know, conscious, unconscious, things which in a fragrant of a second you can react to: we can all imagine why this capacity was given to us as human beings - I guess to survive. Architecture to me has the same kind of capacity. It takes longer to capture, but the essence to me is the same. I call this atmosphere. When you experience a building and it gets to you. It sticks in your memory and your feelings. I guess that's what I am trying to do." - Peter Zumthor⁵⁹

Throughout his lectures, and particularly in his book titled *Atmopsheres*, Peter Zumthor highlights his sensitivity to the ineffable and immediate reactions buildings impose upon their viewers and users. Careful attention to details and materiality elicit a broad range of sensory experiences. The texture, color, tone, pattern, and reflectivity of materials are highlighted in his designs; form is understated. The details of a building's smell, temperature, light, sounds, and haptic qualities slowly emerge as initial reactions subside into a multi-sensory complexity.⁶⁰

While his drawings and models can elicit some of these complex sensations, theorist Juhani Pallasmaa draws special attention to his design for the Thermal Baths at Vals, and describes a "highly atmospheric architectural minimalism that creates a strong, embracing, and tactile feeling through a rigorous use of geometry, materials, and light."⁶¹



A particularly atmospheric drawing for Zumthor's *Therms Vals*



Built condition mimic the drawing's qualities

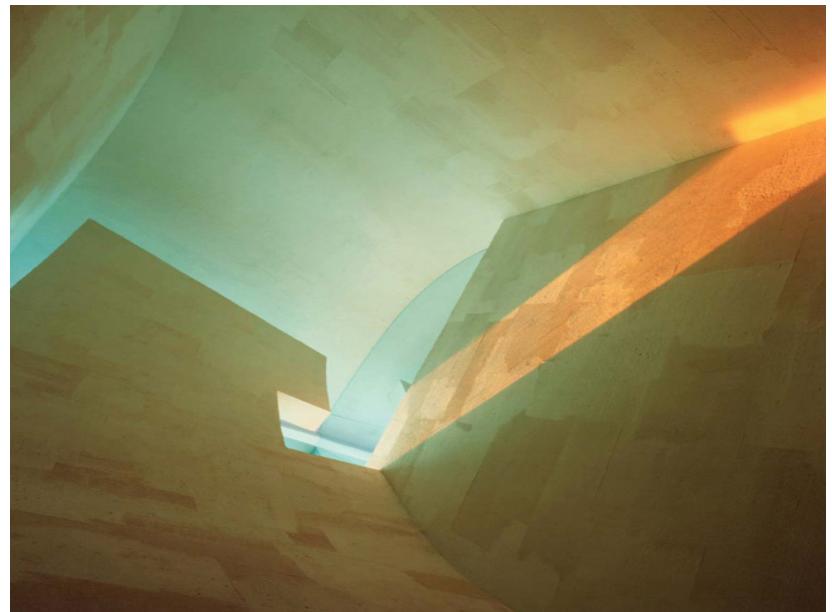
Steven Holl

"Phenomenology concerns the study of essences; architecture has the potential to put essences back into existence. By weaving form, space, and light, architecture can elevate the experience of daily life through the various phenomena that emerge from specific sites, programs, and architectures. A range of smell, sound, and material - from hard stone and steel to the free billowing of silk - returns us to primordial experiences framing and penetrating our everyday lives." - Steven Holl⁶²

M. Reza Shirazi dubs Steven Holl the "practical phenomenologist" as his theoretical interpretations of phenomenology are almost entirely structured through the creation of architecture and space. Underpinning his belief in phenomenology is a universal vocabulary of geometric architectural proto-elements, to which rich sensory experiences are embossed.⁶³ While believing in the specificity of sites in designing buildings, Holl also asserts that the poetic link between building and site leads to an entirely new third condition, containing the connotations and denotations of both. Historically, this connection was embedded in the specificity of materials and craft, but contemporary designs must explore new ways of expressing this specificity. He states the challenge as the critical balance between making a design distinguishable, while still expressing the connection and special features of the site.⁶⁴ In his own work, Holl delicately composes unique spaces through careful use of the following: color; reflection and refraction; surface; materiality; light and shadow; opacity, transparency, and translucency. Water and light are ascribed a particular potency as a phenomenological lenses, and he embraces time as another agent of design.⁶⁵



Ineffable lighting effect of Holl's Chapel of St. Ignatius



Detail of the reflected and colored lighting effect

While these themes arise throughout his body of work, the chapel of St. Ignatius at the University of Seattle highlights many of these atmospheric components. Inspired as “a gathering of lights,” Holl describes the project as “seven bottles of light in a stone box.” Colored glass inserts are hidden out of sight, but the reflection of colorful sunshine enlivens the chapel with unexpected and ever-changing qualities.⁶⁶ Tactile patterns and misalignments between forms and systems inject with more unpredictable complexity to a holistically soothing atmosphere.

Tadao Ando

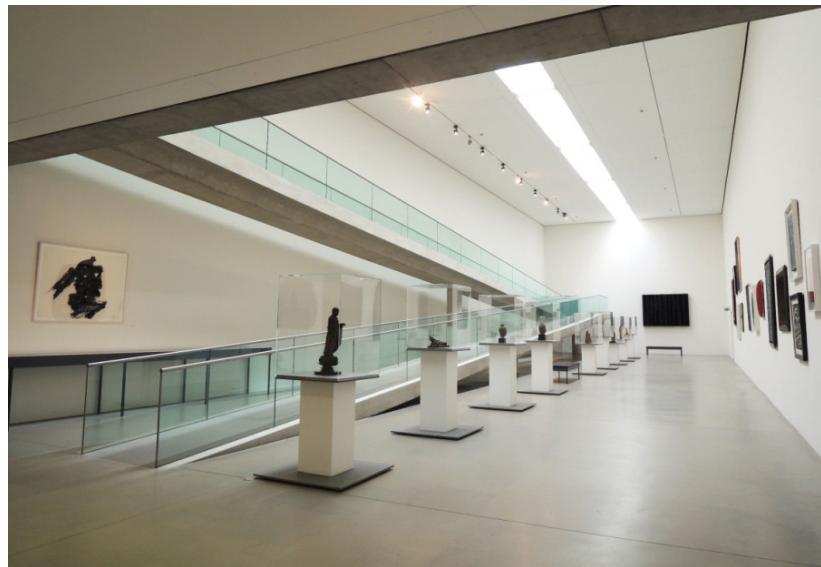
“A historical perspective on a project, an understanding of nature, climate, and ethical traditions, an understanding of the times, a vision of the future, and most of all, a will to bring all these things to bear on the problem to hand -- the absence of any of these things weakens the work of architecture, yet none of these things ought to be apparent in the final work.” -Tadao Ando⁶⁷

While Tadao Ando never explicitly references or endorses phenomenology, “his manner of contemplating architecture is analogous and parallel with the way that architecture is contemplated by architectural phenomenologists and philosophers.”⁶⁸ As evidenced by his above quote, the importance Ando places on site specificity connects directly to the phenomenological concept of *genius loci*. Similarly, Ando’s vehement opposition to the universalization and standardization of modernism, as well as his rejection of postmodernism as superficial have driven theorists to attribute phenomenological tendencies to his work.⁶⁹ By challenging the relationship between “the self” and “the object”, Ando mirrors the lingering liminal atmosphere

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The delicate rhythm of Ando’s Langden Foundation Museum



The interior’s apparent simplicity slowly yields to subtle details

described by Pallasmaa.⁷⁰ Another similarity arises out of his dispassion for unnecessary technology, preferring to engage the multisensory perception of the human body.⁷¹

Ando's design for the Langen Foundation Museum is presented as a particularly phenomenology design by Shirazi. The museum's overall form is quite simple, intersecting rectangular form that differentiate the museum's collection of historical Japanese art from the collection of contemporary Western art through uses of light specifically appropriate for each gallery space.⁷² A processional entryway dramatizes simple arrangements of materials, forms, and framed views that slowly reveal the complexity of these exterior component's effects on the interior spaces. The lightness of the contemporary gallery and the heaviness of the Japanese gallery are reinforced through the size and rhythm of the openings, and differences in the reflection of the sky and surrounding trees from the pool.⁷³ These subtle techniques saturate the simple form with rich atmospheric experiences.



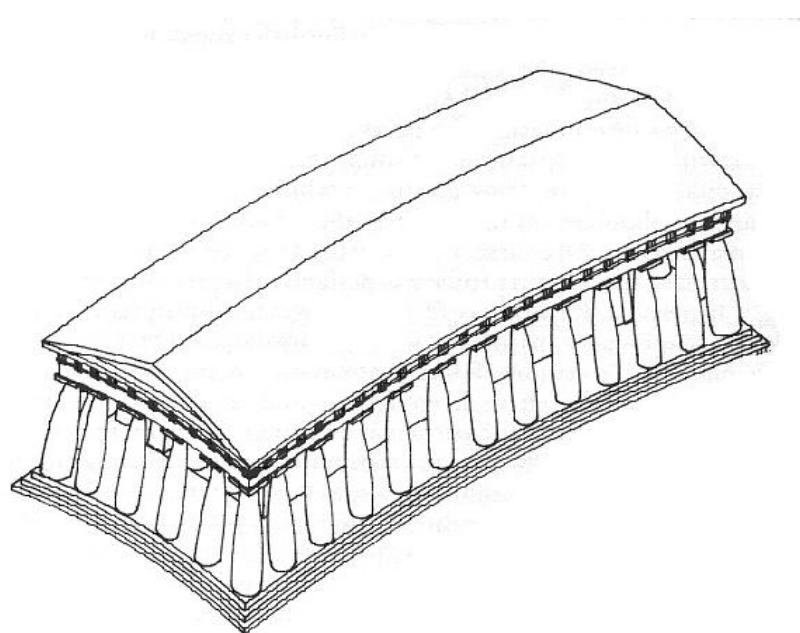
The building subtly combines material, patterns, form, and shadow

The Aesthetic

Whereas the atmospheric interpretation of subtlety relies on the multi-sensory experience architecture is capable of producing, the aesthetic relies primarily on visual cues to produce delicate complexity. It also differs from The Atmospheric in that it does not rely upon a single overarching philosophical construct to tie it together. While it limits overt commonalities between the examples that demonstrate its qualities, it allows explorations of architects and architecture from a much broader range of time periods and styles. In contrast, many of the most notable phenomenological examples come from architects who rose to prominence in the late 1980s and early 1990s. The history of visual subtlety in architecture, however, goes far beyond the contemporary era.

Although appearing for the first time in the writings of Vitruvius, entasis has been measured in Greek architecture dating to the 6th century BC. This term describes the “almost imperceptible convex curve” that offsets the human’s eyes perceived sagging of long, straight lines. Possible earlier attempts at entasis have been hypothesized to occur in Ancient Egyptian architecture as well. This departure from mathematically ideal lines was attributed with restoring the overall harmony of the design.⁷⁴ This example also reflects two different interpretations of aesthetic subtlety that categorize later examples. The first is a subtlety about minimizing appearance, making the otherwise perceived sagging disappear. The second is about departing from an idealized or anticipated condition, creating curved lines when straight lines are expected.

In contemporary examples, the first interpretation focuses around the use of glass as a building material. Designers distill architecture to its most basic elements and maximize the visual connection to the exterior. The second interpretation focuses on the intentional misuse of patterns, texture, materials, and volume to generate unexpected conditions creating a complexity through delicate layering.



An exaggerated drawing of entasis in Greek architecture

Glasarchitektur

"Glass, as a building material, offers a special interlayer between our outer and inner space, and has opened up and contained, as well as sheltered and revealed, the architecture of its time. Architects' pursuit of the minimal environmental envelope has created an evolutionary and reductionist approach, whereby glass has become a predominant and essential cladding material of contemporary architecture" - Brent Richards⁷⁵

Although glass has a long history in architecture, its decorative and limited uses began to radically change in the 17th and 18th centuries. The "democratization" of glass expanded its availability across social classes and its use from light to ventilation.⁷⁶ Industrialization spawned the availability of mass-produced glass, triggering investigations of glass as possible spatial enclosures not just as fenestration. These early efforts, and their significant impact on architectural thought, culminated in London's Crystal Palace in 1852.⁷⁷ The Crystal Palace provided a departure point for the Glasarchitektur philosophy and the early modernist movement at the beginnings of the 20th century. As glass and steel combined to break down traditional distinctions between roof, wall, and window, this historical material was opened up to the futuristic visions that followed the First World War.⁷⁸

In modern and contemporary architecture, the prominence of glass allows for distinctions between spaces that are volumetrically very distinct, while they are visually only subtlety separated. The potential aesthetic subtlety of glass buildings are perhaps exemplified from the glass houses of the mid-20th century.



The desired near-invisibility of Lina Bo Bardi's Glass House

Mies van der Rohe's Farnsworth House features large panes of glass, whose horizontality is emphasized by a steel structure that raises it off the ground, incorporating elements of Japanese minimalism and sensibilities about nature and space.⁷⁹ Philip Johnson famously quipped, "I have very expensive wallpaper," referring to his Glass House's almost total immersion into the surrounding landscape. But Johnson failed to mention that visitors and inhabitants in the house quickly, if only temporarily, also become part of that very wallpaper.⁸⁰

Lina Bo Bardi in her Glass House (*Casa de Vidro*) incorporates more nuance into her design than the pure openness of Johnson and van der Rohe. Raised much higher off the ground, Bo Bardi purposefully thrust her buildings "closer to nature."⁸¹ Additionally, the total openness and clarity were reserved only for the living spaces, while the private spaces were more protected from the building's inception.⁸²

While glass architecture has fully integrated itself into contemporary design, the notion of making the architecture itself disappear has receded.⁸³ As glass buildings incorporate technological advances into its color, shape, and form, the subtle sensibilities fade from all but a few contemporary examples. MVRDV's Glass Farm at first may seem like a strange example for subtlety. The project's use of glass imprinted with the textures of a vernacular farmhouse, however, shows a clever reinterpretation by making the glass disappear, even if the building does not. However, as the lighting conditions change throughout the day, their mirage's success ebbs leading to a rich complexity where viewers are unsure which is the material and which is the effect.⁸⁴



MVRDV challenges the initial vernacular expectation using imprinted glass



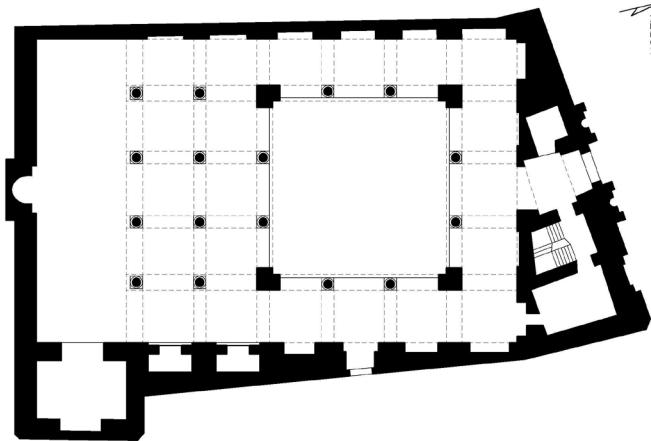
Closer view of the glass' printing, a moment where the illusion is exposed

Deviations from Expectations

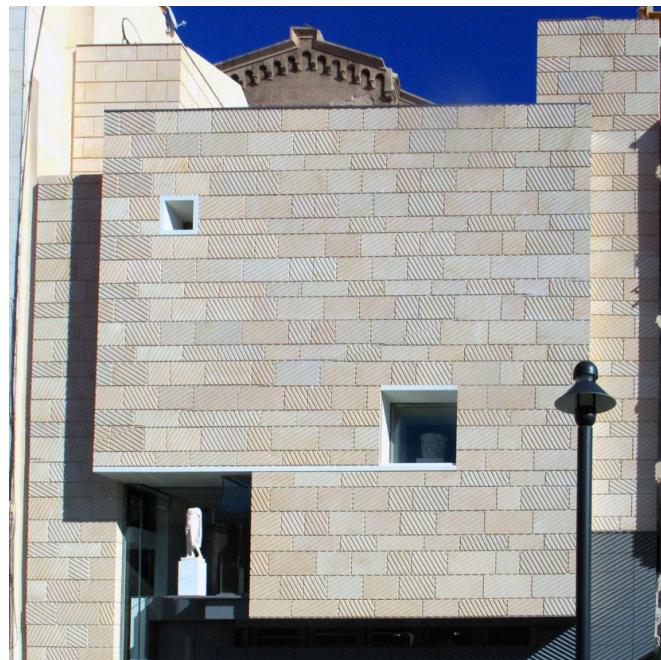
Glass exhibits aesthetic subtlety by eliminating the visual separation between spaces and volumes, but its material qualities are inherently homogenous since its molecular structure is what allows for transparency.⁸⁵ The Glass Houses use the material in large, simple sheets, with little detail or complexity expressed in the material itself. However, glass can also be etched, treated, and tiled to compose richer textures through the material's assembly. Instances of this richness are infused with additional complexity since it differs from its more common use as a sleek, simple material. In the same way that a Greek column's almost-imperceptible curvature disguises the depth of thought put into the material, an unexpected use of material highlights another interpretation of aesthetic subtlety.

This branch of subtlety is particularly rich, as architects have long used cleverness and wit in deriving unexpected solutions in solving problems. Cairo's 12th century Al-Aqmar Mosque features a particularly subtle façade intervention to reconcile the misalignment between the mihrab's orientation towards Mecca (qibla), and the irregular axis of the street. While previous mosques rotated the entire building towards the qibla, the political significance of Muizz Street necessitated a new design solution. The designers thickened the façade wall into a bulky wedge. This allowed the façade to receive elaborate carvings and patterns while simultaneously absorbing the difference in the angles between the street axis and the qibla. This almost-imperceptible solution enriched the design beyond what would be possible if the axes were perfectly aligned. It also provided a new template, which was imitated throughout the Muslim world; its influence can be seen in projects as grandiose as the Shah Mosque in Isfahan's Maidan-e Naqsh-e Jahan four centuries later.

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The Al-Aqmar Mosque absorbing the rotation in the façade



The subtle patterns in Moneo's Roman Theater Museum

More contemporary examples are equally plentiful. Spanish architect Rafael Moneo has incorporated subtle techniques throughout his long career. His design for the Kursaal Complex in San Sebastian, Spain exemplifies the delicate layering of many of these techniques. Inspired by the rocky cliffs of Spain's northern coast, Moneo envisioned the set of buildings as two boulders along the beach. The quadrilateral forms present themselves initially as rectangular volumes, but a slight twist and angling invoke a sense of dynamism and movement from the exterior.⁸⁶ This asymmetry is also meant to subconsciously guiding visitors' circulation within the building.⁸⁷ The building's translucent dual-skin façade disguises the structural elements while allowing maximum illumination, but even this system is layered with additional complexity. The structural grid mirrors the skewedness of the building's form, invoking the diagonal striations of geological formations. The dual-skin allows for maximum protection from the salt and heavy winds of the sea-adjacent site, which further tempers the light quality by using slightly curved strips of glass instead of flat ones.⁸⁸ The overall effect is that a project that initially appears to be a glass cube, slowly washes its observers with an intricate complexity that provokes curiosity and invites further exploration of the building.

Throughout his works, however, a fascination with diagonal lines and textures enrich his projects in similarly unexpected ways. The relatively simple concept manifests across his buildings with a stunning variety of uses. In the Roman Theatre Museum in Cartagena it is used to texturize an otherwise flat, imposing wall.⁸⁹ In the Cathedral of Our Lady of the Angels, diagonal textures carve out windows and reinforce religious iconography. In Columbia University's Northwest Corner Building,



Kukje Gallery's Interior and exterior envelopes are delicately pulled apart

Moneo employs diagonal metal elements to create sun-shading devices and to conceal the building's mechanical spaces. While not only providing an understated signature across his projects, he masterfully uses texture for unexpectedly functional and site-specific uses.

Similarly, architects Florian Idenberg and Jing Liu of the firm SO-IL reveal clever and unexpectedly complex design solutions throughout their projects. Journalist Zach Mortice praises "the firm's technical- and material-driven innovation produces avant-garde form without any preening iconicity."⁹⁰ In his 2013 Berkeley lecture, Idenberg chronicled many of the subtle details of SO-IL's more recent projects. In the Kukje Gallery, a chain-mail mesh draped over the building disrupts the crisp boundary between interior and exterior space, particularly when circulation elements like stairs puncture the building wall but are contained within the shimmery metal mesh.⁹¹ In their design for the Amant Art Space in New York, the rectilinear concrete

massing is smoothed over by four skylight structures that morph careful, curvaceous transitions between the sharp lines of the concrete. The result is a seamless and nearly-edgeless design that camouflages the edges of the building while diffusing light into the galleries.⁹² Their design for the Logan Offices use clever internal partitions to create a large, open work space while subdividing the office into more welcoming and private spaces. Translucent fabric walls and furniture that intersects glass partitions maximize visual connectivity without sacrificing productivity. Throughout their work, Idenberg and Liu challenge the conventional relationship between the building's parts to produce dynamic and creative solutions that incorporate familiar elements. Their projects produce a visual interest that is immediately, but not necessarily immediately understood.

The Allusive

Although the previous two threads of subtlety have substantial differences, they are linked by their reliance on a bodily reaction to physical space. The Allusive, however, differs in its awareness to subtlety through cognitive sense. This branch of subtlety achieves delicate complexity by lacing design with references familiar to certain observers. It too requires a delicate balance: if the allusion is too obvious, it loses any semblance of subtlety; if the allusion is too vague, it goes entirely unnoticed.

Architecturally, this balance is particularly tense. There are commonly cited and argued “extremes”—Modernism’s total rejection of reference, New Urbanism’s unapologetic neo-historical pastiche. However these blanket statements oversimplify nuances embedded within these movements, as well as diminish architecture’s (and planning’s) rich history of subtle reference and allegory. In fact, even though the allusive is not registered through haptic or visual senses, the human body represents one of the oldest references incorporated into architecture and design.

Throughout his Ten Books on Architecture, Vitruvius chronicles ancient architecture’s reliance on the relationships found within the human body.⁹³ While these bodily proportions are never overtly referenced in the built forms, Vitruvius credits these underlying references for upholding the pleasing proportions and symmetry of ancient architecture.⁹⁴ Thousands of years later, even Le Corbusier in his quest to design the living-machine homes of the 20th century creates his own version of the Vitruvian man to guide and proportion his buildings.⁹⁵

Equally important, however, are references to other buildings, styles, and architects that appear throughout the field’s canonical works. Common throughout earlier architectural eras, these references waned in the early- and mid-20th century with Modernism and the rise of the International Style. However, allusions began to reappear as the rise of Postmodernism challenged some of Modernism’s foundational tenets. Since then, projects with rich allegorical symbolism, overt imitations, and wittier nods, have successfully balanced reference and nuance and resulted in rich complexity tempered by allusion.

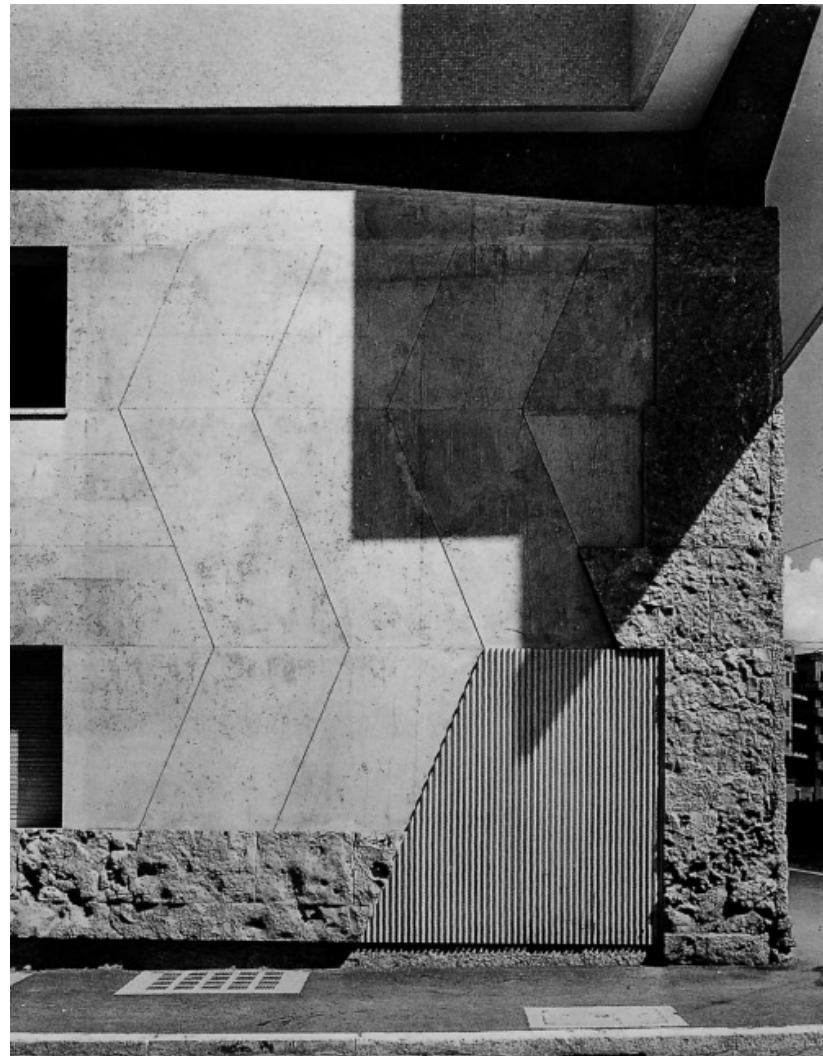
Luigi Moretti

"To see clearly and then be lost means to be enchanted: that is what Moretti asks of art and architecture." - Bucci and Mulazani⁹⁶

Luigi Moretti is an Italian architect who began his illustrious career in Rome following the Second World War. Particularly important is his design for Il Girasole, which embodies his departure from the architecture and style of his contemporaries. Il Girasole, or The Sunflower, is a low-rise apartment complex built in Rome in 1950. In it, a seemingly simple façade disguises a rich complexity in its design and bold architectural statements regarding volume, allusion, and whimsy. Initially criticized for its audacious conceptual innovations, the design borrows equally from the language of history and Modernism but rejects and reinvents the traditional roles of these elements to create unexpected experiences out of its simple elements. The clever inversions of precedence brought renewed attention to Moretti as criticism of Modernism gained traction in subsequent decades.

Although he incorporated material and formal elements from modernism, his allusions to historical precedents identify him as a pioneer of proto-postmodern design. Having studied Renaissance and Baroque architecture, references to these historical styles and ideas found themselves into Il Girasole's composition and formal tropes.⁹⁷ In much the same way, later Postmodernists discuss "reanimate[ing] history" in much the same way. The building was initially received with little fanfare. It wasn't until Robert Venturi paid homage to these aspects of Moretti's work in his book Complexity and Contradiction in Architecture, that the word really took note of the building. Further influence into Venturi's work can be found in the Vanna Venturi House, "which incorporates a strikingly similar aedicular split in its front façade."⁹⁸

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Il Girasole subverts traditional mass, shadow, texture, and pattern

The subtle expression of his critiques and satire are paired with an equally meticulous attention to architecture details that could just as easily categorize his work in The Aesthetic interpretation of subtlety. With his careful balance of material, form, and theory, "Moretti becomes neither an eclectic nor a modernist; rather, his work defies any easy categorization, even as one of the first, if rarely acknowledged, postmodern architects."⁹⁹

Denise Scott Brown and Robert Venturi

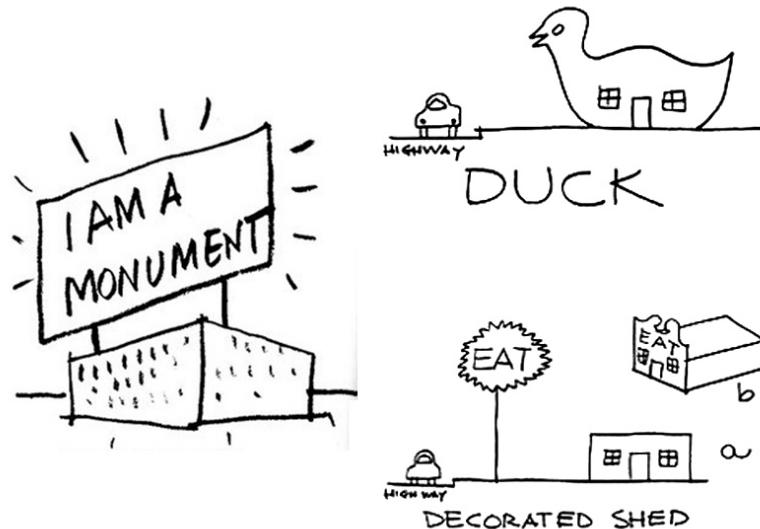
"Learning from the existing landscape is a way of being revolutionary for an architect. Not the obvious way, which is to tear down Paris and begin again, as Le Corbusier suggested in the 1920s, but another, more tolerant way; that is, to question how we look at things" -Denise Scott Brown¹⁰⁰

Criticizing architects' desire to demolish and redesign the built environment rather than add to it, Scott Brown and Venturi were prominent voices in the triumph of postmodernism over modernism in the late 20th century.¹⁰¹ Seeking to study the design of spaces that attract people rather than only those designed by architects, they inspired a generation of designers to find inspiration in the mundane.¹⁰² Their writing extensively explores the role of sign and symbolism in the form and design of buildings¹⁰³

As noted before, the works of Luigi Moretti also had a profound effect on Scott Brown and her husband Robert Venturi.¹⁰⁴ Describing extensively the role of meaning and form in architecture, Scott Brown and Venturi argue for a referential subtlety in books like, Complexity and Contradiction in Architecture and Learning from Las Vegas. In the former, Venturi rebels against the clarity of the "puritanically moral language of



The Vanna Venturi House incorporates elements from Il Girasole



Symbols in architecture, sketches from *Learning from Las Vegas*

orthodox Modern architecture.” Elaborating, he states, “I like elements which are hybrid rather than ‘pure,’ compromising rather than ‘clear,’ distorted rather than ‘straightforward.’ … I am for messy vitality over obvious unity. I include the non sequitur and proclaim duality.” Venturi and Scott Brown acknowledge the delicate balance between simplicity and complexity in their work, and even directly discuss issues of similar to The Generic.

Importantly, however, Scott Brown also describes the tension that can exist between planners and architects, and the efforts to silence those who try to bridge the two disciplines. Too often in the American context, she states, architects who consider planning are accused of being bad designers.¹⁰⁵ While the body of their work indirectly discusses the subtle meaning and symbols embedded in architecture, Scott Brown’s own experiences point to a necessary subtlety in any attempt to bridge the two disciplines.

Anna and Eugeni Bach

While Luigi Moretti preceded but shaped Postmodernism, and Denise Scott Brown helped legitimize it, the language of architectural allusions transcends to contemporary practitioners in design and planning. Catalan architects Anna and Eugeni Bach, of Bach Architects, bring a masterful and cheeky allusive sensibility to their present-day work.

In their design for the MMMMMS House in rural Cataluña, the Bachs were not stifled by local regulations dictating the form and materials of buildings in an attempt to blend all new design into the existing rural vernacular. Instead, they invert the usual relationship between materials and mimic the form of farmhouses



MMMMMS House: a cheeky interpretation of a Catalan farmhouse

instead of cottages to create an architecturally novel design that still highlights its contextual cues. Most unexpectedly, the house's extruded form suddenly transitions to a purely metal frame that creates an ample patio space that blurs the line between interior and exterior, and architecture and context.¹⁰⁶ It also alludes to Venturi-Scott Brown's Franklin Court project, which similarly envisions the conceptual and literal framework of a house.

Even when tasked with residential renovation instead of new construction, the Bach Architects are able to inject their cleverness into the design and allude to a project's historical roots albeit with a new interpretation. At the Urgell Apartment, the architects salvaged original tiles from various stages of renovation throughout the unit's history. Paired with some tiles from nearby apartments, the Bachs designed a tiling pattern divorced from the walls proposed in their current renovation but nodding to some of the apartment's previous configurations. Apart from layering in micro-historical references, the tile pattern gives a feeling of discontinuous continuity across the apartment's living spaces.¹⁰⁷

At an urban scale, the Bachs designed a plan for As, Norway that layers the city's context, existing buildings, and urban form into a design that again brings a refreshed outlook to vernacular precedent. The orientation of the proposed new buildings introduces a curvaceous forms of the surrounding urban fabric into the city center, without disrupting the site's orthogonal qualities. Developing a phase-able plan, the Bachs created a framework that can adapt the scale of vernacular buildings into more flexible ownership structures.¹⁰⁸

Precedent Conclusions

The subtle's connection to the built environment may initially seem tenuous. However, the canonical works of architecture and planning reveal a tremendous complexity in the way subtlety can be interpreted even within a visual language. In other words, the subtle's influence on architecture is itself quite subtle.

But the breadth of designers and movements who incorporate subtle aspects into their work is an equally important conclusion. A contemporary architect may interpret a call for subtlety as an attack on the freedom and creativity on the field. In reality, however, it is anything but. If the subtle can connect architects as different as Philip Johnson and Robert Venturi, and movements that span centuries as well as continents, its incorporation into design cannot seriously be accused of being overly limiting. The subtle is meant to open possibilities for designers; by acknowledging the delicate complexity of specific sites, an infinite number of architectures can escape the criticism of being too generic or too iconic.

The Possibilities

Public Sector Support

The growing support for Accessory Dwelling Units is slowly translating to political traction across the Bay Area. Cities like Santa Cruz, which has identified ADUs as an important part of their housing growth strategy, not only legalized ADUs but are offering substantive assistance to encourage homeowners to build these units.¹⁰⁹ Ranging from detailed “how-to” guides, to covering the costs of initial architect consultations, the city provides support throughout the permitting, design, and construction process. While information and requirements for ADUs can be found on El Cerrito’s city website, the content is fragmented across multiple pages and embedded into regulatory language that is unfamiliar to lay persons. A comprehensive but easy-to-understand guide to ADUs for El Cerrito could improve a homeowner’s confidence and knowledge in undertaking this major project.

The success of supportive efforts, however, is frequently limited by monetary constraints. Here too, a few municipalities have pioneered efforts to address the multifaceted components of financial considerations. El Cerrito has already taken the first step by approving and delineating the requirements for as-of-right approvals for ADUs.¹¹⁰ This drastic simplification of the permitting process lowers costs while enumerating fixed requirements for approval, lowering the overall risk of the investment. However, even when fully legalized, ADUs inhabit a liminal grey area between an independent second unit and an interior room being rented by a boarder. Traditional financial institutions are thus unsure of how to lend and support ADUs in a reliable and safe manner.

In areas where housing is already expensive, limited funding sources on top of already high construction costs forces many new ADUs to hit the market at high rents in spite of their smaller size. While community credit unions seem to be taking the lead in creating more flexible funding sources, the evolution of new financial products for ADUs remains extremely limited. Without widely-available financial products, the construction of ADUs is generally limited to residents who can afford to fund their construction out of pocket, and wary of not recouping their significant investments. However, two west-coast cities are showing particularly creative innovation in offering partial solutions to monetary constraints.

Seattle and Santa Cruz are unique in their creation of public financing schemes to help homeowners create ADUs--moreso if the units are reserved as below-market-rate housing. Seattle, with a thriving technology industry, is experiencing tremendous growth seeing much of the same pressures on its housing stock as San Francisco. Due to the high demand, King County has adopted a two-pronged approach to helping residents overcome the funding gap to construct accessory units. The first is an indirect approach, working with and encouraging the private sector to develop new loan products for this type of construction, particularly by promoting the use of ADU-generated income as collateral for the loans. The second is a direct intervention--the King County HOME Consortium. In exchange for reserving the new unit for a resident who makes 60% or less of mean area income, the homeowner can borrow up to \$14,500 in interest free loans.¹¹¹ This arrangement would also minimize the permit, utility, and impact fees that can often drive up the cost of a project significantly.

Santa Cruz cites several factors that have driven up the cost of housing and limited the available stock. In addition to the city's proximity to Silicon Valley, Santa Cruz is home to a campus of the University of California and has a large student population. Surrounded by a greenbelt, the city's ability to expand its physical footprint is limited, while high-density constructed is limited by Santa Cruz's desire to maintain a "small town atmosphere."¹¹² Consequently, the city has come to value ADUs as an important and valuable component to its affordable housing strategy. The city has created three programs to facilitate the construction of ADUs -- particularly as affordable units.¹¹³ The first program is the Technical Assistance Grant. Through this program, the City will help cover some of the costs for a homeowner to meet with an industry professional to get technical assistance for their specific project. This program seems to be limited by the availability of funds and is not directly tied to a future unit's affordability. The second program is an ADU loan. The City has partnered with the Santa Cruz Community Credit Union to offer loans of up to \$70,000 with a 4.5% interest rate in exchange for assuming an affordability covenant on the unit. Lastly, the City also offers a wage subsidy program in which 50% of labor costs are covered when hiring workers trained through the city's training program. This benefit is offered in conjunction with The Community Action Board of Santa Cruz County's Women Venture Project, with exact funding opportunities varying slightly from year to year.¹¹⁴

Both Seattle and Santa Cruz's programs offer important first steps in widening the financial tools available to homeowners looking to construct ADUs. Recognizing the seriousness of the Bay Area's ever-rising rents, El Cerrito can learn valuable lessons from these

cities. While many of the inherent design qualities of ADUs make them naturally conducive to lower rents, the cities are offering financial assistance in exchange for codifying the units' affordability in perpetuity. Facilitating financing strategies, however, is not the only action that cities and counties can take to increase the availability and affordability of accessory units. In fact, the boldness to pursue creative solutions that challenge conventional development strategies is an important lesson for El Cerrito to follow as the specific financial innovations themselves.

Renovating Regulations

If ADUs are to be considered seriously as a tool for denting regional housing prices, funding sources are not the only areas requiring drastic rethinking. Revisiting the regulations surrounding ADUs can be a major force in encouraging new construction. Reaching beyond housing policy, a holistic analysis of the regulatory environment reveals challenges arising from design, transportation, and life safety issues. In California, and likely in other states as well, there are additional challenges created from the mismatch in state and local policy objectives. While difficult to prove definitively, many local jurisdictions have been accused of creating purposefully difficult or confusing regulations to circumvent the state law mandating the wider-availability of alternative units.

While ADUs as a general concept appears to have broad political support, controversies can still arise when the details of an ADU proposal come to a vote. In fact, parking can be one of the most difficult regulatory hurdles to overcome in many cities, and movements to reduce parking requirements can be politically toxic. While Berkeley appears set to eliminate

parking requirements within a quarter mile radius of transit stations, even ADU-friendly Santa Cruz has been unable to eliminate parking requirements anywhere in the city. The most generous parking strategy adopted by Santa Cruz is allowing a driveway to legally serve as three tandem parking spaces.¹¹⁵ In contrast to state law prohibiting the adoption of arbitrarily high regulations on the type and number of parking spaces required, many cities have allegedly used parking requirements to purposefully discourage ADU developments. When parking does not preclude the feasibility of a proposal, at the very minimum, adds to the construction cost.

This is not to say that all regulation is bad, or leads to higher rents for the accessory units. The city of Piedmont, California has actually used parking and zoning regulations as leverage to increase ADU affordability. An ADU that deviates from the required setbacks, lot coverage, height restriction, or floor area ratio can seek a variance through a discretionary hearing. However, variances for unit size or parking requirements cannot be granted under any circumstances unless the ADU's rental rate is deed restricted for 10 years to be affordable to low-income, or very-low-income households. Given the city's quite laborious parking requirements--large homes with large ADUs are required to have up to 6 off-street parking spaces--requiring affordability for parking variances provides a major incentive to homeowners considering a second unit. In fact, this variance-for-affordability scheme is highlighted in the city's housing element as one of the primary ways for Piedmont to meet its regional affordable housing allocation; the city views these small-scale additions as more analogous to the single-family character of most of the city than larger, multifamily affordable housing buildings.¹¹⁶

For El Cerrito, the innovations explored by neighboring cities should provide a source of inspiration for the city to revisit its existing ADU policies and regulations. ADUs could sufficiently increase the density of the city to make expanded public transit feasible and sustainable, and could help reduce the city's reliance on automobiles. Revisiting the parking requirements now could encourage and implement more environmentally friendly transportation options now, rather than waiting for the full build-out of the block.

The city could also offer reduced or altered requirements for homeowners to deed restrict the rental prices to more affordable levels. Alternatively, all non-rent-restricted units could be held to smaller footprints in order to encourage lower market-rate rents through a square footage basis. These rules targeting affordability require a careful balance; the restrictions (or bonuses) must be stringent enough to encourage affordability, but not be so severe that they deter the construction of ADUs altogether. The variance-for-affordability scheme adopted in Piedmont demonstrates one way that options to build market-rate and affordable ADUs can exist side-by-side.

Other approaches could feature regulations that evolve as the built environment of the city, or a particular block, evolves. This approach could help cities reward homeowners who undertake these projects more quickly, and thus encourage the construction of more units overall. For example, El Cerrito could offer the first few ADUs on a block a reduced timeline for very- and extremely-low-income restricted units, while offering later ADUs slightly greater sizes to offset their increased timeline. This would reward homeowners who build second units quickly with a faster turnover to market rates, and help provide affordable units to struggling renters in the region in the short term. Later homeowners

would still be incentivized through larger square footages or rents tied to less restrictive tiers of affordability. As new units continue to hit the market in later years, the first few ADUs which are now charging market-rate rents would hopefully be kept moderately affordable due to the increased total supply of units. While this strategy would require cities across the region to work to increasing their housing supply, it demonstrates how regulations could be scaled to incorporate time and offer different benefits and trade-offs based on the projected short-term and long-term needs.

Scope and Scale

The lot, or parcel, serves as the basic unit of construction throughout the United States. While proposals to rethink this relation may seem radical or impractical, the existence of accessory dwelling units is already subverting the traditional understanding properties and housing configurations. Rather than fighting against these non-traditional qualities, embracing them could lead to new ideas for how accessory units can inhabit the already-built environment. What purpose were setbacks originally intended to serve? Can they be framed in a similarly problematic manner as the well-intentioned life safety codes of the early twentieth century? Can issues surrounding the perception of density be adequately dealt with through successful design interventions?

These questions challenge many of the commonly-held notions that limit how ADUs are understood today. But it is inconceivable to imagine adjacent homeowners wishing to build accessory units working in tandem to meet some of the more onerous conditions imposed by municipalities. For example, a shared driveway

giving access to two property's ADUs could solve off-street parking requirements without taking up the all of the buildable space required for the new units. Fewer driveways also means fewer curb-cuts, and potentially increase the street parking available in a neighborhood or block. Additionally, if the homeowners are in agreement, an ADU straddling two properties could expand the income-generating opportunities to owners of smaller properties, who can otherwise be excluded from ADU legislation.

Developer and policy aficionado Eli Spevak has already come up with one solution to the traditional limitations of property ownership. In an effort to reduce the costs of homeownership in Portland, Spevak manipulated the traditional understanding of the condominium ownership structure and created a legal ownership structure to sell an ADU and a primary unit independently. In his Portland development, Spevak built a four-unit condominium by purchasing two adjacent single-family lots and adding two ADUs. The condominium organization owns the common space (yard) on the property, while each separate unit was sold off to private homebuyers. While this project required rare and complex legal maneuvers, Spevak predicts that this ownership structure will become more common as the housing market places more and more pressure on potential homebuyers. By eliminating the square footage of the yard from the purchase price, his development highlights how untraditional challenges to common practice can lead to lower prices for home ownership.¹¹⁷

Another alternative process highlighted by Spevak is the cottage cluster model. In it, one or more single-family parcels reimagined to host multiple small units arranged around shared community spaces. Though not quite ADUs, these cottage clusters feature units of

a similar size but are all relatively equal to one another. This contrasts to ADUs subordinate relationship to their primary unit. However, an added benefit of the equality amongst the clustered cottages is that they can frequently be subdivided into their own lots. Not only does this add density to an established neighborhood, but it lowers the barrier for entry by reducing the amount of land necessary to own a home.¹¹⁸

Similarly, another proposal achieves similar results by skirting the definition of a single unit. Called the “microhouse house,” this proposal contains multiple quasi-independent units on just one single-family lot. It is able to do this by treating the units as bedroom suites, without a full kitchen (i.e., stove). Instead the separate one-bedroom suites shares a community kitchen and living space.¹¹⁹ While its imbedded communal lifestyle may not appeal to all potential residents, this approach reveals yet another source of inspiration for rethinking the conventional relationship between units and lots.

Scaled up to the size of the neighborhood block, this type of creativity unleashes new possibilities for ADU developments compared to present-day patterns. Banks (via the mortgage instrument) present the largest barrier to alternative configurations since lenders are often wary of not being able to recuperate their investment in the event of default. El Cerrito could promote some of the alternative financing schemes discussed earlier to remove or lessen this financial barrier. However, it could also simply remove the regulatory and zoning obstacles to these configurations in the event that two (or more) neighbors who own their homes outright want to explore a mutually beneficial collaboration.

Design and Relationships

Many Bay Area cities have determined that an intrinsic benefit exists in stipulating limitations and regulations for the appearance of building beyond traditional zoning elements like size and setbacks. Although the city of El Cerrito does not have independent residential design guidelines like some other Bay Area municipalities, the city’s zoning code and development standards are detailed enough to cover similar content. Whether codified into design guidelines, like San Francisco, or into the zoning, like El Cerrito, these regulations highlight a crucial area for developing more subtle approaches to ADUs. They are the manifested linchpin between design and policy--design policy.

The lens adopted in municipal design guidelines provides an interesting and unexpected counterpoint to the lens expressed in conventional zoning. Zoning imagines, almost exclusively, a hypothetical and idealistic reality. Design guidelines typically acknowledge the diversity of a city’s building stock, arguable a more subtle and nuanced planning document. However, the guidelines are usually seeking to minimize the difference to preserve a unified city aesthetic. In order to reconcile cities’ desired cohesiveness with architecture’s constantly evolving traditions, a new approach to the design guidelines must be concieved. For this, it becomes important to analyze the earlier precedents through the specific lens of ADU design.

ADUs are not a typical typology in the architectural canon. Particularly for the houses referenced here for the subtlety, it is important to note that those were designed as single-family homes on individual lots. The accessory dwelling unit does not have this luxury; their design must reconcile the fact that they are adding a unit in a space

that was not originally designed for this purpose. It is not an insurmountable barrier, merely one that requires explicit consideration.

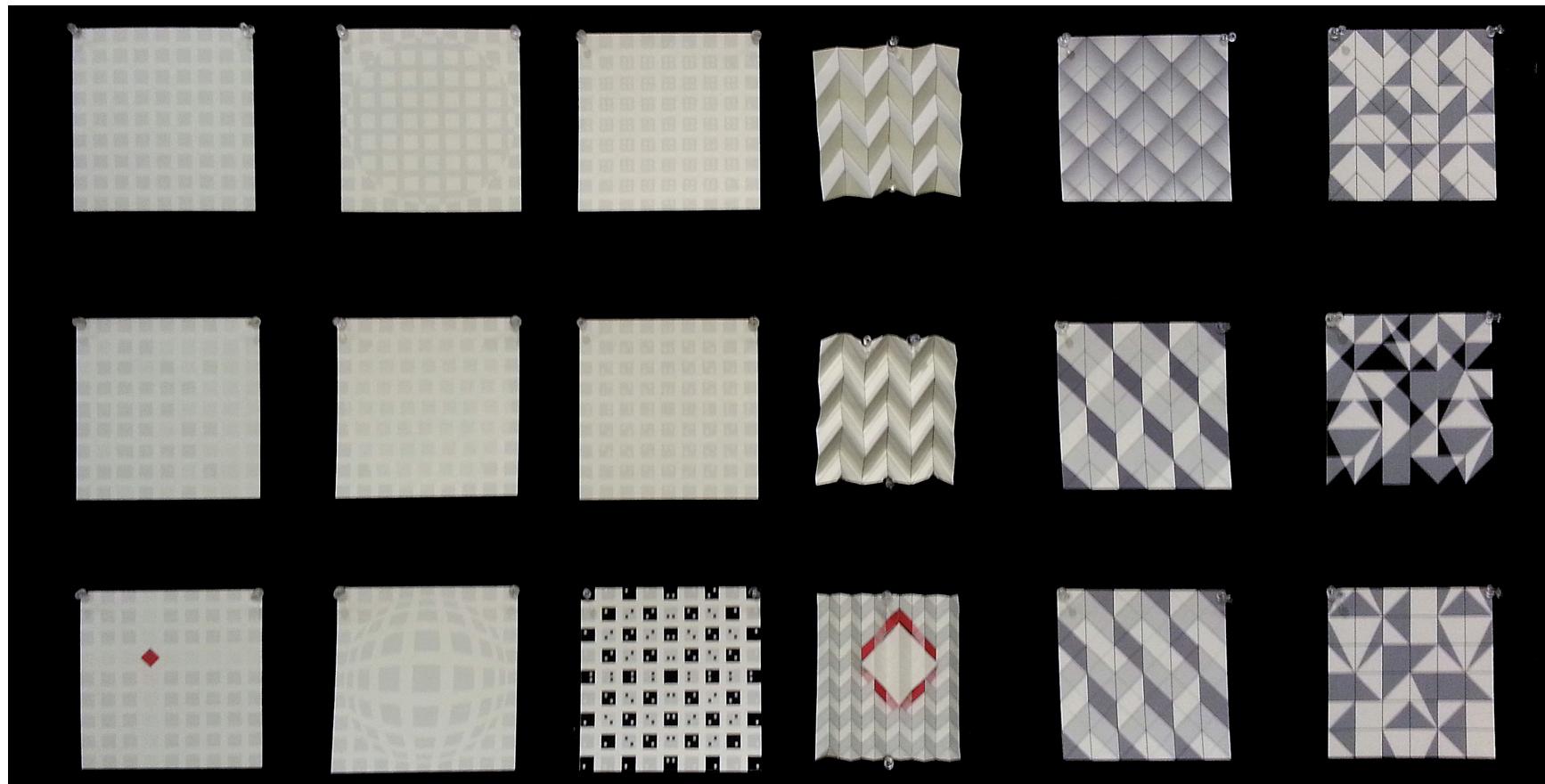
One aspect that necessitates a particularly subtle approach is the balance between privacy and procession. An ADU needs an entrance identifiable enough to assert its presence, and indicate a clear entryway for residents and visitors alike. However, this presence must be balanced against the privacy of the primary unit's inhabitants. To solve the unique design challenges surrounding ADUs, the precedents need to be distilled into more widely translatable sets of relationships in addition to the visual inspiration they provide. This interpretation of their usefulness on multiple levels is one that inspired the methodology that underpins the thesis' specific design proposal.

The Methodology

Graphic Patterns

Earlier sections of this thesis laid the theoretical groundwork for the understanding of how the subtle, the generic, and the iconic operate in contemporary discourse. While precedents and current events help clarify these intended meanings, distilling this information into a design strategy requires a different

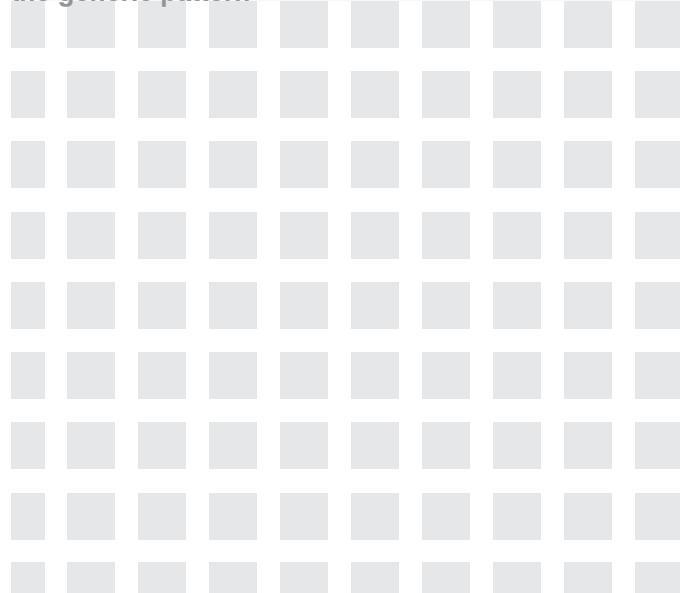
approach. In order to visualize these theoretical constructs, a series of pattern studies were created to explore possible graphic interpretations. Beginning with simple one-variable patterns (tone), the studies progressed by resolving these ideas across multiple variable systems: fold, fill, and line become divorced; projection and perspective are introduced.



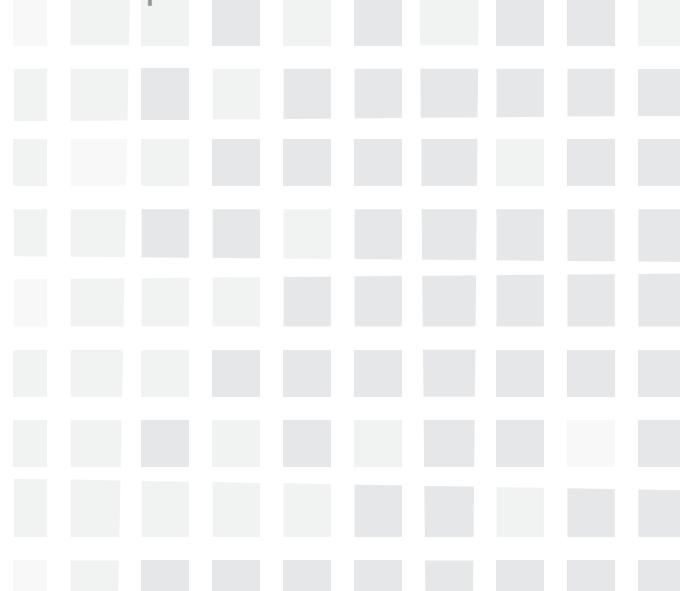
Grids and Relationships

The first set of patterns uses relationships within an interior grid to try and express some of the ideas embodied by each of the three categories. It uses changes in color, tone, and form to either reinforce or contradict the inherent rhythms and expectations. It begins to establish a simple visual language to express these categories and ideas. Further patterns build off this language to generate more complex and multi-variable relationships while still communicating the same ideas.

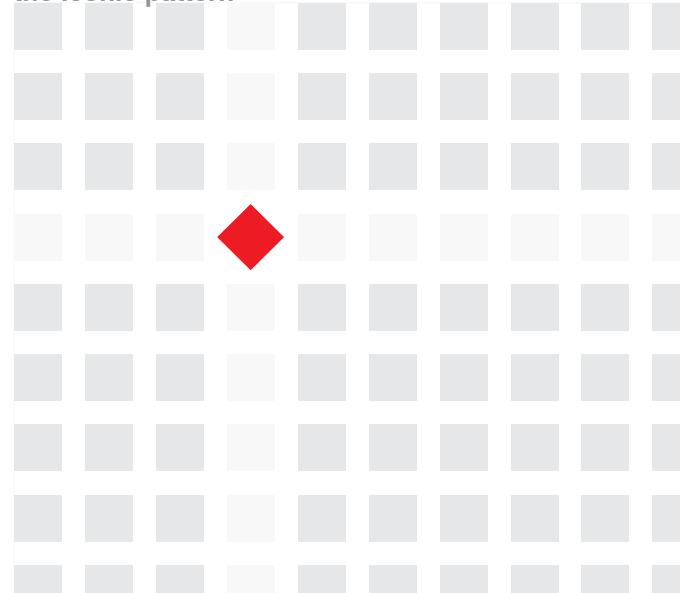
the generic pattern



the subtle pattern



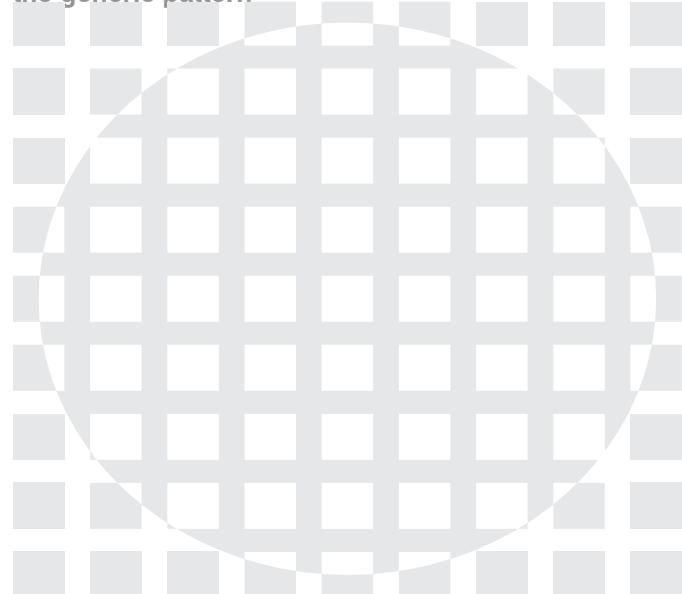
the iconic pattern



Primary versus Secondary Systems

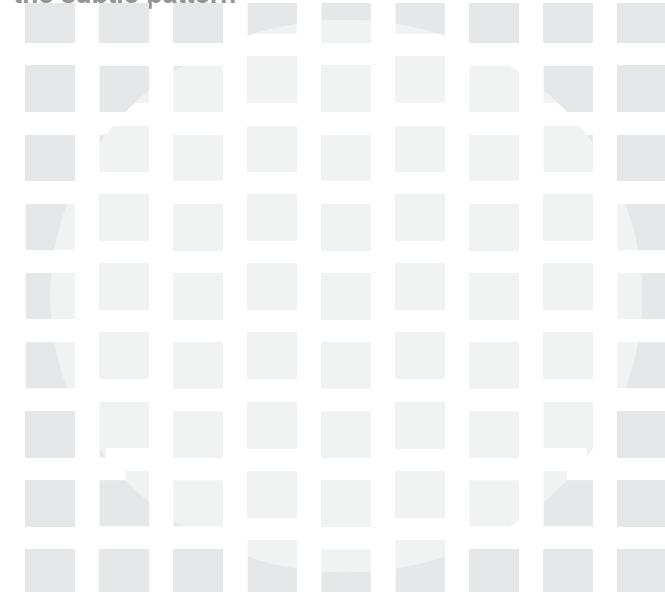
This patterns layers in a secondary system that is either reinforced or contradicted by the primary system to communicate the relationship between complexity and perception that each concept illustrates. While the two systems align in the subtle form, the difference is a minimal 10% desaturation rendering the relationship almost invisible. The generic pattern also aligns the two systems but in a much more obvious way. The iconic pattern differentiates the two systems by introducing a totally new language within the secondary form.

the generic pattern



Benejam

the subtle pattern



the iconic pattern

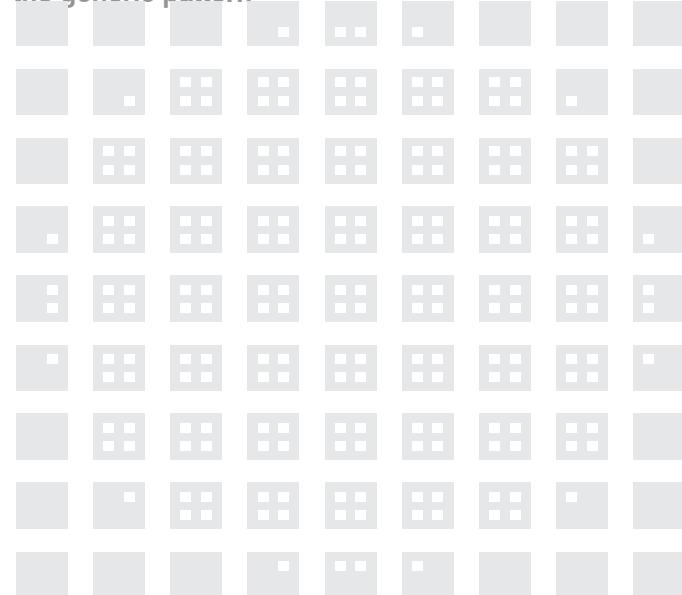


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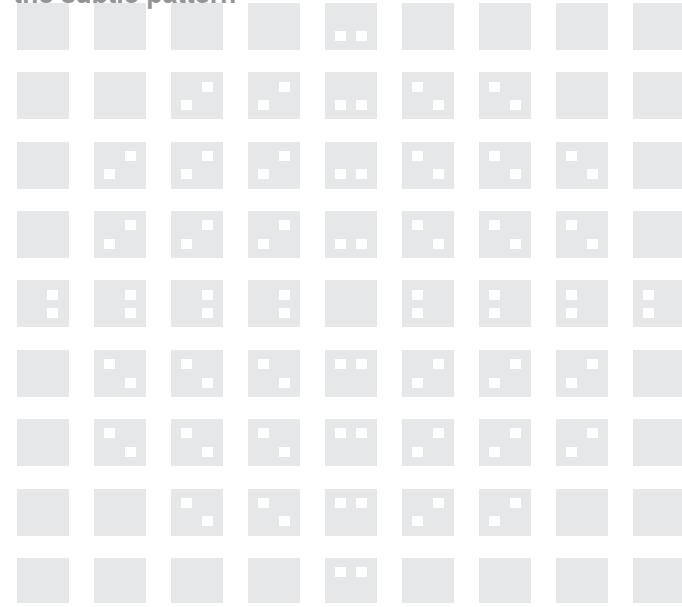
Multiple Systems, Multiple Forms

These build upon the previous example by adding a tertiary system that mimics the language of the primary to merely imply the secondary system. That is, the overall grid is differentiated by an internal grid that tries to imply a circle. The generic pattern simply pixilates the secondary circular pattern. The subtle pattern reduces the pixilation to only two internal squares that hint at the directionality of the circle. The iconic pattern uses tones to highlight the multiple differentiated systems, creating a complexity that masks the circle.

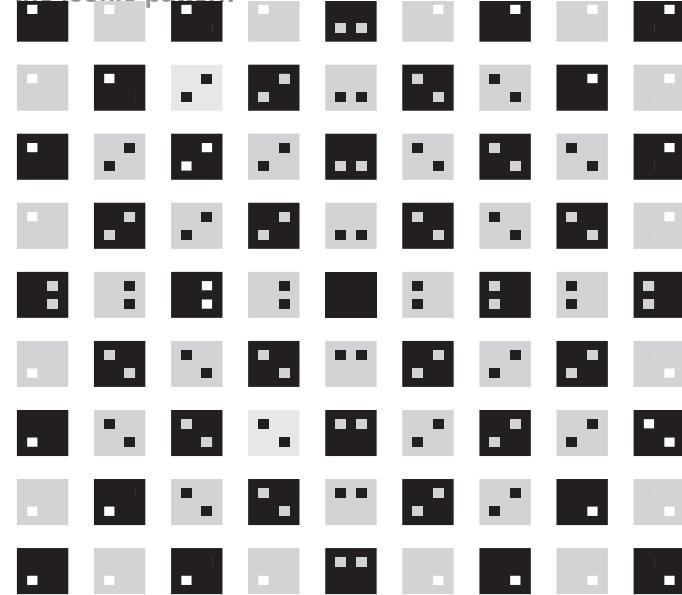
the generic pattern



the subtle pattern



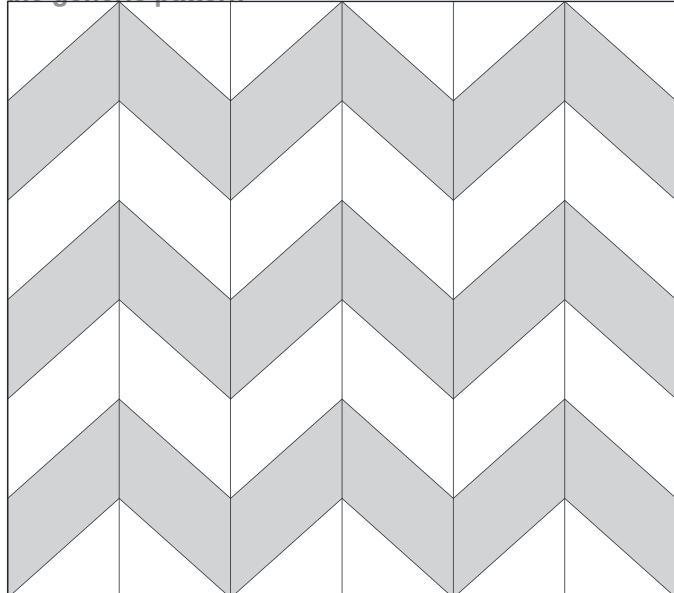
the iconic pattern



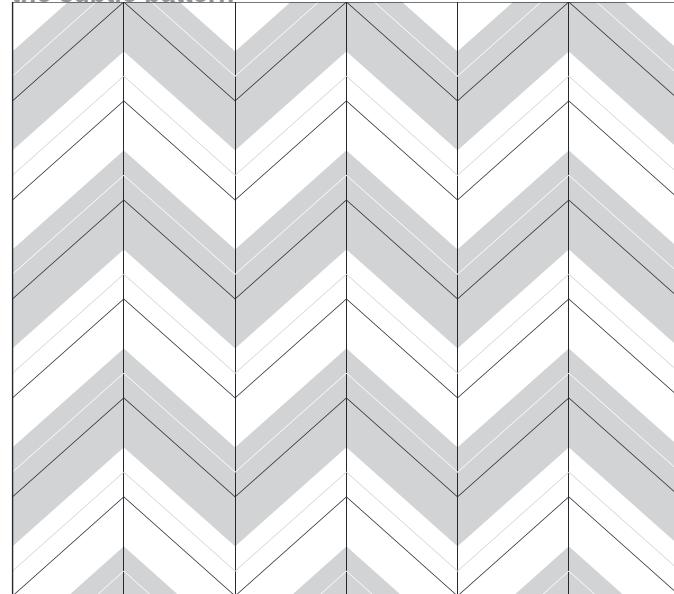
Fill, Line, Score

This pattern departs from the previous examples which only use solid fill to differentiate the various systems. It introduces lines and scores to amplify or diminish the reverberation between systems. The generic pattern aligns all three, setting up an expected pattern and constantly reinforcing it. The iconic pattern introduces a unified background condition of fill and line that juxtaposes a highlighted form through an alignment of color and score. The subtle pattern, however, takes the same pattern in all three systems but pulls them slightly apart to question which, if any, is the “correct” one. Though the images on this page are two dimensional, the photograph on the introductory pattern page shows the patterns in their intended three-dimensional state.

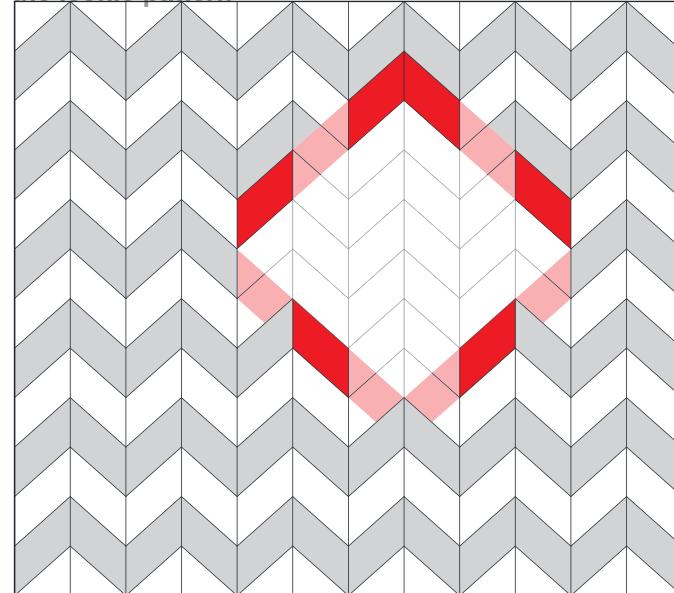
the generic pattern



the subtle pattern



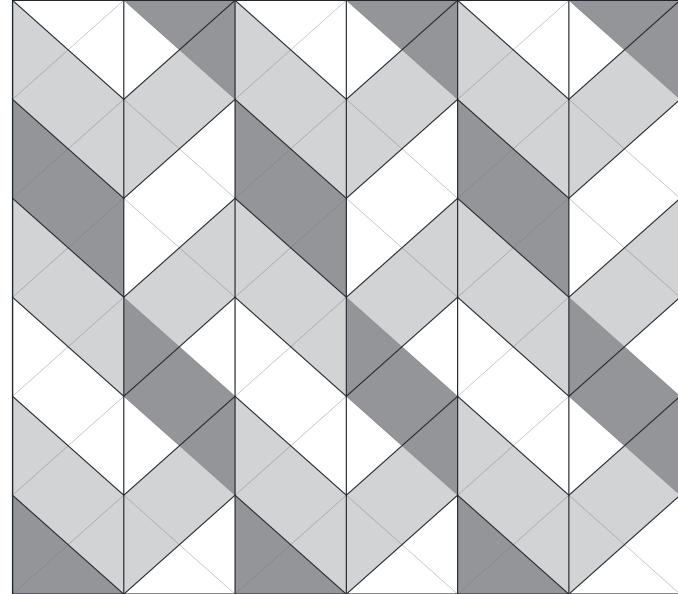
the iconic pattern



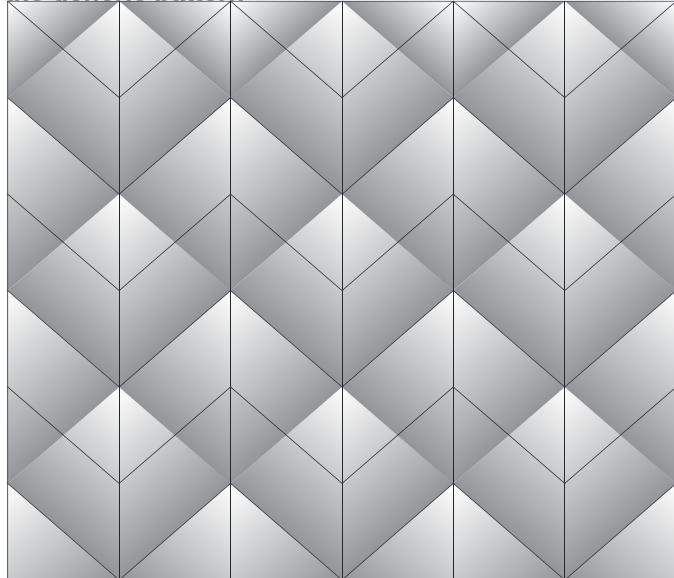
Patterns versus Projections

Here, the pattern increases the complexity of the relationships dramatically by elaborating on the idea of three dimensionality. Rather than introducing actual folding and volume, these patterns project a sense of depth through tone. Although the background system of line is identical in the three patterns, the use of tone elicits very different results. Though the generic introduces gradient, it serves to reinforce rather than contradict the chevron pattern. The iconic, however, deviates entirely from the chevron by superimposing an isometric cubic pattern. The subtle combines the two systems: light grey fill follows the chevron, dark grey follows the cube, resulting in an ambiguity more complex than either simple system.

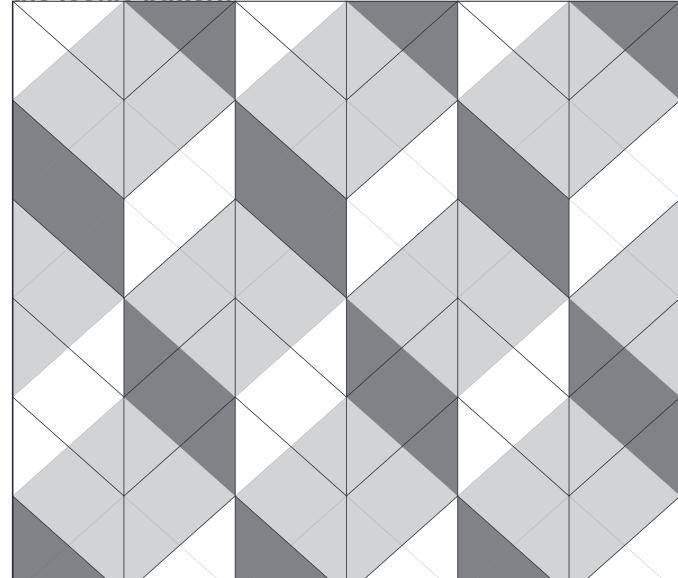
the subtle pattern



the generic pattern



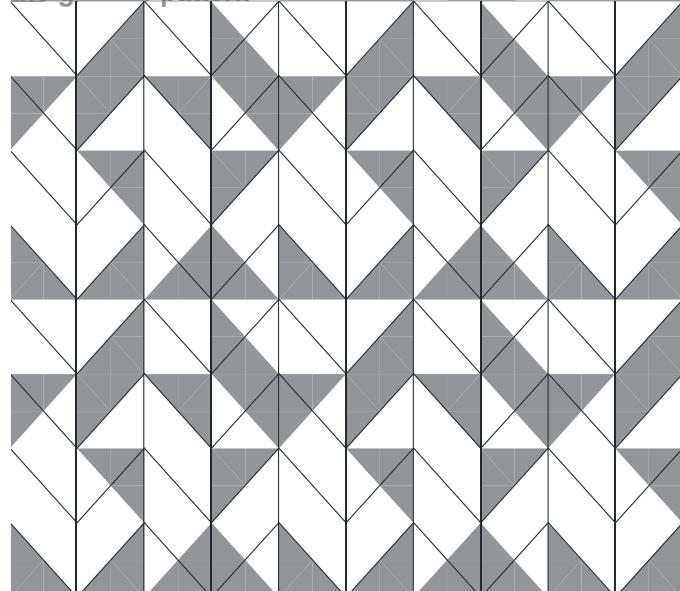
the iconic pattern



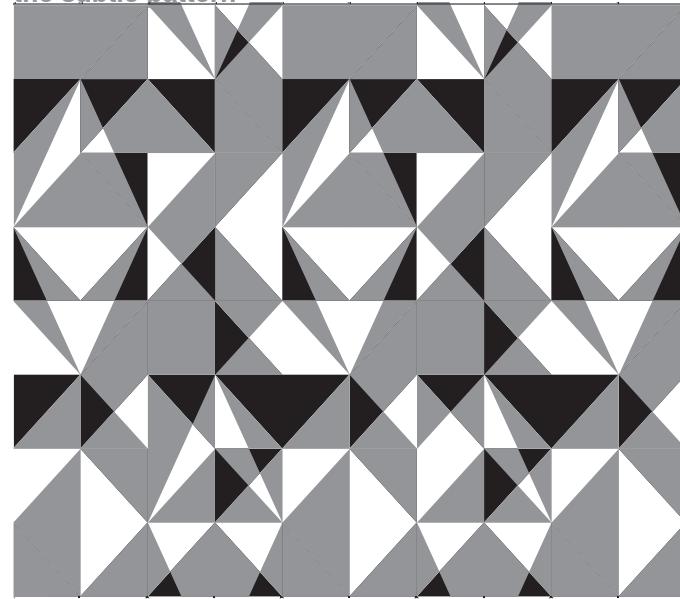
Compounded Projections

This final pattern abstracts the previous example by compounding multiple projections. The generic pattern shows a chevron fill pattern projected onto a three dimensional model of tessellated cubes, which is unfolded back into a chevron pattern. While certainly complex, the final pattern is composed of different arrangements of the same form. The iconic pattern projects a chevron pattern onto the tessellated cubes but unfolds it into a cubic, not chevron, pattern. The result is a pattern where the line and fill systems are comprised of totally separate languages. The subtle pattern shows the subsequent operation of both systems, eliminating the line pattern to reveal the inherent complexity of the fill. This set of patterns is meant to demonstrate a range of complexity of iteration through the analogy of palimpsest.

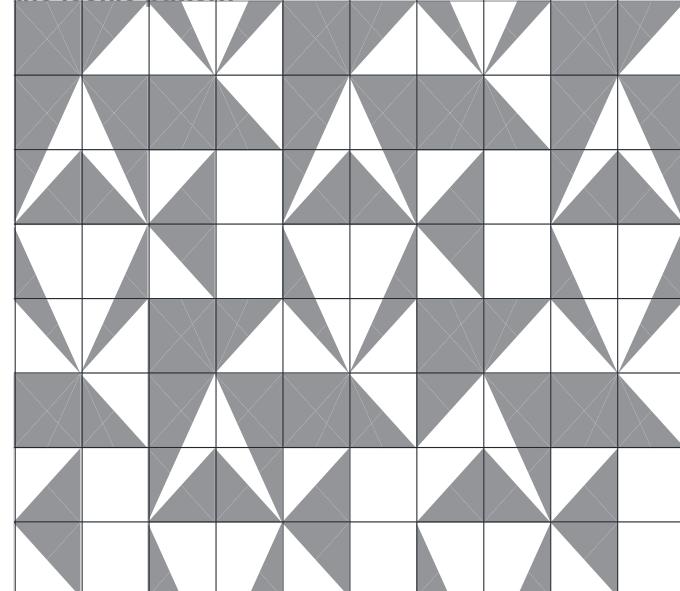
the generic pattern



the subtle pattern



the iconic pattern



Neighborhood Patterns

These patterns are not meant to be an exhaustive set of visual relationships or graphic manifestations of the subtle, the generic, and the iconic. Instead, they are meant to serve as a starting point through which to understand, and later to challenge, the relationships that guide the design and development of Accessory Dwelling Units. Subtlety is then not a singular calculation to create a delicate complexity; it is rather an almost infinite number of relationships that can be visualized in a series of patterns. They reveal a graphic understanding of Subtlety's different interpretations: the atmospheric (single instances versus field conditions), the aesthetic (deviation from expectation or rhythm), and the allusive (references from one pattern to the next). When translated to the patterns of urban fabric, these methods reveal the strategies for exploiting the existing gaps in code and policy by subtlety reinterpreting the assumed relationships between constants and variables.

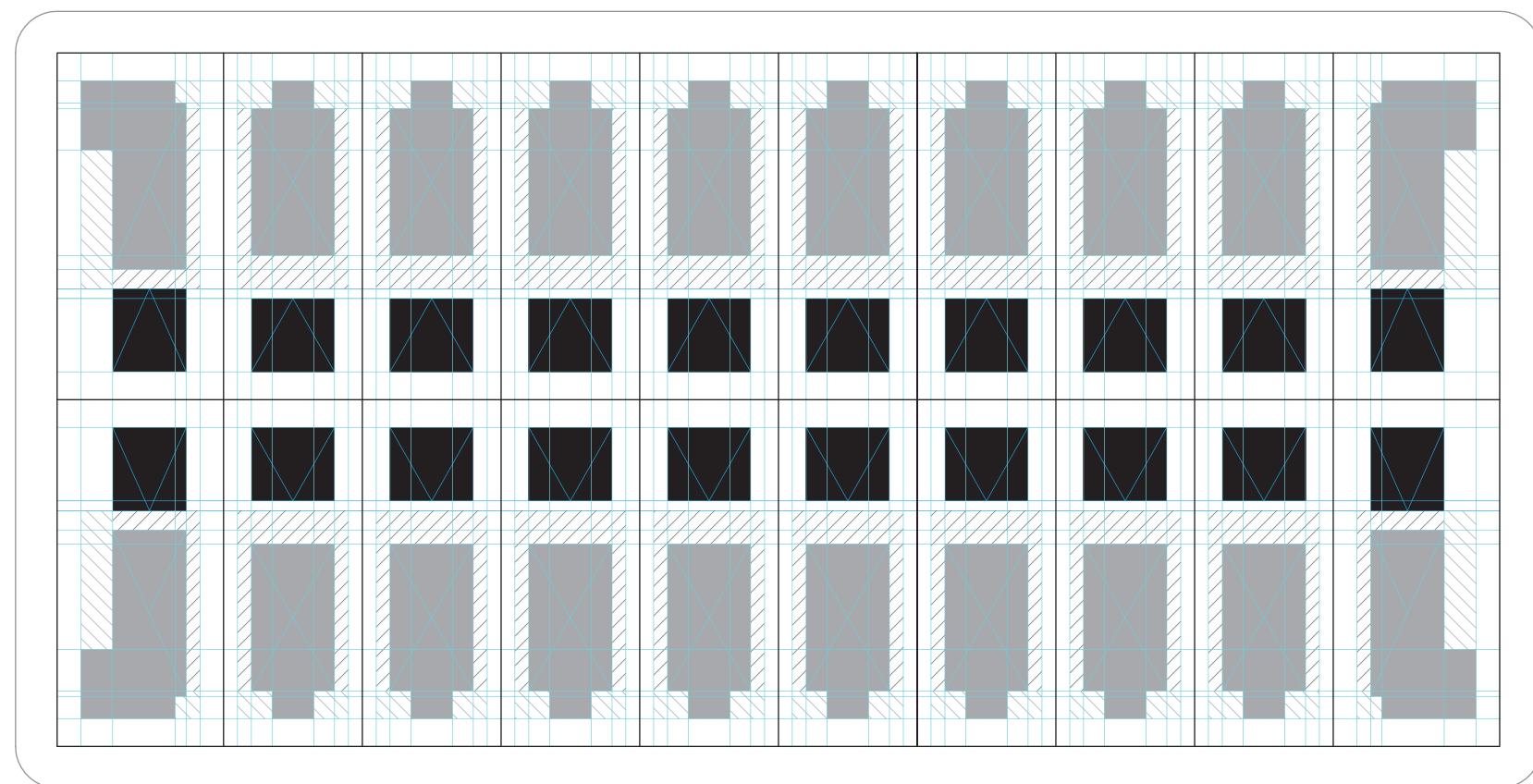
These initial diagrams reveal highly generalized, but simple to understand drawings of how the generic, the iconic, and the subtle could operate for ADUs. A hypothetical neighborhood block modeled after those in El Cerrito highlights the shifts in relationships and references as accessory units are examined through the three theoretical lenses. The baseline condition reveals the yards in between houses are substantial enough to be used for new units without overpowering the established rhythm of the existing primary unit façades from the street.

The generic orientation shows the full implementation of accessory dwelling units per existing policy. However, without challenging the basic relationship these units have to their primary structures, this strategy faces the existing challenges that have been so limiting in ADU construction. In other words, the outcome won't match the policy goals envisioned by proponents without reconsidering what an ADU could be.

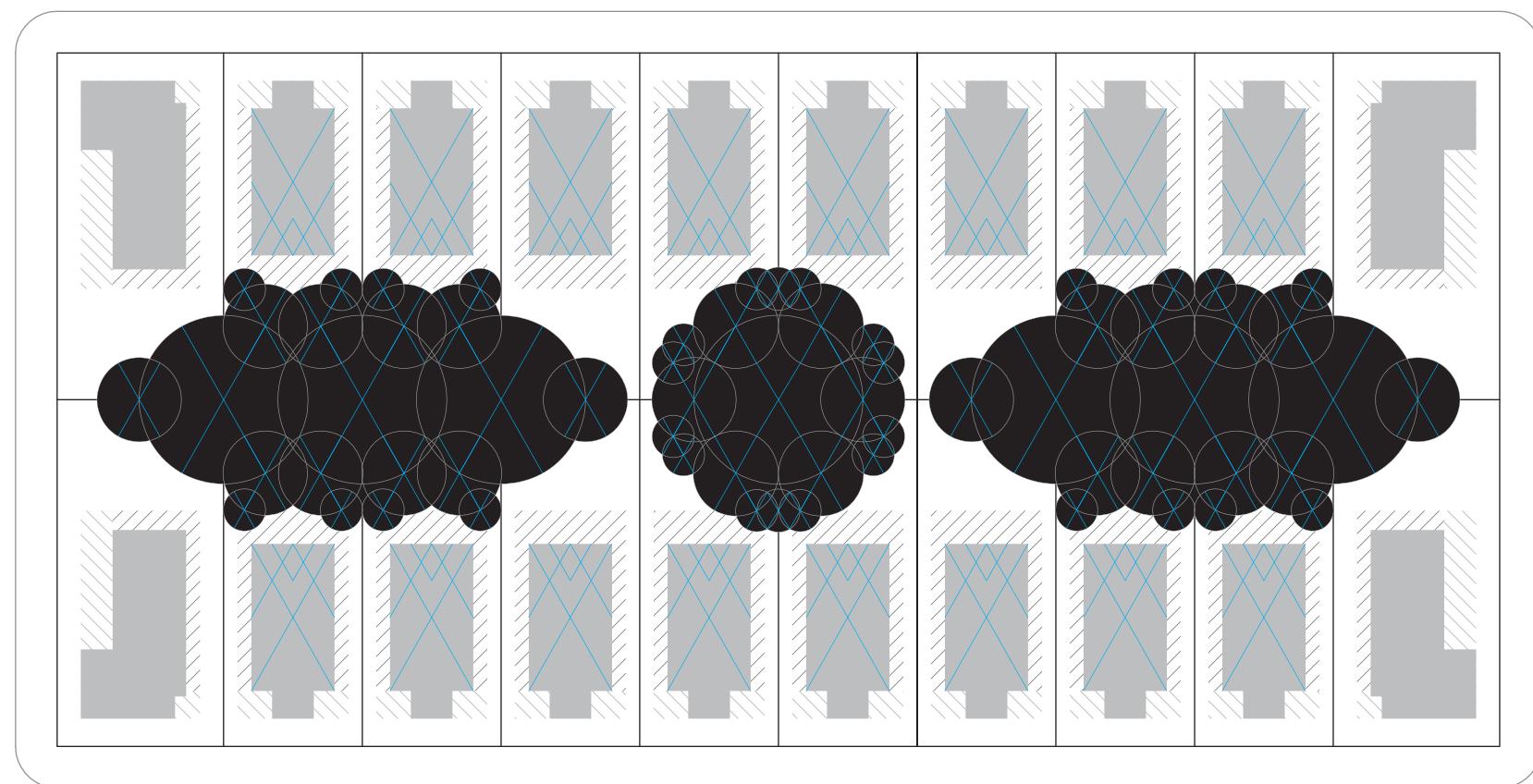
The iconic re-examination of ADUs draws upon the same set of scalar relationships as in the generic, but employs a formal language that is totally distinct from the main units. Freeing itself from code and policy limitations, it pushes the understanding of suburban infill construction. This approach however, requires widespread consensus, and in its absence, could create fatal backlash for any continued evolution for metropolitan inner cores.

The subtle approach layers delicate complexity at every scale but presents several benefits. Sliding units up to the property lines asymmetrically blurs the visual effects of property lines without triggering the legal complexities of straddling parcels. While building of the same scalar relationships of the primary units, this approach to ADUs also incorporates a cohesive language across the block. By considering units in their aggregate, it takes advantage of an adaptable pattern system that generates flexibility through its minimally perceived presence. It also presents a system that could be designed to evolve over time, generating less opposition along the way. Ideally, this could allow the neighborhood to evolve to a density higher than would be possible if all the changes were proposed and implanted at once.

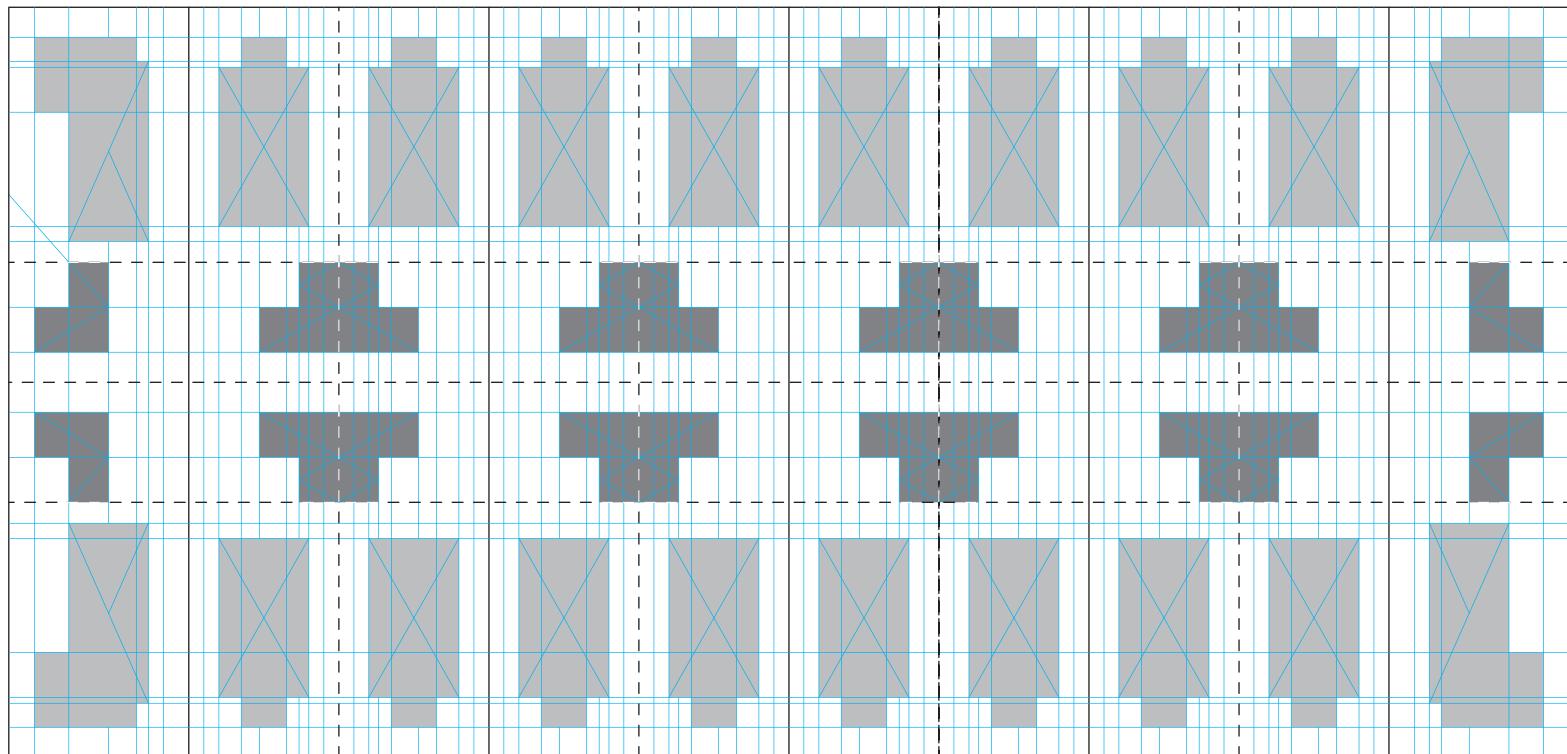
the generic pattern



the iconic pattern



the subtle pattern



Pattern Purpose

Armed with a theoretical understanding and a graphic approach, this thesis begins to challenge the expected relationships surrounding ADUs. Capitalizing on their great potential to increase density without amassing the public's discontent, a more subtle reinterpretation of the ADU typology could increase their viability as a partial solution to the region's affordability crisis. Importantly, these graphic exercises reveal the scalable nature of the relationships within the patterns. This scalability allows the patterns to inform ADU design at the scale of urban fabric as well as at the architectural scale.

At the urban scale, these patterns shift the prevailing paradigm from a singular construction project to an amalgamation of these units across a city block. The conversation changes from accessory dwelling units to accessory dwelling neighborhoods. Despite not always being visible from the street, as they become more common their impact on the character of a block will only increase. Because of this, it is important to understand how these units can relate and associate with each other, rather than only looking at their relationship to the primary dwelling. From a design standpoint, this brings up potential challenges to the fundamental process behind zoning as a generator of unit footprints.

As zoning laws took shape over the course of the twentieth century, they evolved from a mere separation of uses, towards today's documents that govern physical characteristics in addition to use. El Cerrito's zoning ordinances spell out all the requirements for development, from the maximum building size, to the minimum lot size; from the distance between buildings, to the height and width of chimneys. The zoning

document imagines a hypothetical universe, where the rules are identical for any two parcels of equal zoning designation. This served the city well in its initial era of development, when parcels were generally blank slates. Today, however, this traditional approach to zoning is ill-prepared to govern a city whose urban fabric has evolved through piecemeal additions and renovations (both legal and unpermitted). This inadequacy is directly exposed in the ADU ordinances in the zoning code. Most of El Cerrito's zoning policies are calculated based on lot size, which largely ignore changes in a building's size. Other policies that do relate to building size can invert the expected outcome. For example, the maximum size of an ADU is limited by either a firm upper limit of 750 square feet, or 40% of the primary dwelling's size (whichever is the smaller of the two). A large lot featuring a small house might actually be restricted to a smaller ADU than a smaller lot with a larger house. Zoning is often generalized, and lacks a fine-grain, time-sensitive approach that could be achieved through a more subtle reinterpretation.

At the architectural scale, a thoughtful questioning of the relationship between ADUs and their primary units leads to other opportunities. As the earlier research shows, ADUs as a typology face inherent limitations. Some of these--like statutory parking requirements--make the construction of ADUs in El Cerrito very difficult but could be addressed through policy changes. Other requirements, though equally well intentioned, have a more profound effect on the design process. El Cerrito has incorporated brief yet vague architectural compatibility standards into their second unit ordinances. Their intention is to repel The Iconic: construction of units that so radically depart from the

local context and scale that they become a detriment to the urban fabric. Their unintended result, however, leads to an almost codified regression towards The Generic. The compatibility standards require such a strict and clear connection to the architectural style of the primary dwelling that it often results in neo-traditional pastiche. While the compatibility standards highlight the *genius loci*, it squelches the *zeitgeist*--or spirit of the time. Because of this, El Cerrito's new construction imitates other periods in history rather than contributing contemporary design aesthetics and theories into an urban fabric that is already quite varied in style and time.

Instead, subtle reinterpretations of the architectural compatibility standards could address the spirit of the place as well as the spirit of the time. It could allow (and require) architectural designs that reflect the local character, history, and context, while allowing contemporary architects to innovate and express their present-day creativity. Initially, this sounds like a simple task: recognize the context while prohibiting direct imitation. In reality, however, subtle architectural standards require a specific generality that is difficult to achieve. The design details affected are of a scale that is hard to fully generalize into hypothetical drawings. However, they also cannot be so specific that it presents architects with an already established design instead of merely rules to follow. The visual aspects of the patterns studies start to reveal some of the ways that relationships can be expressed through graphic language

Site Analysis

After understanding the methodology through general patterns, it is then important to analyze the specific data of the site. This data will inform the ways the relationships and criteria can be tweaked to achieve subtle results instead of generic or iconic ones. Thinking specifically about ADUs, it is important to understand the individual components of the regulations to comprehend their overall effect as well as to reveal instances of incongruity.

The following set of drawings will look at a typical block in Midtown El Cerrito. The analysis reveals that only a very small percentage of the parcels on the block would actually be able to build an ADU, despite having sufficient space to do so. Each factor is studied independently and is then compared to a less restrictive alternative to gauge the possible outcomes. The selected block is bounded by Albemarle St., Lincoln Ave., Norvell St., and Central Ave. The drawings purposefully appropriate the style and language of traditional zoning documents as reference to the delicate balance between following the rules and challenging them.

City of El Cerrito Site Analysis

Existing Conditions

- Existing Structures
- Potential Second Unit Location

This site analysis will evaluate the effects of El Cerrito's Second Unit Ordinances by examining a particular and typical block near the city's southern BART station. The analysis will look at the specific criteria currently used to determine eligibility for second units as well as the effects of possible policy alternatives.

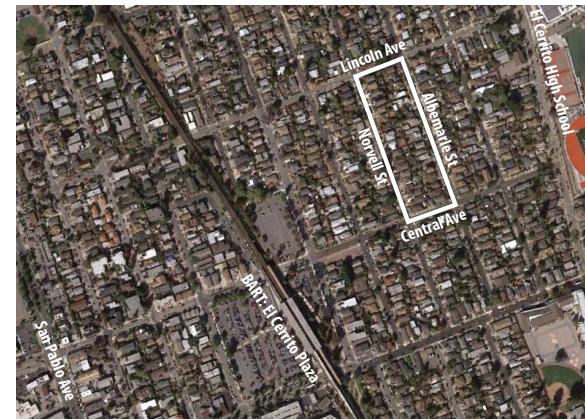
The existing conditions, shown above right, highlights the block as it appears today, and overlays the purely geometrical restrictions applying to second units (setbacks, maximum size, lot coverage). It shows the current maximum built condition possible, despite existing regulations like parking requirements that could severely limit the scenario depicted here.



Regional Context



Local Context



Existing Conditions

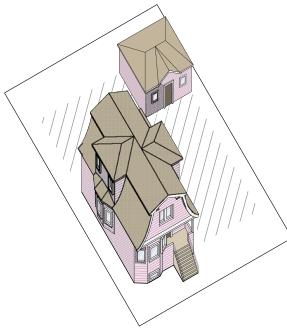
Second Unit Ordinance Effects and Limitations



City of El Cerrito Site Analysis

Second Unit Ordinance Effects and Limitations

Second Unit Requirements:



- Cannot exceed the smaller of 750 sq. ft. or 40% of primary unit size
- Must exceed 150 sq. ft.
- Max height 15', otherwise follows primary unit zoning requirements
- Combined area cannot exceed 50% lot coverage
- Requires minimum 1 additional parking spot
- Must be “architecturally compatible” with primary unit
- Identify mature trees with trunks over 24” in diameter

Unclear: Does construction triggers code upgrades for the primary unit?

Potential Second Units



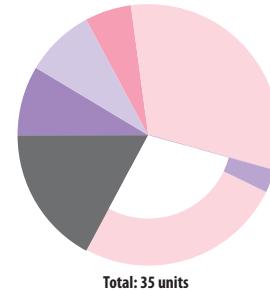
Definitive Ineligibility Factors:



Possible Ineligibility Factors:



Block Summary:



- 3 units
- 3 units
- 2 units
- 11 units
- 1 units
- 9 units
- 6 units

Existing Limitations

Second Unit Ordinance Effects and Limitations



City of El Cerrito Site Analysis

Second Unit Ordinance Effects and Limitations

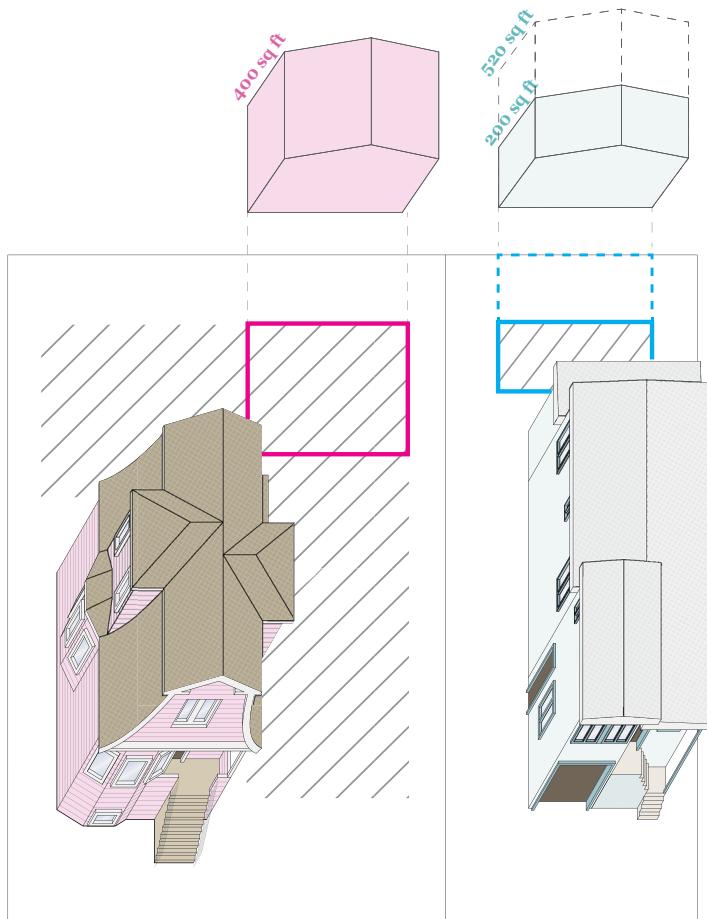
Second Unit Requirements:

515 Albemarle St

Lot Size: 6,750 sq. ft.
House Size: 1,000 sq. ft.
Lot Coverage: 15%
Current Limits
50% Coverage: 2,400 sq. ft.
40% of Primary: 400 sq. ft.
Setback Area: 2,750 sq. ft.

519 Albemarle St

Lot Size: 4,000 sq. ft.
House Size: 1,300 sq. ft.
Lot Coverage: 33%
Current Limits
50% Coverage: 675 sq. ft.
40% of Primary: 520 sq. ft.
Setback Area: 200 sq. ft.



Existing Limitations

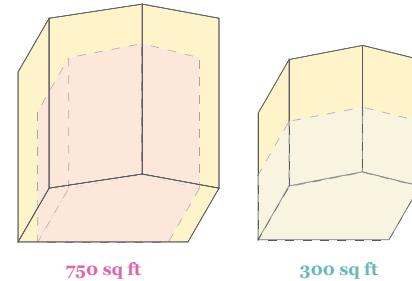
Second Unit Ordinance Effects and Limitations

Size Alternatives

Tie max second unit size to size of undeveloped portion of parcel

Can still keep existing maximum (750 sq ft) and minimum (150 sq ft), but can be remapped based on existing conditions and proposed rules

New setback requirements could allow for more privacy between the primary and secondary units



City of El Cerrito Site Analysis

Existing Requirements - 1(A)



Two covered parking spaces for the primary unit plus one additional uncovered parking space for the secondary unit. Some existing detached garages would have to be replaced to maintain compliance.



Figure 1(A)



Alternate Requirements - 1(B)



One covered parking spaces for the primary unit plus one additional uncovered parking space for the secondary unit

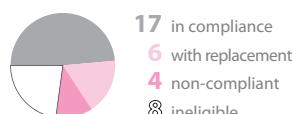


Figure 1(B)



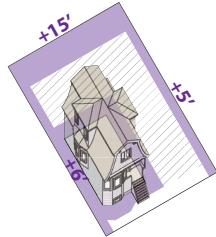
Parking Requirements

Second Unit Ordinance Effects and Limitations



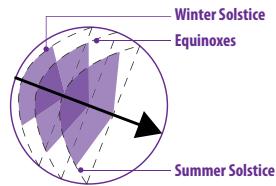
City of El Cerrito Site Analysis

Existing Requirements - 1(A)



Distinct structures must be separated by a minimum of 6' from one another as well as respecting a 15' rear setback, a 5' side setback, and the front-most wall of the primary unit

Alternate Requirements - 1(B)



Distinct structures must be separated so as to provide sufficient sunlight throughout the year. Sufficient sunlight is defined as receiving sunlight during 75% of daylight hours on the summer solstice, 66% of daylight hours during the equinoxes, and 50% of daylight hours during the winter solstice.

Figure 2(A)



Figure 2(B)



Allowable Footprints

Second Unit Ordinance Effects and Limitations



City of El Cerrito Site Analysis

Existing Requirements - 1(A)



Int. Sprinklers
(post-2010)



Ext. Hydrants
(pre-2010)

All new residential units must contain internal sprinkler systems for fire protection. Units relying on street hydrants are now out of compliance and must be retrofitted before second units are permitted. Additionally, second units cannot have independent meters or connections for electricity, gas, sewer, or water.

Figure # (A)



Alternate Requirements - 1(B)



20' Alley



Buildings in R.O.W.



Sewers Proposed



Parking Concerns

A new fire lane alley in the rear of the properties could service multiple infrastructure needs for the second units. Aside from providing independent meters and connections, ease of fire access could allow new construction without upgrading the primary units with sprinkler systems.

Figure # (B)



Emergency + Service Infrastructure

Second Unit Ordinance Effects and Limitations



City of El Cerrito Site Analysis

Existing Requirements - 1(A)



Mature Tree



Immature Tree

All mature trees, defined as having a trunk with a diameter greater than 24", shall be identified in the application. While it is a factor considered in the approval process, no threshold for action is codified.

Alternate Requirements - 1(B)



The application process could substitute a more detailed approach to vegetation than mature trees by requiring publicly available satellite imagery analysis. Through the NDVI analysis tool, the relative areas of vegetation on a site can be determined, as can a project's relative effect on the vegetated areas of a site.

Figure # (A)

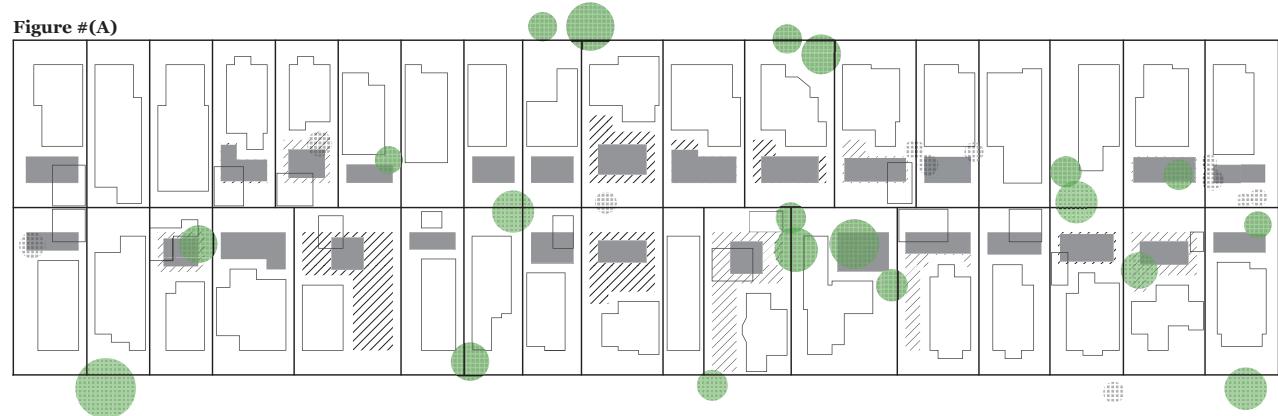
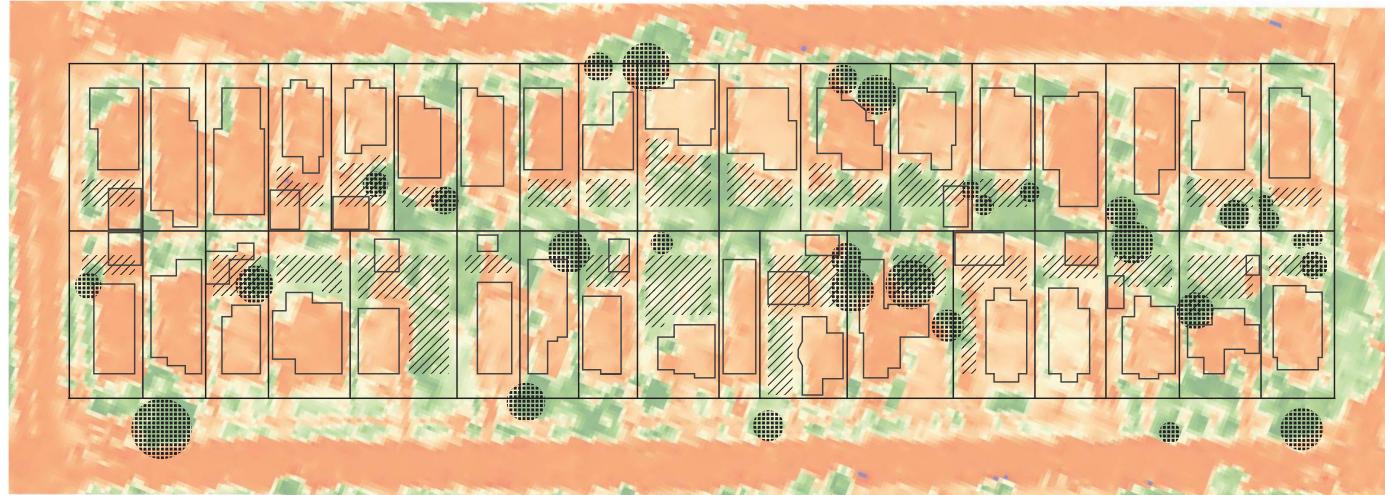


Figure # (B)



Vegetation and Tree Canopy

Second Unit Ordinance Effects and Limitations



City of El Cerrito Site Analysis

Tile-Based Alternative- 1(A)

A tile-based system would overhaul the current second unit ordinance and calculate a maximum allowable footprint by dividing lots into equally spaced 10' x 10' tiles, and then removing tiles that conflict with certain conditions. Depicted here are the tiles that conflict with the footprint of the primary units.

Figure # (A)



Geometric Alternative - 1(B)

A geometric system would overhaul the current second unit ordinance by parametrically crafting footprints that meet certain criteria and fit within the space generated between the rearmost wall of the primary unit and the rear lot line. This maximum zone would extend across the width of the lot, and can receive many different designs such as courtyards, solar alignments, and v-shapes.

Figure # (B)



Alternative Methodologies

Second Unit Ordinance Effects and Limitations



The Form

Zoning Diagrams

Taking on the lack of subtlety expressed in contemporary zoning policies, this thesis explores a new, more nuanced reinterpretation. Traditionally, zoning has been limited by the number of factors, or “inputs” it considers. Not only are these parameters described in intentionally unambiguous language, they are often illustrated in accompanying diagrams. Since they are each imputed and purported individually, the more parameters are considered, the greater the chance for inadvertent conflicts or loopholes. Currently, the city addresses this issue through awkward statements embedded into the code. “Where this chapter and another city ordinance conflict or overlap, whichever imposes the more stringent requirements shall prevail.”¹²⁰

Instead, this thesis adapts new technologies to implement a more subtle, site-specific approach: parametric design. Through parametric software, architects leverage the computer’s processing power in the design process. Rather than inputting commands that yield specific geometries, parametric design relies on the architect crafting a series of rules (parameters) that the computer follows to yield a design. It gives designers a tool through which to explore the compounded effects of intertwined parameters and which generates countless iterations by tweaking simple inputs. It poses two major benefits to subtle reinterpretations to zoning: first, it allows multiple factors to be interpreted and negotiated simultaneously; second, it allows set of parameters to conduct identical processes regardless of initial geometry. In other words, parametric software allows for a greater

number of factors to be included into a zoning scheme, while also quickly calculating the outcome of the same rules no matter the particular geometries of a given block.

This opens up a much wider range of possibilities for El Cerrito’s zoning--particularly for accessory dwelling units. Rather than relying on the hypothetical and generalized ideals of a zoning category, it allows for the actual conditions of a block to determine the possibilities for secondary units. The greater degree of nuance, and increased site specificity inject a delicate complexity into the zoning process in ways which were not possible before.

This thesis does not seek to present a singular solution to El Cerrito’s ADU policies. Instead, it uses parametric inputs to highlight numerous ways different variables and priorities could potentially be arranged, and the different geometries that would arise from each set of rules. Rather than only factoring in information like building separation, setbacks, and maximum sizes, parametric zoning can codify any data set. The previous graphic and pattern studies shows how the relationships between data sets can be composed so as to maximize the subtlety of ADUs. It allows for more purposeful relationships: small houses on big lots can be allowed to build larger accessory units; building separation can be dictated by solar access requirements rather than fixed and universal setbacks; an established block’s mature tree coverage can be preserved by buffering new construction around existing trees. The potential geometry of ADUs can be precisely calculated based on the size of the lot, the shape of the main unit, and the desired characteristics.

This incorporates another layer of site specificity: ADUs are not only responding to conditions within their parcel, but the same factors are leading to visual similarities across the entirety of the block. That is: ADUs are in conversation with their primary dwelling in addition to the other ADUs on the block.

Given the ability of parametric software to iterate, it could be an important tool in the public participation process. Multiple options can be visualized almost immediately, allowing planning staff, area architects, and local residents to see the outcome of changes to the parameters instantaneously. It also opens the possibility of finer grains of zoning. Rather than the city's 3 current single-family zoning distinctions which are based on lot size, different parameters could be selected based on the wants and needs of smaller geographies within the city. Blocks closer to transit could be given more flexibility in the design of the units than those further away. Similarly, it allows for zoning rules that account for change in time. Rather than today's static zoning ordinances, which must be changed by the city council, nothing prohibits digital inputs from being self-updating parameters. Certain bonuses could be calculated into the zoning code for homeowners who build new ADUs quickly, or the footprints of all ADUs on a block could be limited to a certain size until a certain threshold is met. While today, smaller and more inconspicuous units might be desired, the future may hold different priorities. Once ADUs are more common, the thought of larger secondary units that can house larger households and families may be more palatable for El Cerrito's residents.

The potential design configurations explored in this thesis center around the courtyard typology. It certainly is not the only possible configuration, or even necessarily the most universally appropriate one. However, this typology offers several benefits for use in secondary units, particularly in maximizing subtlety. While the subtle involves delicate complexity, it equally encompasses perception. A courtyard around the rear periphery of a lot would give the ADU a greater perception of privacy since the open space and light source could be individualized. Similarly, the primary dwelling's privacy and yard space could be similarly preserved since the ADUs would be introspective into its own courtyard. Designs that prioritize privacy embody more subtle approaches to perception.

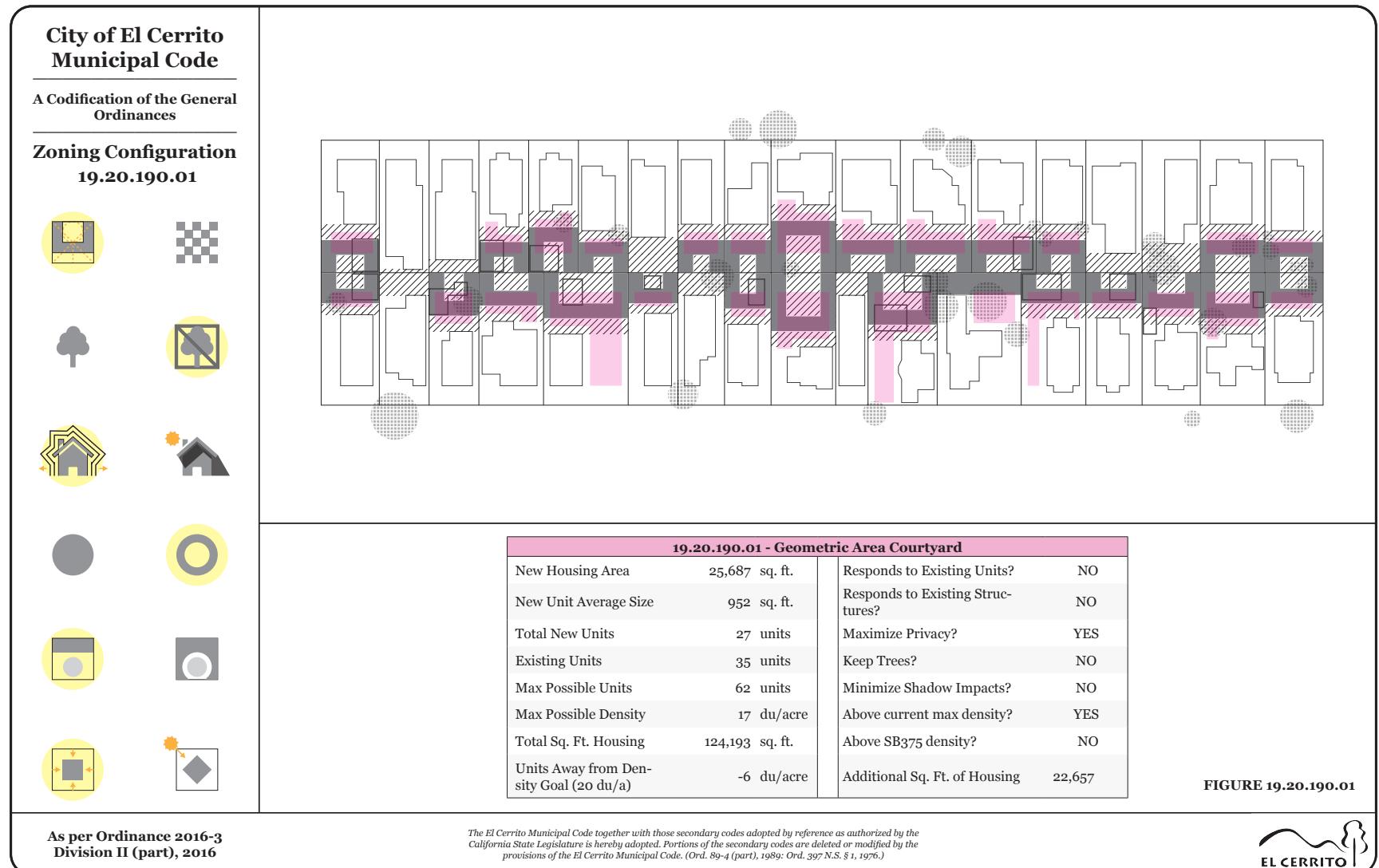
The following diagrams show twelve different potential configurations for a real El Cerrito block's accessory dwelling units. Since the geometric outcomes are merely the result of specific rules, each schemes' parameters are presented in the form of zoning code they are intended to replace. Each example will be accompanied by a diagram that describes the order and the details of the applicable rules. Using icons, the diagrams reveal a binary condition for six variables: (1) a geometric versus tile-based arrangement, (2) preservation of mature vegetation, (3) building separation based on a fixed distance or solar access, (4) the generation of courtyards, (5) maximum buildable area in relation to the primary unit, and (6) angled to the street grid or the cardinal directions. These accessory diagrams will also compare the generated geometry to the ADUs as currently allowed and calculate changes such as total square feet, and total units.

scheme 1

<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning</p> <p>Part II. - Base District Regulations</p> <p>Chapter 19.20:</p> <p>STANDARDS FOR SPECIFIC USES</p> <p>§19.20.190 - SECOND UNITS</p> <p>The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none">1. Type of Unit: Second Units must be detached from the primary unit on the lot.2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (<i>diagonal stripes, figure 19.20.190.1</i>). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit.3. Floor Area: Second Units shall be designed to fulfill the following parameters: (a) an occupiable space 12 feet in depth spanning the entire width of the property, (b) the space must be a minimum of 12 feet away from the rear lot line, (c) the space must be the smaller of either the remaining distance in the ZONE, or a 12 foot separation from the primary unit, and (d) 12 foot wide spaces along both sides of the property so as to enclose at the largest possible courtyard within the occupiable space of the Second Unit (<i>solid grey, figure</i>).4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (<i>grey square fill</i>), or (b) existing accessory structures (<i>horizontal stripes</i>)	<p>FIGURE 19.20.190.1</p>
<p>As per Ordinance 2016-3 Division II (part), 2016</p> <p><small>The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)</small></p>	



scheme 1



scheme 2

City of El Cerrito Municipal Code

A Codification of the General Ordinances

§1: Zoning

Part II. - Base District Regulations

Chapter 19.20:

STANDARDS FOR SPECIFIC USES

§19.20.190 - SECOND UNITS

The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

1. Type of Unit: Second Units must be detached from the primary unit on the lot.

2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (*diagonal stripes*, figure 19.20.190.2). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit.

3. Floor Area: Second Units shall be designed to fulfill the following parameters: (a) an occupiable space 12 feet in depth spanning the entire width of the property, (b) the space must be a minimum of 12 feet away from the rear lot line, (c) the space must be the smaller of either the remaining distance in the ZONE, or a 12 foot separation from the primary unit, (d) 12 foot wide spaces along both sides of the property so as to enclose at the largest possible courtyard within the occupiable space of the Second Unit (*solid grey*, figure), and (e) not interfere with any existing trees on the site (*grey square fill*).

4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as existing accessory structures (*horizontal stripes*).

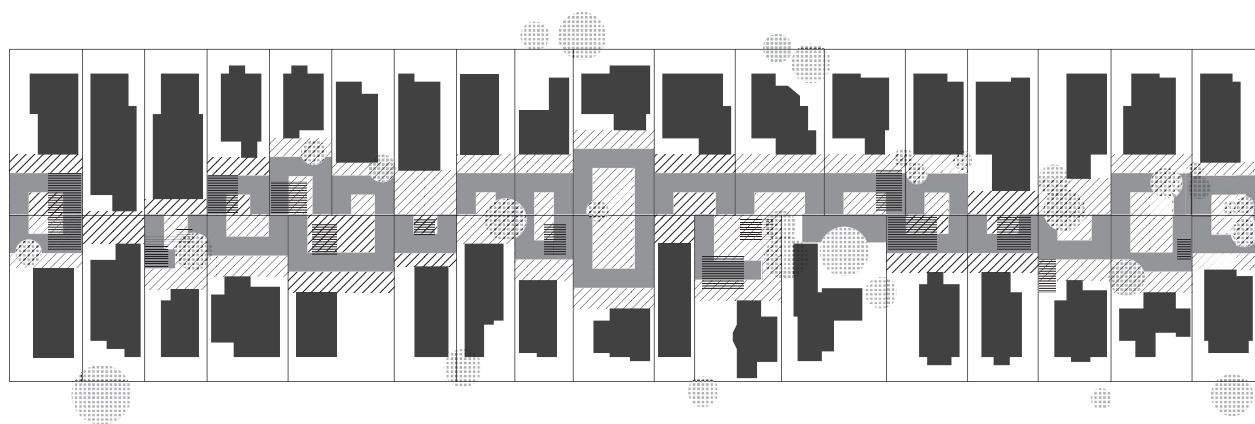


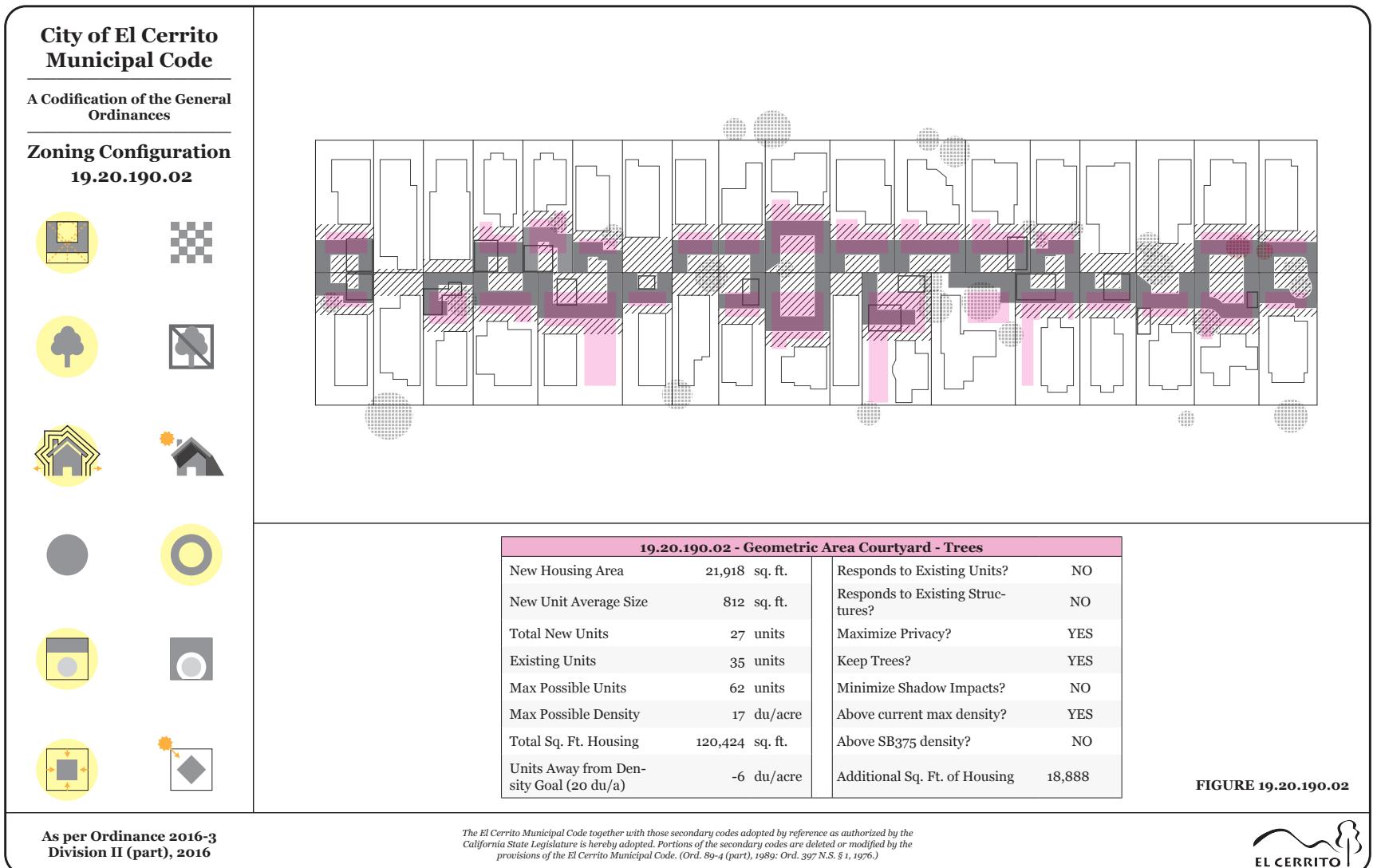
FIGURE 19.20.190.2

As per Ordinance 2016-3
Division II (part), 2016

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scheme 2



scheme 3

City of El Cerrito Municipal Code

A Codification of the General Ordinances

§1: Zoning

Part II. - Base District Regulations

Chapter 19.20:

STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS

The following regulations are intended to comply with Government Code §65852.1.50 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

1. Type of Unit: Second Units must be detached from the primary unit on the lot.

2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (*diagonal stripes*, figure 19.20.190.3). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit.

3. Floor Area: Second Units shall be designed to fulfill the following parameters: (a) Second Units cannot occupy any portion of the ZONE that lies within a 10 foot, square-cornered buffer of any primary unit on the same or adjacent lot, and (b) they must encompass the largest possible courtyard generated from a 12 foot buffer of the remaining perimeter faces of the ZONE, less the geometries described in (a) and the rear lot line (*solid grey*, figure). Second Units must also exclude the area generated by the square in which existing trees can be circumscribed (*grey square fill*).

4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as existing accessory structures (*horizontal stripes*).

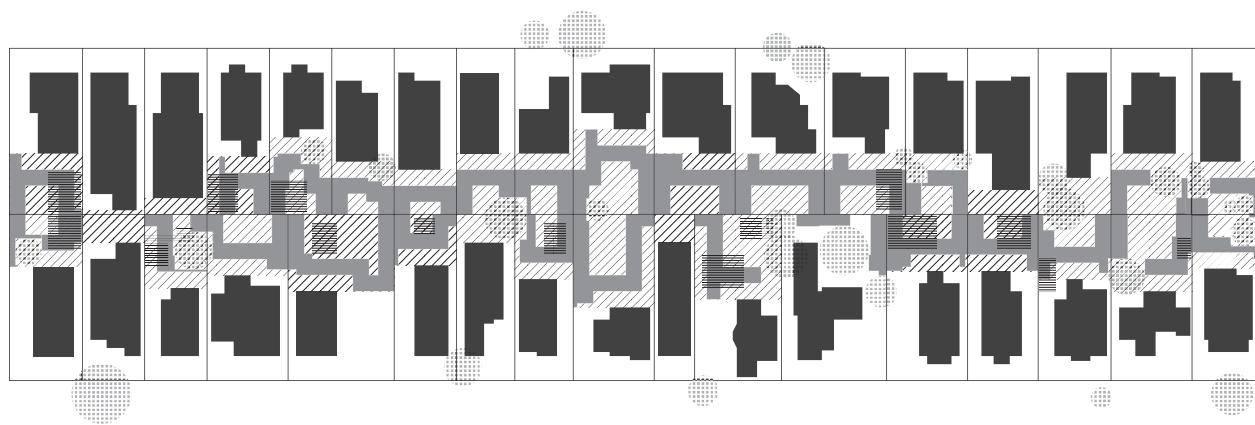


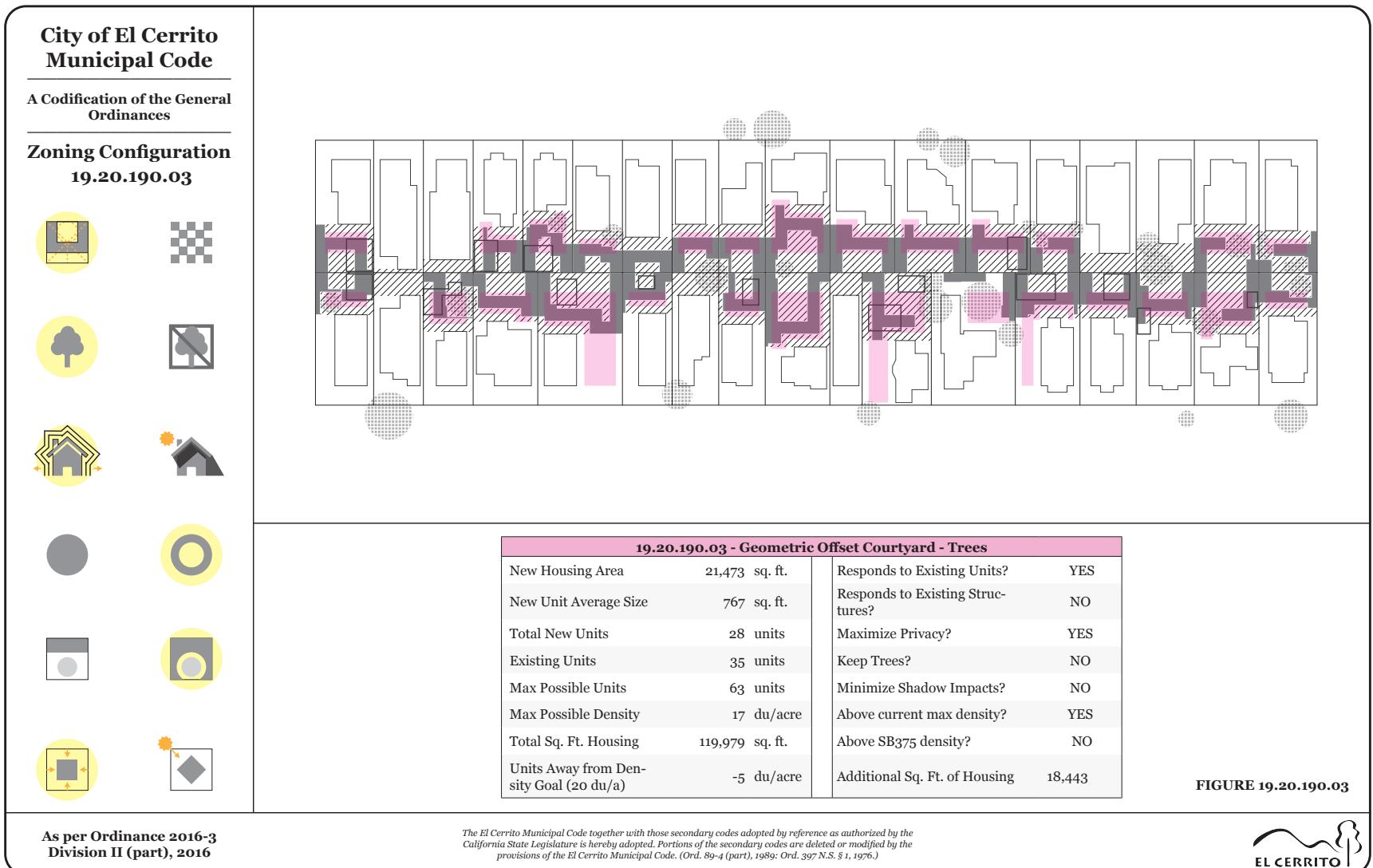
FIGURE 19.20.190.3

As per Ordinance 2016-3
Division II (part), 2016

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scheme 3

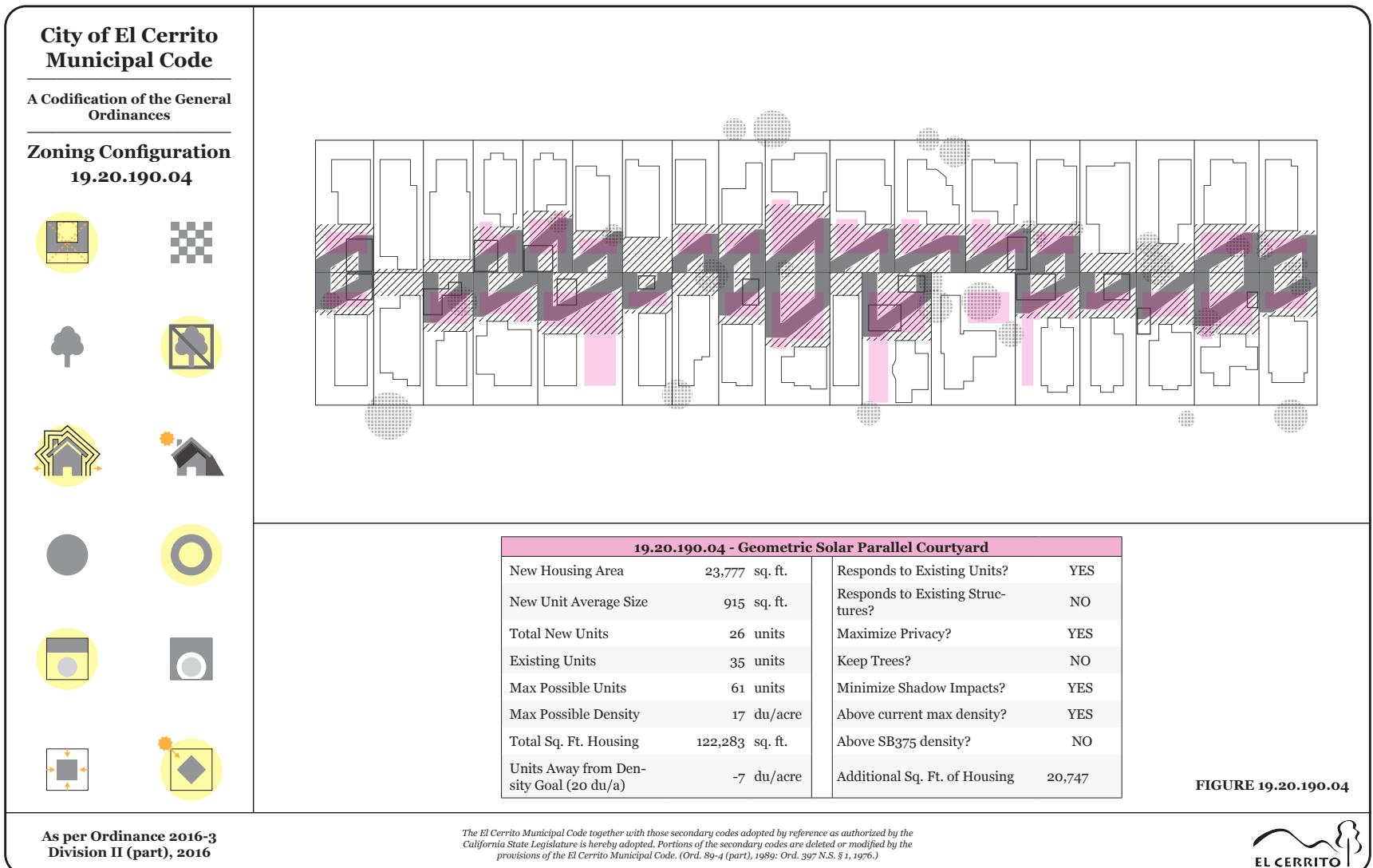


scheme 4

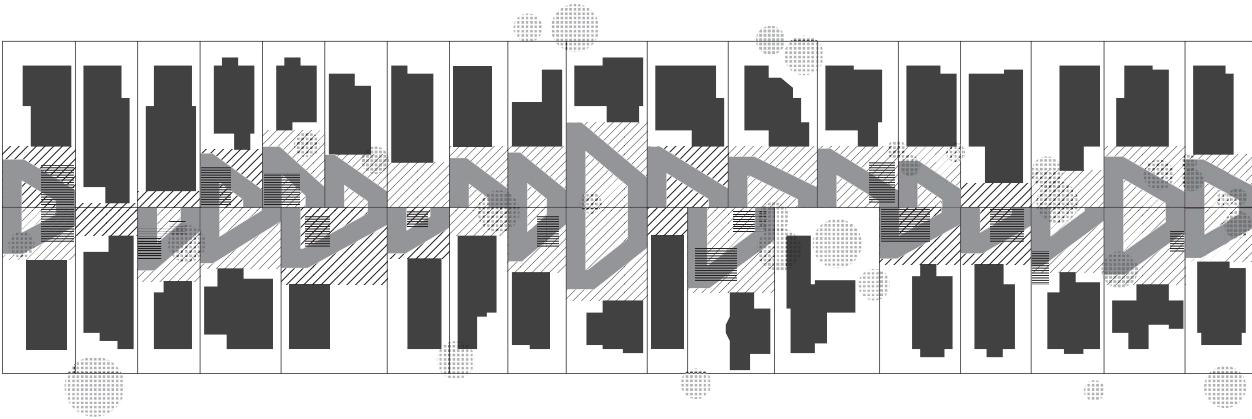
<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning</p> <p>Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS</p> <p>The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none"> 1. Type of Unit: Second Units must be detached from the primary unit on the lot. 2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (<i>diagonal stripes, figure 19.20.190.4</i>). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit. 3. Floor Area: Second Units shall be designed as a 12 foot wide space enclosing the largest possible quadrilateral courtyard based on the following parameters: (a) the two edges along the longest edges of the lot and the rearmost edge shall be parallel to the lot lines, (b) the edge nearest to the primary unit of the lot shall be rotated, (c) the rotation shall be the inverse angle of true north, $\pm 7.5^\circ$ tolerance, and (d) the shortest exterior perimeter edge shall be at least 10 feet in length (<i>solid grey, figure</i>). 4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (<i>grey square fill</i>), or (b) existing accessory structures (<i>horizontal stripes</i>) 	<p>FIGURE 19.20.190.4</p>
<p>As per Ordinance 2016-3 Division II (part), 2016</p> <p><small>The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)</small></p>	



scheme 4



scheme 5

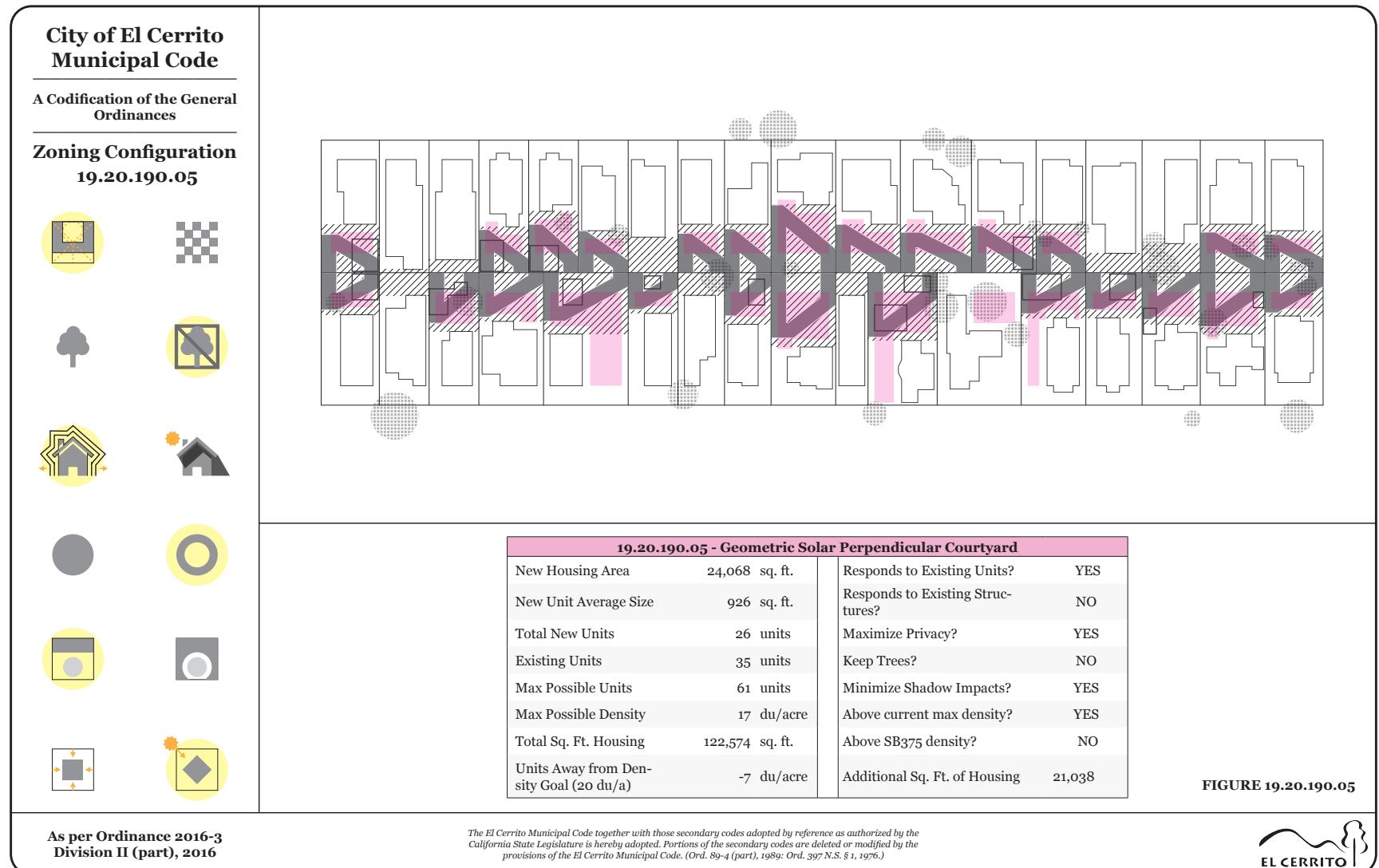
<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none"> 1. Type of Unit: Second Units must be detached from the primary unit on the lot. 2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (<i>diagonal stripes</i>, figure 19.20.190.5). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit. 3. Floor Area: Second Units shall be designed as a 12 foot wide space enclosing the largest possible quadrilateral courtyard based on the following parameters: (a) the two edges along the longest edges of the lot and the rearmost edge shall be parallel to the lot lines, (b) the edge nearest to the primary unit of the lot shall be rotated, (c) the rotation shall be the angle of true north, $\pm 7.5^\circ$ tolerance, for lots with a westerly street frontage and the inverse for those with an easterly frontage, and (d) the shortest exterior perimeter edge shall be at least 10 feet in length (<i>solid grey</i>, figure). 4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (<i>grey square fill</i>), or (b) existing accessory structures (<i>horizontal stripes</i>) 	 <p>FIGURE 19.20.190.5</p>
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**As per Ordinance 2016-3
Division II (part), 2016**

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scheme 5



scheme 6

**City of El Cerrito
Municipal Code**

A Codification of the General
Ordinances

§1: Zoning

Part II. - Base District Regulations
Chapter 19.20:
STANDARDS FOR SPECIFIC USES
§19.20.190 - SECOND UNITS

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- 1. Type of Unit:** Second Units must be detached from the primary unit on the lot.
- 2. Approved Location:** Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the area of the property from: (a) the rearmost wall of the primary unit, to (b) the rear edge of the lot, and (c) covering the full width of the lot (diagonal stripes, figure 19.20.190.6). Lots whose ZONE measures less than 36 feet in any dimension shall be ineligible for a second unit.
- 3. Floor Area:** Second Units shall be designed per the following parameters: (a) identify the centroid of the ZONE, equidistant from the rearmost wall of the primary unit and the rear parcel line, and equidistant to adjacent parcels (b) draw a line from the centroid to both rearmost corners of the parcel, and (c) offset this line by 6' on both sides so as to enclose a triangular courtyard with a v-shaped Second Unit (solid grey, figure).
- 4. Considerations:** Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (grey square fill), or (b) existing accessory structures (horizontal stripes)

FIGURE 19.20.190.6

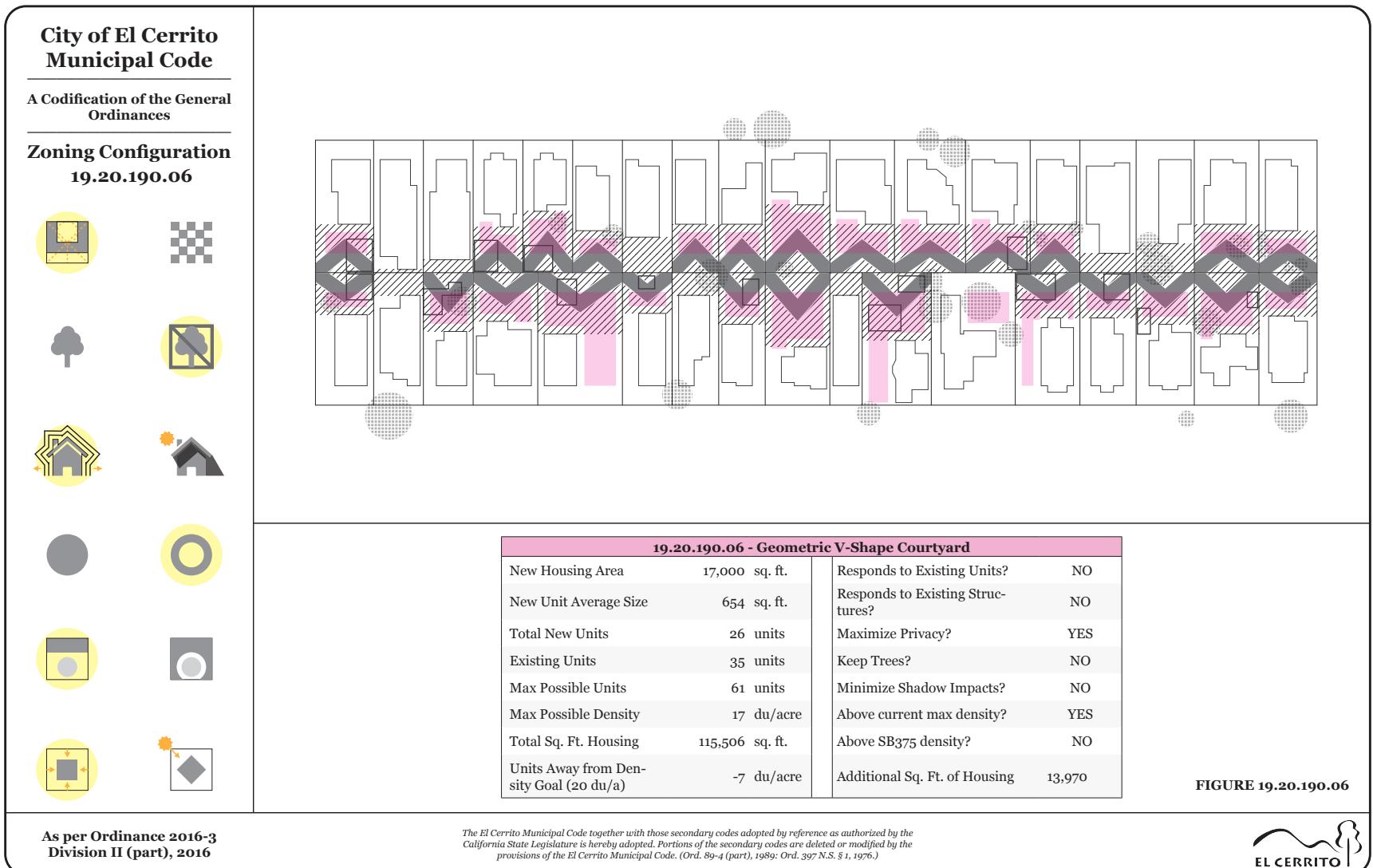
As per Ordinance 2016-3
Division II (part), 2016

The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)

Benejam

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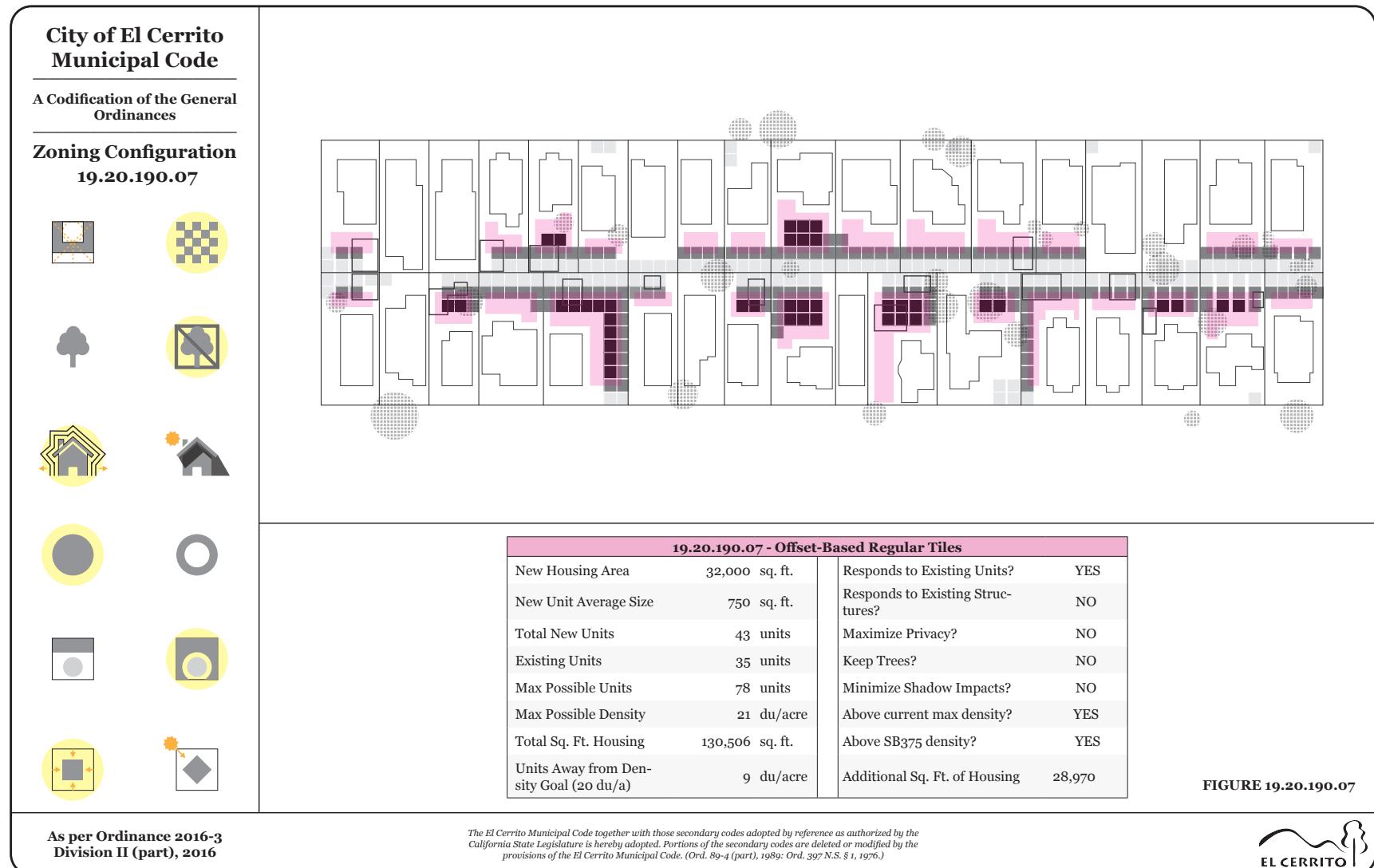
scheme 6



scheme 7

<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none"> 1. Type of Unit: Second Units must be detached from the primary unit on the lot. 2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, and (b) any tile that intersects any portion of the 10 foot offset of the perimeter of any primary unit must be excluded from the ZONE (triangular grid, grey lines, figure 19.20.190.7). 3. Floor Area: Second Units shall be designed through the amalgamation of the remaining 10 foot square tiles of the ZONE on an individual parcel(solid grey, figure). 4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (grey square fill), or (b) existing accessory structures (horizontal stripes) 	
<p>FIGURE 19.20.190.7</p>	
<p>As per Ordinance 2016-3 Division II (part), 2016</p>	
<small>The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)</small>	

scheme 7



scheme 8

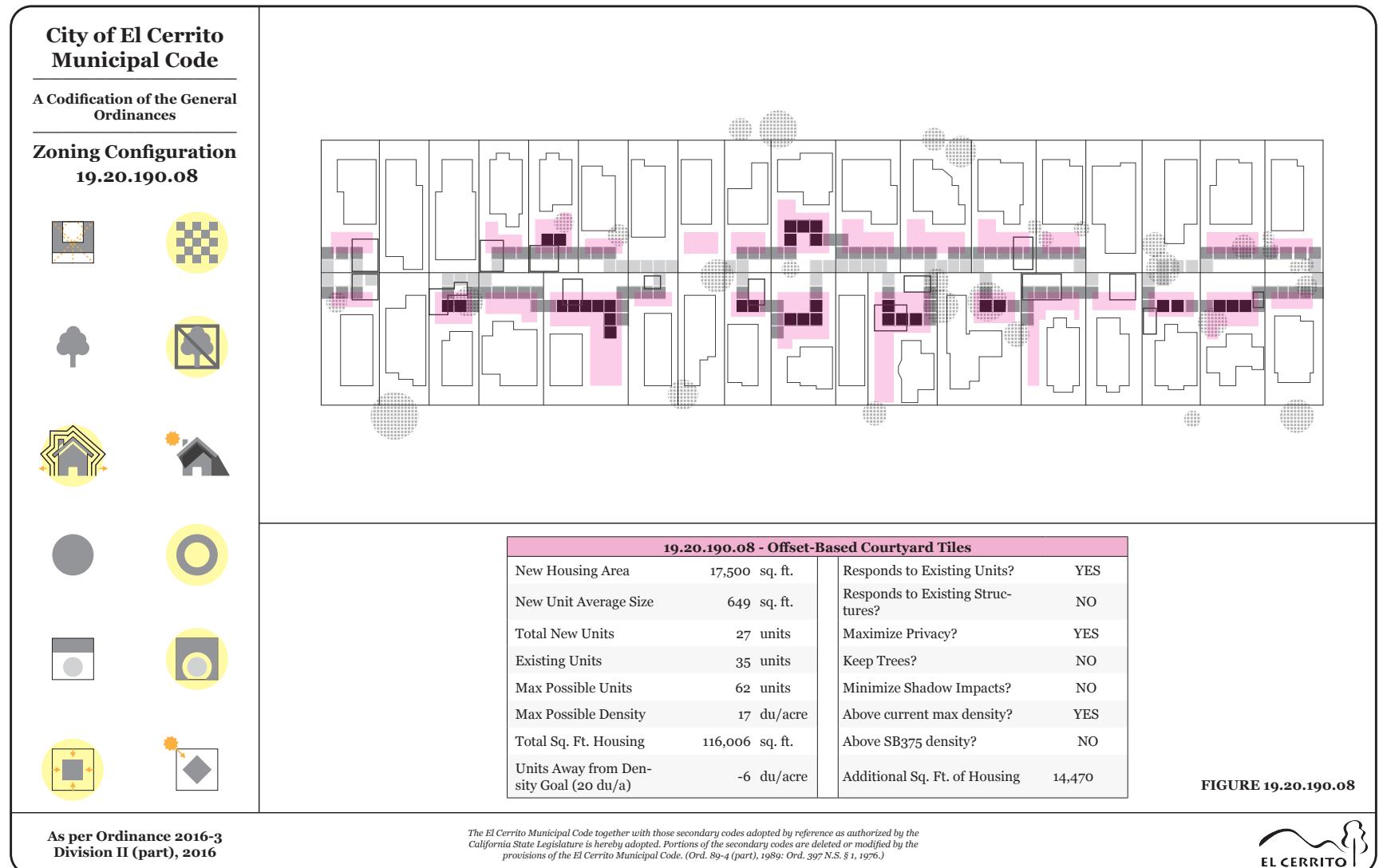
<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS</p> <p>The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none"> 1. Type of Unit: Second Units must be detached from the primary unit on the lot. 2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, and (b) any tile that intersects any portion of the 10 foot offset of the perimeter of any primary unit must be excluded from the ZONE (triangular grid, grey lines, figure 19.20.190.8). 3. Floor Area: Second Units shall be designed through the amalgamation of the remaining 10 foot square tiles of the ZONE on an individual parcel for which: (a) the maximum number of lines drawn from the center point of an individual tile to the center point of any other tile within a 15 foot radius cannot exceed a total of 7 lines, and (b) any tiles which feature 8 or more such lines must be eliminated from the design to as to create the largest possible enclosed courtyard (solid grey, figure). 4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (grey square fill), or (b) existing accessory structures (horizontal stripes). <p>As per Ordinance 2016-3 Division II (part), 2016</p>	
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FIGURE 19.20.190.8

The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)



scheme 8



scheme 9

**City of El Cerrito
Municipal Code**

A Codification of the General
Ordinances

§1: Zoning
Part II. - Base District Regulations
Chapter 19.20:
STANDARDS FOR SPECIFIC USES
§19.20.190 - SECOND UNITS

The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

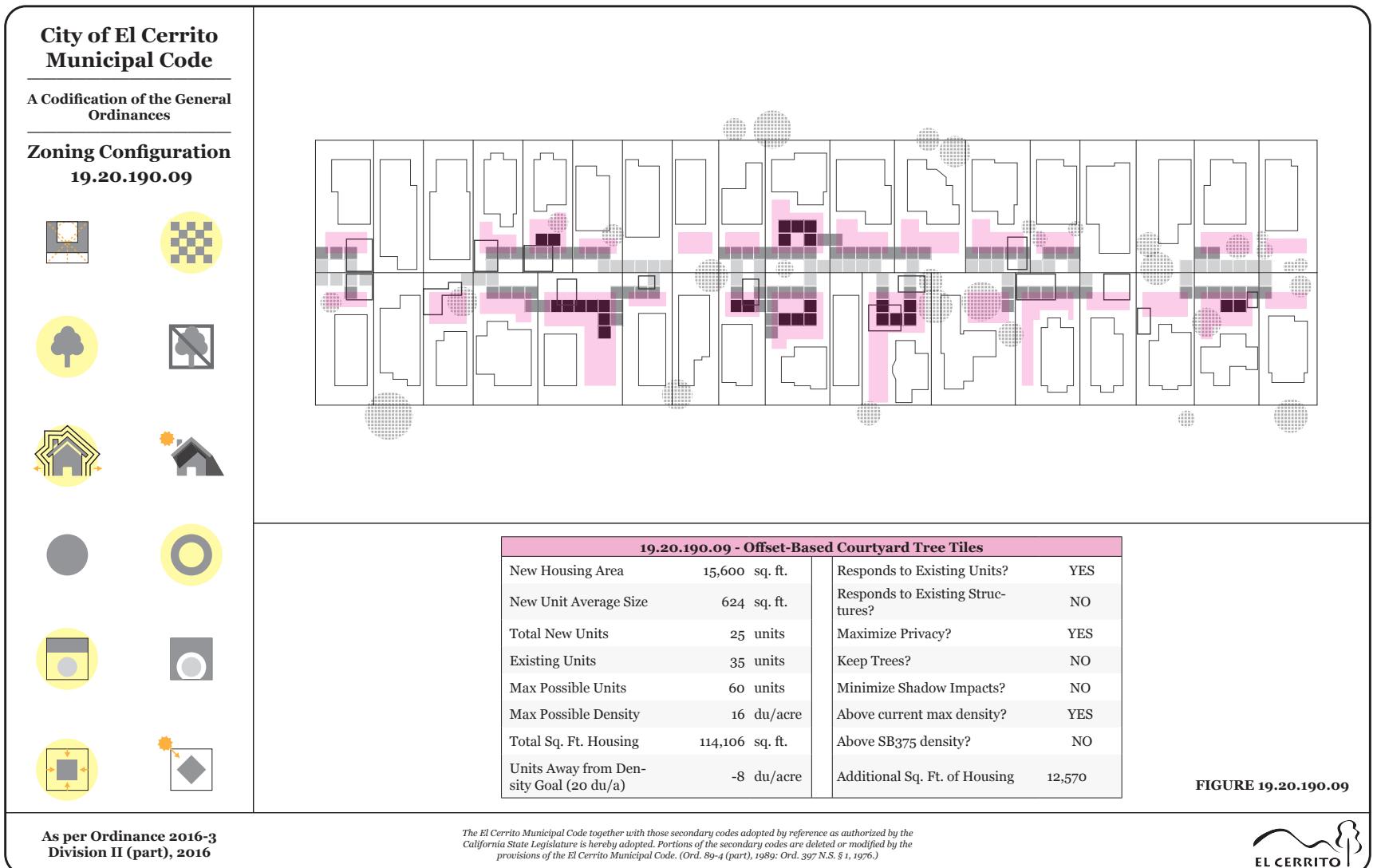
- 1. Type of Unit:** Second units must be detached from the primary unit on the lot.
- 2. Approved Location:** Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, (b) any tile that intersects any portion of the 10 foot offset of the perimeter of any primary unit must be excluded from the ZONE (triangular grid, grey lines, figure 19.20.190.9), as must (c) any tile which interferes with the preservation or growth of existing trees (grey square fill, figure).
- 3. Floor Area:** Second Units shall be designed through the amalgamation of the remaining 10 foot square tiles of the ZONE on an individual parcel for which: (a) the maximum number of lines drawn from the center point of an individual tile to the center point of any other tile within a 15 foot radius cannot exceed a total of 7 lines, and (b) any tiles which feature 8 or more such lines must be eliminated from the design to as to create the largest possible enclosed courtyard (solid grey, figure).
- 4. Considerations:** Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as existing accessory structures (horizontal stripes).

As per Ordinance 2016-3
Division II (part), 2016

FIGURE 19.20.190.9

The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)

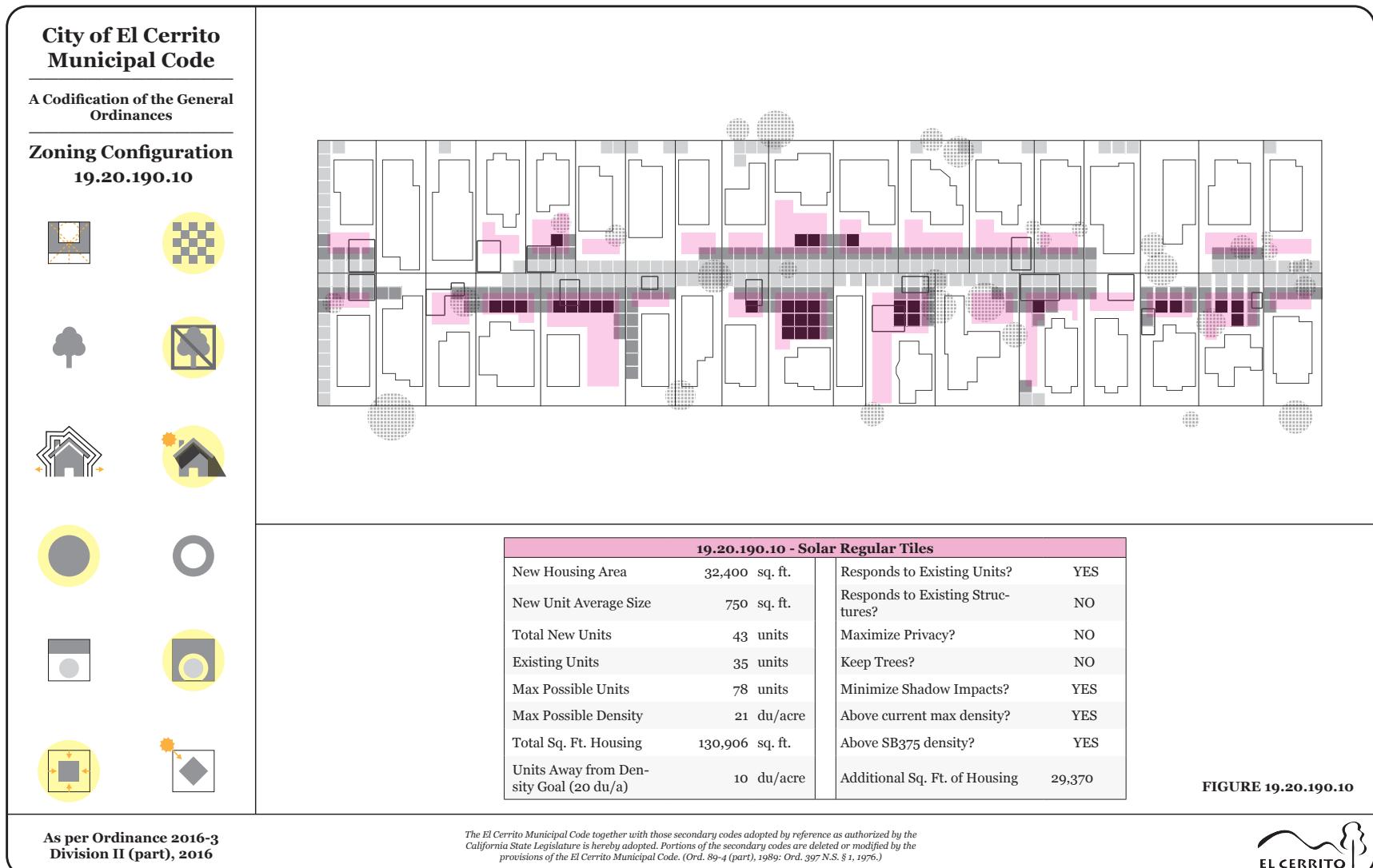
scheme 9



scheme 10

<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning</p> <p>Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS</p> <p>The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none">Type of Unit: Second Units must be detached from the primary unit on the lot.Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, and (b) any tile that would be shaded for more than 60% of the day at the autumn equinox, OR (c) 40% of the day during the winter solstice, must be excluded from the ZONE (triangular grid, grey lines, figure 19.20.190.10).Floor Area: Second Units shall be designed through the amalgamation of the remaining 4 foot square tiles of the ZONE on an individual parcel(solid grey, figure).Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (grey square fill), or (b) existing accessory structures (horizontal stripes)	
FIGURE 19.20.190.10	
<p>As per Ordinance 2016-3 Division II (part), 2016</p> <p><small>The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)</small></p>	
	

scheme 10



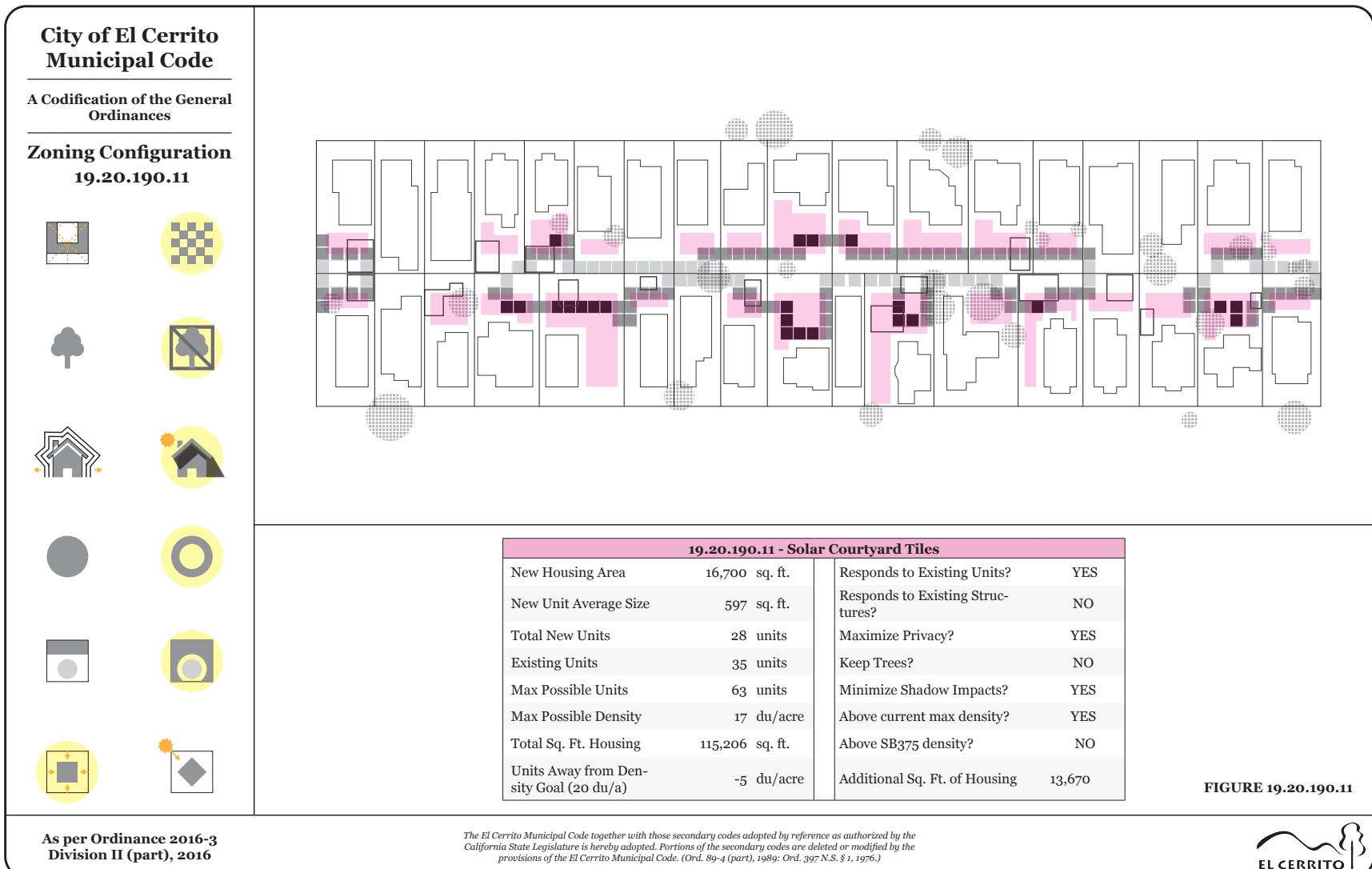
scheme 11

<p>City of El Cerrito Municipal Code</p> <p>A Codification of the General Ordinances</p> <p>§1: Zoning Part II. - Base District Regulations Chapter 19.20: STANDARDS FOR SPECIFIC USES §19.20.190 - SECOND UNITS The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:</p> <ol style="list-style-type: none"> 1. Type of Unit: Second Units must be detached from the primary unit on the lot. 2. Approved Location: Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, and (b) any tile that would be shaded for more than 60% of the day at the autumn equinox, OR (c) 40% of the day during the winter solstice, must be excluded from the ZONE (triangular grid, grey lines, figure 19.20.190.11). 3. Floor Area: Second Units shall be designed through the amalgamation of the remaining 10 foot square tiles of the ZONE on an individual parcel for which: (a) the maximum number of lines drawn from the center point of an individual tile to the center point of any other tile within a 15 foot radius cannot exceed a total of 7 lines, and (b) any tiles which feature 8 or more such lines must be eliminated from the design to as to create the largest possible enclosed courtyard (solid grey, figure). 4. Considerations: Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as: (a) trees (grey square fill), or (b) existing accessory structures (horizontal stripes). <p>As per Ordinance 2016-3 Division II (part), 2016</p>	<p>FIGURE 19.20.190.11</p>
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The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)



scheme 11



scheme 12

City of El Cerrito Municipal Code

A Codification of the General Ordinances

§1: Zoning
Part II. - Base District Regulations
Chapter 19.20:
STANDARDS FOR SPECIFIC USES
§19.20.190 - SECOND UNITS

The following regulations are intended to comply with Government Code §65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

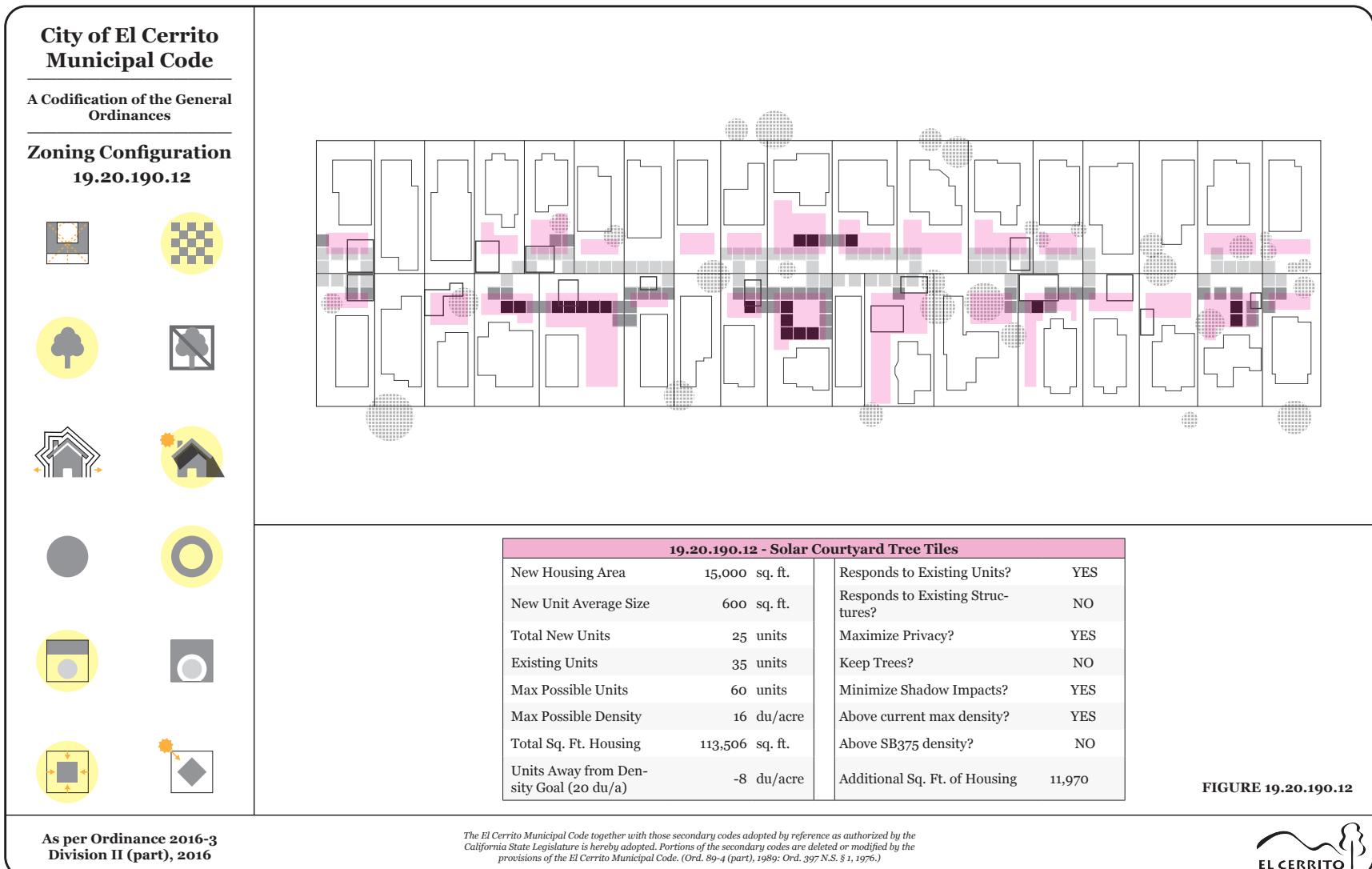
- 1. Type of Unit:** Second Units must be detached from the primary unit on the lot.
- 2. Approved Location:** Second Units must be located wholly within the ZONE OF MAXIMUM COVERAGE, defined as the following area of the lot: (a) the lot is to be subdivided into an equally spaced grid of 10 foot square tiles so as to maximize the number of tiles on each lot, and (b) any tile that would be shaded for more than 60% of the day at the autumn equinox, OR (c) 40% of the day during the winter solstice, must be excluded from the ZONE (*triangular grid, grey lines, figure 19.20.190.12*), as must (c) any tile that interferes with the preservation or growth of existing trees (*grey square fill, figure*).
- 3. Floor Area:** Second Units shall be designed through the amalgamation of the remaining 10 foot square tiles of the ZONE on an individual parcel for which: (a) the maximum number of lines drawn from the center point of an individual tile to the center point of any other tile within a 15 foot radius cannot exceed a total of 7 lines, and (b) any tiles which feature 8 or more such lines must be eliminated from the design to as to create the largest possible enclosed courtyard (*solid grey*).
- 4. Considerations:** Second Units shall be designed according to the aforementioned rules irrespective of potential obstacles such as existing accessory structures (*horizontal stripes*).

FIGURE 19.20.190.12

As per Ordinance 2016-3
Division II (part), 2016

The El Cerrito Municipal Code together with those secondary codes adopted by reference as authorized by the California State Legislature is hereby adopted. Portions of the secondary codes are deleted or modified by the provisions of the El Cerrito Municipal Code. (Ord. 89-4 (part), 1989; Ord. 397 N.S. § 1, 1976.)

scheme 12



Residential Design Guidelines

While traditional zoning documents operate wholly within a hypothetical and generalized universe, other policy documents are more sensitive to real-world conditions. Residential design guidelines, whether embedded into zoning ordinances or as standalone documents, are a particularly relevant example in the Iconic/Generic/Subtle conversation. Seeking to provide general rules for architectural standards, they are tasked with a deceptively difficult balance. While the guidelines must be broad enough to be applicable across an entire city, they deal with details that vary from building to building. Not operating in the hypothetical building envelopes or box-ish diagrams of zoning, design guidelines discuss specific details and decisions. In order to do so, they must recognize the wide range of designs within a city's jurisdiction. However, they generally seek to minimize existing differences, which jeopardizes enshrining too generic an architecture into the city's policies.

Instead, this thesis proposes a more subtle approach to design guidelines in a new series of rules governing the appearance of El Cerrito's ADUs. These guidelines seek to slightly amplify the complexities present in the city's architectural, rather than seeking to smooth out the differences. But by anchoring the design decision to elements distilled from the primary dwellings, this approach ensures a certain degree of site specificity. Through this careful negotiation of context and complexity, these new guidelines seek to inject subtlety in the appearance of units whose footprints were determined by subtle zoning.

Again, however, the thesis does not seek to propose a single, universal answer as the ultimate design guidelines. Instead, a variety of approaches are demonstrated, each incorporating different contextual approaches from contemporary architectural discourse. Although it is difficult to categorize ongoing architectural movements, a certain contextual jargon seems to have reemerged. Architects speak of sampling, mimicking, projecting and offsetting in ways reminiscent of the postmodernist movement. The post-postmodern has yielded the moniker of neo-pomo. The thesis proposes four schemes for design guidelines highlight the subtle differences between these approaches, and references different precedents to generate the rules. The goal is to adapt the incredible diverse interpretations of subtlety found in the precedent studies into possible design guidelines.

These proposals generally operate in the inverse of traditional design guidelines. Instead of specifying what designs should do, it specifies what they cannot do. It forces certain architectural operations to prevent a copy-and-paste approach from the primary unit to the ADU. However, by maintaining references to the source material through the four operations (sample, mimic, project, and offset) it prevents the design of ADUs from totally divorcing itself from the context and character of the neighborhood. They hope to give architects more room from creativity while still assuaging residents' concerns over the design and aesthetic of their neighbor's additions.

Incremental Frame Subtlety

Definitions

Subtle:

characterized by a delicate complexity that is not easily or immediately perceived

Secondary Unit:

an independently occupied unit that shares a lot with an existing unit(s) and is subject to regulations permitting these units to exist as-of-right

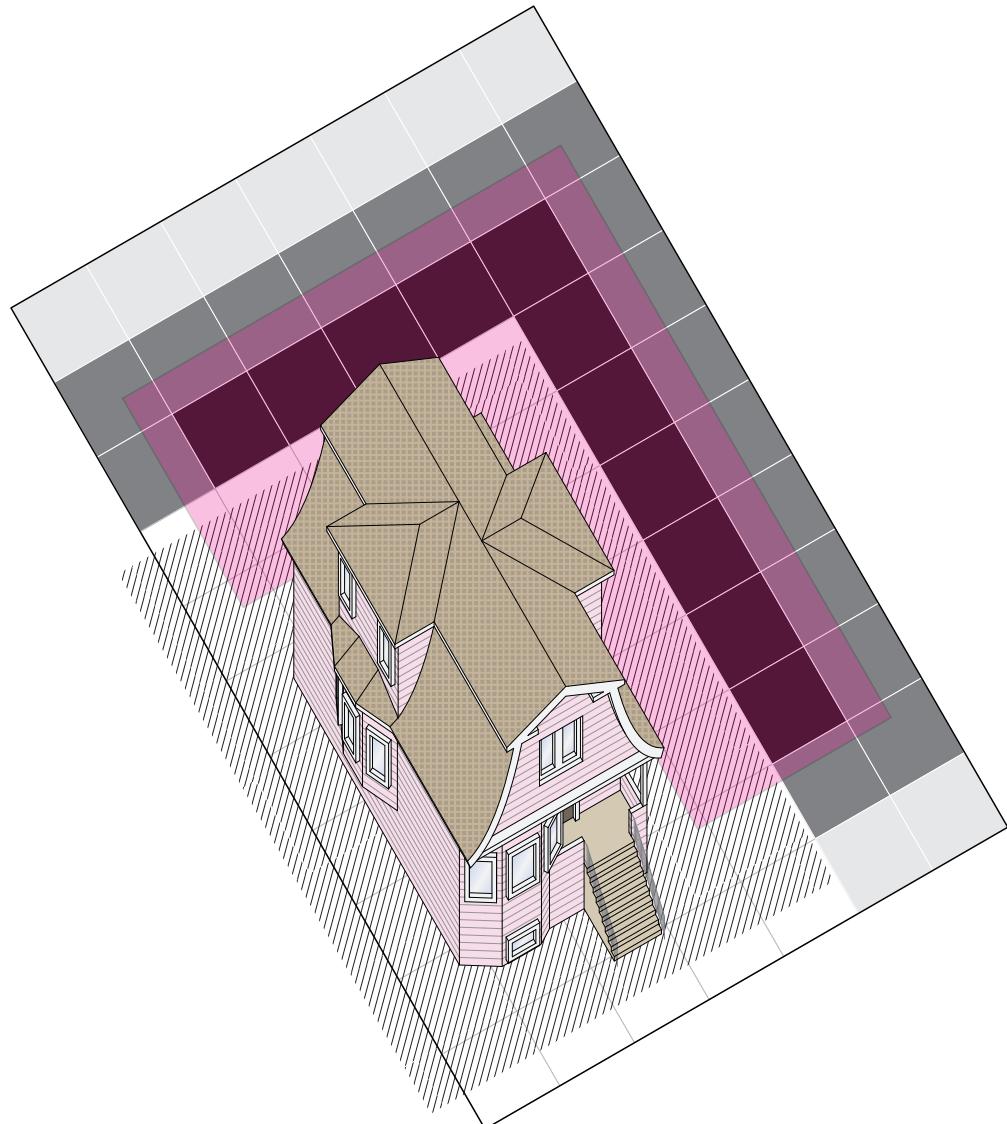
***Incremental
Frame Subtlety:***

a design strategy for Secondary Units that limits the square footage of the Secondary Unit based on the amount of units on the block, and manifests these limits by constructing outdoor framed spaces

§19.20.190 - 2016 Updates

The following supplemental regulations are intended to comply with Government Code Sections 65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

- A. Where Allowed. Second Units may be established on any lot in the RS, RD or RM district where a primary single family dwelling has been previously established or is proposed to be established in conjunction with construction of a second unit. Only one Second Unit is permitted per primary single-family dwelling on the same lot.
- B. Owner Occupancy. The legal owner of the property shall occupy either the primary dwelling or Second Unit as the owner's primary residence. Prior to the issuance of a building permit for a Second Unit, the applicant shall record notice of this requirement as a deed restriction, in accordance with Subsection I, in the Contra Costa County Recorder's Office.
- C. Type of Unit. A Second Unit may be attached, detached, or located within the living area of the primary dwelling unit on the lot, subject to the standards of this Section.



§19.20.190 - 2016 Updates (cont'd)

D. Secondary Unit Footprints

1. Tile-based system. The maximum floor area of a detached Second Unit shall be assessed based on a division of the parcel into equally spaced 10' x 10' tiles. Where parcel size is not in an increment of 10' the tiles may overlap or separate by a margin of 2.5' so as to maintain the grid as uniform as possible. Where the separation or overlap of tiles is within this threshold, the tiles shall be considered adjacent and contiguous and may be developed as such.
2. Development Tiles. The availability of selected tiles for development shall be decided on a block-wide basis, so as to include neighboring properties' effects. A minimum of 10' between existing and new buildings shall be maintained to allow for sufficient light and privacy for all units on the lot.
3. Zoning System Transition. In order to transition from the existing zoning system of setbacks to the new tile-based system, the development of second units shall be subject to additional restrictions until either 65% of parcels build a second unit, or fifteen years pass. The following provisions will restrict the maximum size of second units during the transition period:
 - (a) The existing setback-based zoning restrictions shall be overlaid on top of the new tile-based system;
 - (b) Tiles which lie entirely within the setback zone are the mutually compliant tiles where initial development may commence;
 - (c) Where tiles lie partially within the setback zone, such instances shall serve as transitional tiles, where development may occur if there are insufficient mutually compliant tiles;
 - (d) Future development tiles, those which lie entirely outside of the setback zone, shall be reserved for future use only after the transition period has ended.

E. Development Standards

1. Building Envelope. The maximum height of tiles selected for development shall be determined by a height limit of 8' along the edges of the parcel increasing along a 30° daylighting plane sloping towards the center of the parcel, with an overall maximum height of 15'.
2. Projections Beyond Height Limits and Daylight Planes. Permitted projections beyond height limits and daylight planes are listed below. In any case where the dimensions of allowed projections specified below differ from those of Section 19.06.030(F), the more restrictive provision shall govern. Permitted projections beyond maximum building envelope may not exceed more than 3' beyond the edge of any tile in any direction. Roofing elements may smoothly transition between tiles of different height limits as long as they remain within three feet of the building envelope.

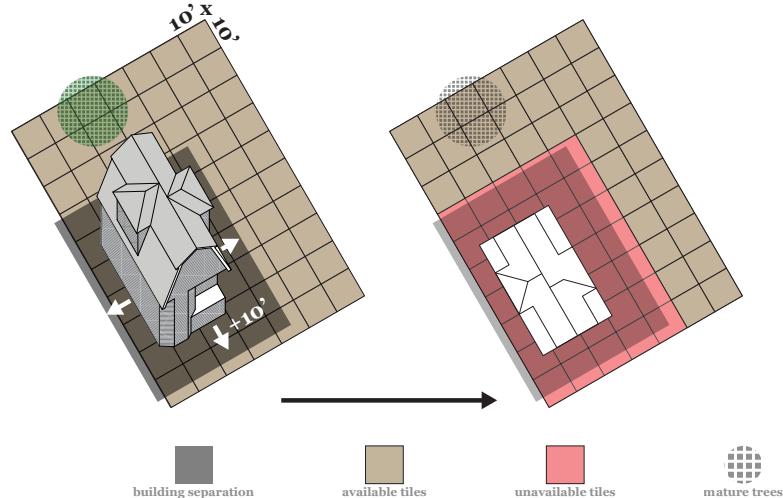


Figure 19.20.190(D)(2)

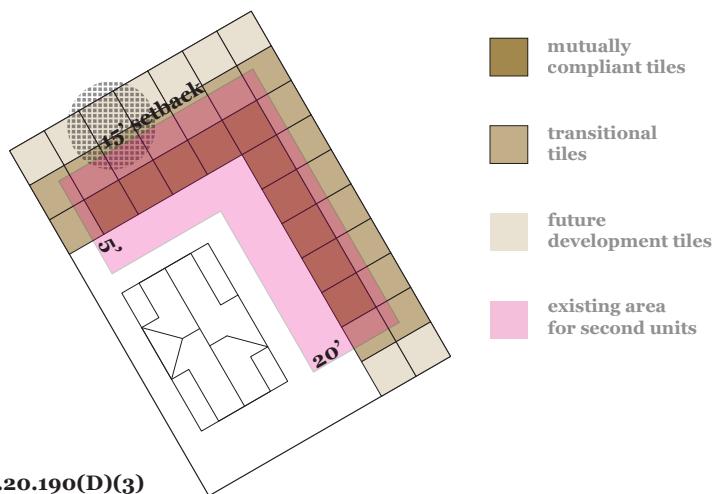


Figure 19.20.190(D)(3)

§19.20.190 - 2016 Updates (cont'd)

3. Incremental Approach. The initial maximum size of Second Units shall be restricted as described in §19.20.190(D)(2), in order to transition between a setback-based zoning approach and the proposed tile-based system. The restricted sizes are also to be implemented without variances as part of an affordability strategy to minimize the rent charged for Second Units in those instances where the units are rented to a tenant. The initial size shall be determined by a formula that requires the following values:
- the total number of tiles on a parcel available for development;
 - the total number of mutually compliant tiles;
 - the total number of transitional tiles;
 - the total number of future development tiles; and
 - the total number of tiles unavailable for development.

The formula to determine the maximum number of tiles shall be rounded to the nearest whole number, and is as follows:

$$6 \cdot (a/e) \cdot [d/(b+c)] \cdot (a/b)$$

4. Building and Frame. The number allotted by the formula shall indicate the maximum number of tiles that can be initially developed, and must consist only of mutually compliant tiles, unless the formula allocates a greater number of tiles than the amount of mutually compliant tiles, in which case the remaining tiles can be developed from transitional tiles. An equal number of tiles may be partially framed to provide privacy, designate semi-private patio spaces, or indicate future areas for development. The framed tiles may consist only of compliant or transitional tiles unless those prove insufficient, in which case future development tiles may be used in the framing system.

F. Residential Design Guidelines

1. **Purpose.** El Cerrito is known for its primarily single-family residential urban fabric, while still cultivating a diverse range in the visual character of its buildings. While stylistic elements may differ, many neighborhoods are made up of buildings with common rhythms and cohesive elements of architectural expression. These neighborhoods are in large part what make El Cerrito an attractive place to live, work, and visit. In order to maintain the visual interest of a neighborhood, it is important that the design of new Second Units be compatible with nearby buildings--enough buildings out of context with their surroundings can be disruptive to the neighborhood character and, if repeated often enough, to the image of the City as a whole. However, a certain threshold of variety is necessary to avoid the bland and lifeless qualities of more recent suburban developments. Rather than simply replicating the design of the primary dwelling, new Secondary Units should seek to achieve the same level of thought, craft, and variety that exists across all of the primary units on a block.

	build?	frame?
	yes	yes
	if necessary*	yes
	no	if necessary*

*can build only if formula cap exceeds other available categories

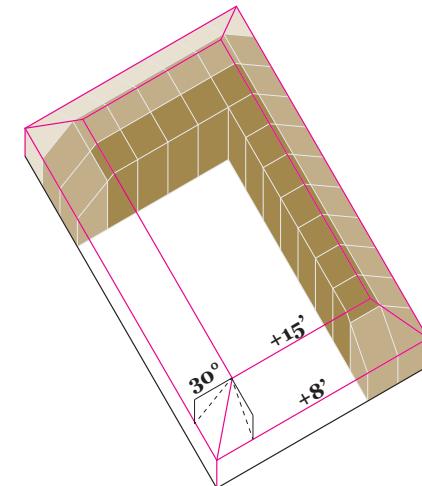


Figure 19.20.190(E)(1)

incremental formula: $6 \left[\frac{a}{e} \cdot \frac{d}{(b+c)} \cdot \frac{a}{b} \right]$ $6 \left[\frac{35}{35} \cdot \frac{9}{(10+16)} \cdot \frac{35}{10} \right] = 7.25 \approx 7 \text{ tiles}$

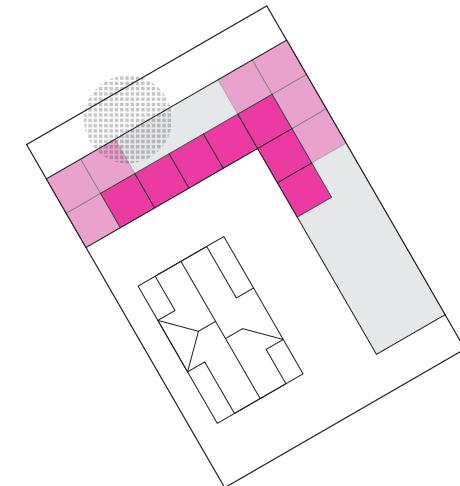
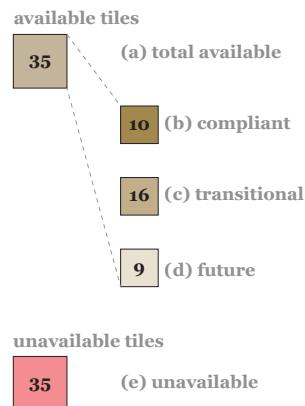


Figure 19.20.190(E)(3-4)

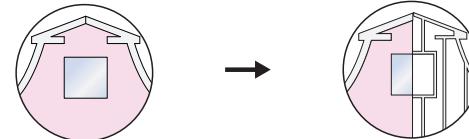
§19.20.190 - 2016 Updates (cont'd)

The Residential Design Guidelines (Guidelines) articulate expectations regarding the character of the built environment and are intended to promote design that will protect neighborhood character, enhancing the attractiveness and quality of life in the City. The Guidelines address basic principles of urban design that will result in residential development that maintains cohesive neighborhood identity, preserve historic resources, and enhances the unique setting and character of the City and its residential neighborhoods.

2. **Architectural Compatibility.** The architectural design, exterior materials and colors, roof pitch and style, type of windows, and trim details of the second unit shall incorporate a delicate complexity that is difficult to immediately or easily perceive. The Secondary Unit's elements shall be derived from the primary dwelling and its immediately adjacent neighbors. It shall be visually harmonious and compatible with the primary dwelling's design while blending elements from adjacent buildings. Direct imitation or pastiche, however, shall be disallowed to ensure the Secondary Unit has a unique, and comprehensive design. Important themes to consider are as follows:
 - (a) **Source.** Color photographs of the street-facing side(s) of the primary dwelling unit shall be used to create an interpretive drawing of the primary dwelling in elevation. This drawing should indicate the desired approach towards the Secondary Unit's design. The photographs and drawing shall be submitted with the second unit building permit application and construction documents.
 - (b) **Perception.** The design should strive to engage more than the purely visual sense and sensation. While drawing from the details of the primary dwelling, the Secondary Unit shall challenge and engage the non-aristotelean senses, including: orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination.
 - (c) **Design Elements.** The requisite delicate complexity of the design shall be achieved by careful and craftful interpretation of the following components: materiality, scale, rhythm, transparency, reflectivity, color, or formal theme with variations.
3. **Design Guidelines.** The delicate complexity that is difficult to immediately or easily perceive shall be created, in part, through the general methodology established above. However, more specific guidelines can help instill this level of complexity into the project through more detailed processes. The guidelines shown below are meant to serve as frameworks to create site-specific architecture that challenges the homogeny of prescriptive design. Ultimately, the Planning and Design Commission will decide the architectural merit of proposals for Secondary Units based on these general strategies:

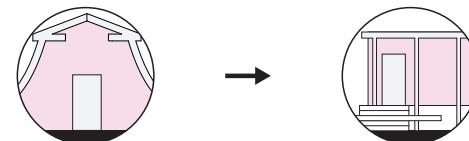
3. Design Guidelines (cont'd)

- (a) **Built Form.** The Second Unit's design strategy must incorporate the framed portion of the tiles into the overall built form.



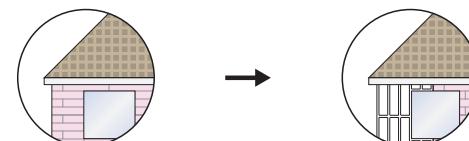
Example: Architectural characteristics from the primary unit should be considered or reinterpreted, such as the mansard roof pictured here.

- (b) **Floor Heights.** The framing design may be used structurally to support a slight elevation for the Second Unit's finished floor height without counting towards the framed tile requirement.



Example: The frame system is incorporated into the Second Unit's facade, creating a colonnaded rhythm that also lifts the unit off the ground to promote a more nimble appearance.

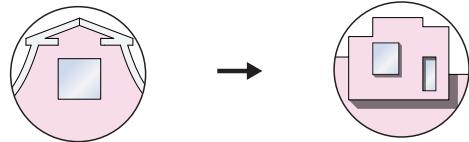
- (c) **Enclosure.** The framed elements may be roofed, elevated to the Second Unit's finished floor height, or partially enclosed with low walls, but shall not incorporate all three of these strategies.



Example: An exterior wall transitions into a frame-only system while the roof continues unobstructed by the shift.

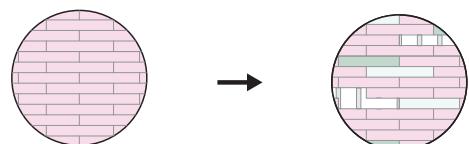
§19.20.190 - 2016 Updates (cont'd)

- (d) **Tile Geometries.** Although the tile system can be buffered by the 3' projection limit, the square tiles may also be expressed in the reinterpretation of elements from the primary unit.



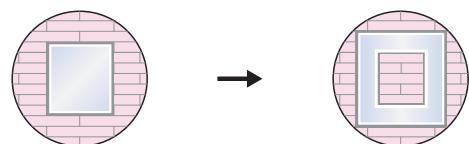
Example: *The sloped edges of the mansard roof are adapted into a stepped, rectangular approach to express the tiles.*

- (e) **Primary Material.** The frame, or elements from adjacent properties, may be subtly incorporated into the pattern or material selection of the Second Unit.

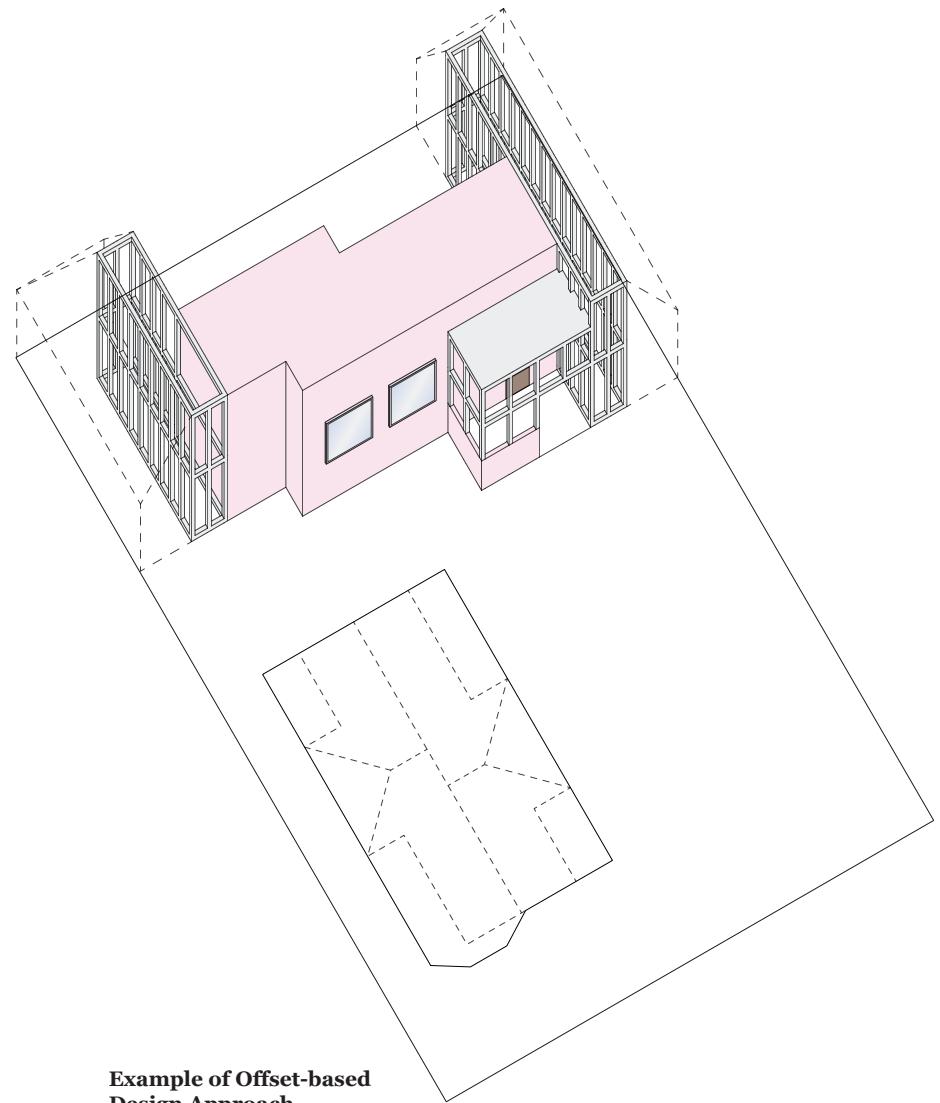


Example: *The primary unit's wood siding is mimicked while exposing the frame in certain moments and incorporating the colors of adjacent houses.*

- (f) **Offset.** The offset of walls from wall framing system may be reinterpreted in other architectural aspects of the design, such as material relationships, fenestration, or formal elements.



Example: *The glazing is offset from the traditional and expected relationship presented by the primary unit.*



EL CERRITO
city of
**Development Standards
and
Residential Design Guidelines
for
Subtle Secondary Units**

Single-Source Subtlety

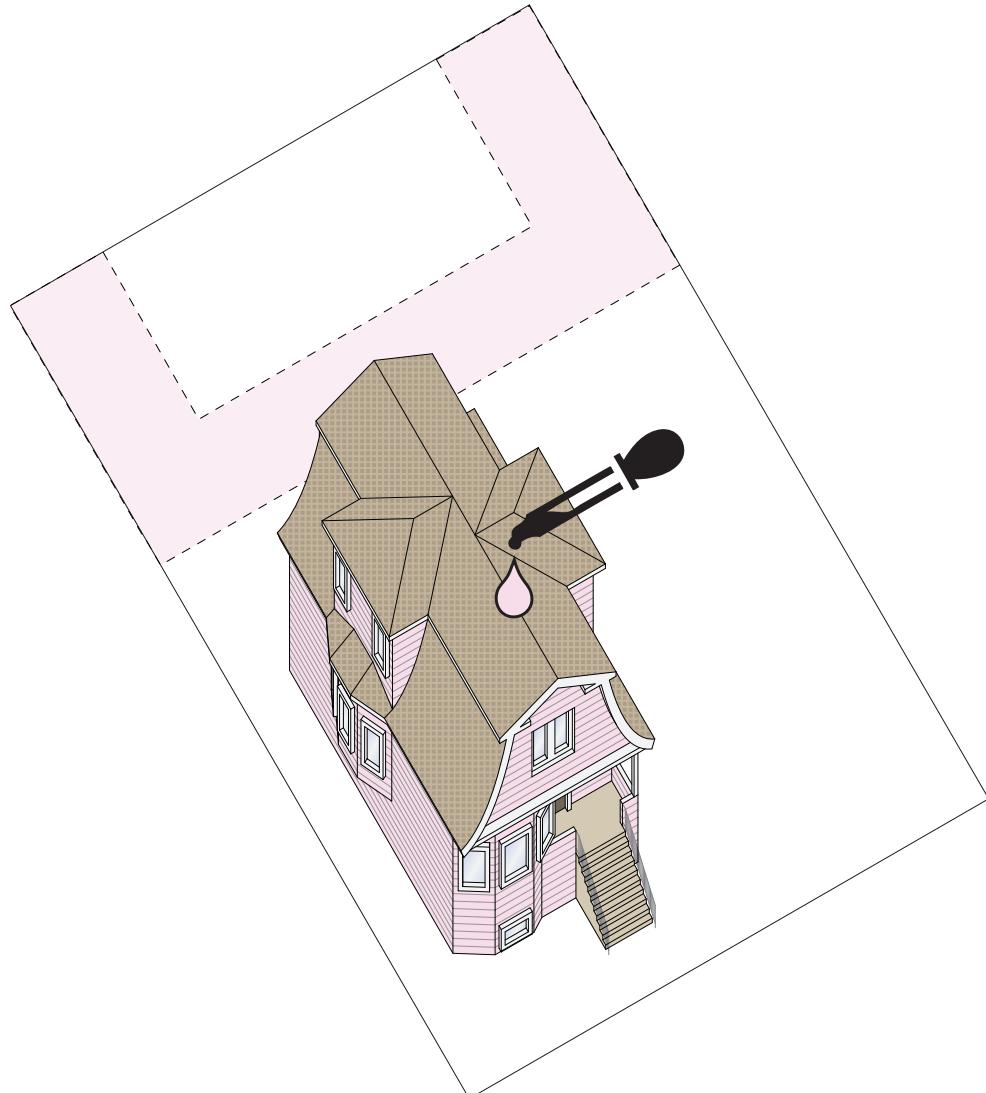
Definitions

Subtle:	characterized by a delicate complexity that is not easily or immediately perceived
Secondary Unit:	an independently occupied unit that shares a lot with an existing unit(s) and is subject to regulations permitting these units to exist as-of-right
Single-Source Subtlety:	a design strategy for Secondary Units grounded in the architectural styles and motifs of the Primary Unit but prohibited from direct copies and imitations of the overall aesthetic of the Primary Unit.

§19.20.190 - 2016 Updates

The following supplemental regulations are intended to comply with Government Code Sections 65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

- A. Where Allowed. Second Units may be established on any lot in the RS, RD or RM district where a primary single family dwelling has been previously established or is proposed to be established in conjunction with construction of a second unit. Only one Second Unit is permitted per primary single-family dwelling on the same lot.
- B. Owner Occupancy. The legal owner of the property shall occupy either the primary dwelling or Second Unit as the owner's primary residence. Prior to the issuance of a building permit for a Second Unit, the applicant shall record notice of this requirement as a deed restriction, in accordance with Subsection I, in the Contra Costa County Recorder's Office.
- C. Type of Unit. A Second Unit may be attached, detached, or located within the living area of the primary dwelling unit on the lot, subject to the standards of this Section.



§19.20.190 - 2016 Updates (cont'd)

D. Secondary Unit Footprints

1. The maximum floor area of a detached Second Unit shall be assessed based on the parcel's size and the distance between the rearmost wall of the Primary Unit to the parcel's edge furthest from the street. The minimum criteria are as follows:
 - (a) The parcel width, measured as the distance between the two longest edges of the parcel perpendicular or intersecting with the street frontage, shall be at least 36 feet to meet the eligibility standards for a Secondary Unit
 - (b) The minimum distance between the rearmost wall of the Primary Unit and the parcel edge furthest from the street frontage shall be 30 feet, unless the Primary Unit is situated on the parcel so that a minimum distance of 20 feet exists between the edge of the Primary Unit and the length of a property line that intersects the street frontage.
2. If a parcel meets the eligibility criteria established herein, the footprint of the Secondary Unit shall conform to the following standards:
 - (a) an occupiable space 12 feet in depth spanning the entire width of the property
 - (b) the space must be a minimum of 12 feet away from the rear lot line
 - (c) the space must be the smaller of either the remaining distance in the ZONE, or a 12 foot separation from the primary unit, and
 - (d) 12 foot wide spaces along both sides of the property so as to enclose at the largest possible courtyard within the occupiable space of the Second Unit.

E. Development Standards

1. Second Units shall conform to setback, height, lot coverage, and other zoning requirements derived from those applicable to the primary dwelling in the zoning district where the Second Unit is proposed, subject to the following specific standards:
 - (a) The maximum height of a detached Second Unit is 15 feet. A detached Second Unit may exceed 15 feet in height with the approval of a Conditional Use Permit.
 - (b) An attached or detached Second Unit shall be located on the interior side of a corner lot or behind the existing dwelling.
 - (c) An attached Second Unit that results in two-story construction shall be located in the rear half of the structure.
 - (d) A Maximum building envelope defined by an 8' height limit at the parcel edges; 45° daylight planes away from property lines, with no angled daylighting plane at the Secondary Unit's street-facing facade, and a 15' maximum height limit.

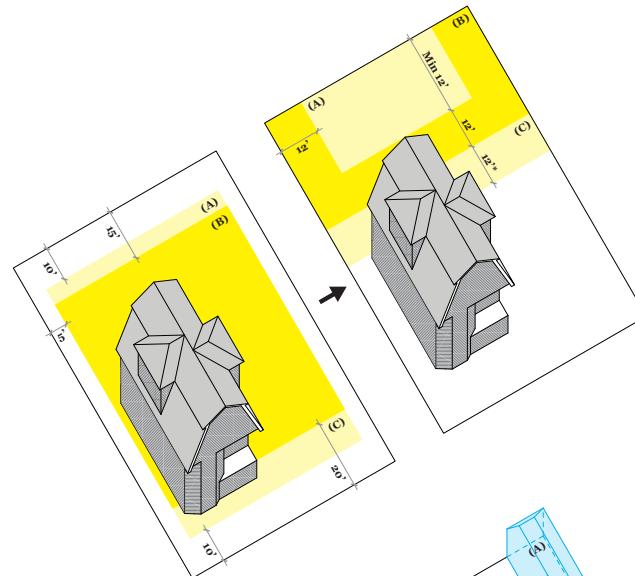


Figure 19.20.190(D)

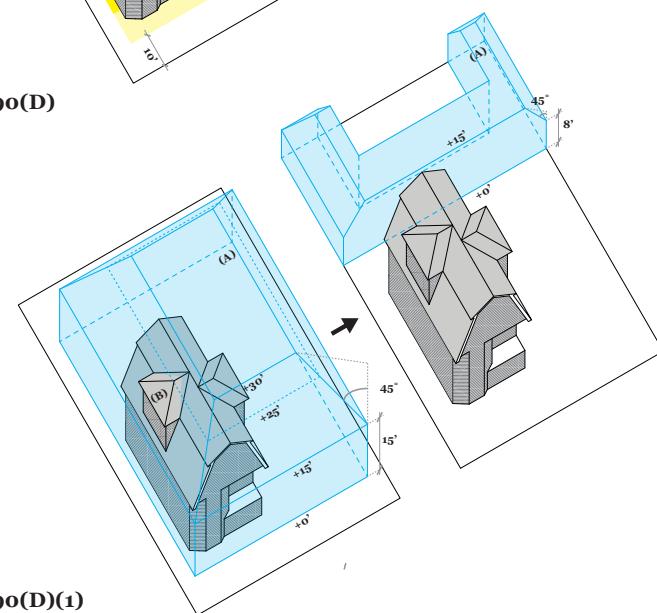


Figure 19.20.190(D)(1)

§19.20.190 - 2016 Updates (cont'd)

2. Projections Beyond Height Limits and Daylight Planes. Permitted projections beyond height limits and daylight planes are listed below. In any case where the dimensions of allowed projections specified below differ from those of Section 19.06.030(F), the more restrictive provision shall govern. Permitted projections beyond maximum building envelope may not exceed 4' beyond the front of the secondary unit horizontally, may not 20' above grade vertically, and shall maintain a 45° daylight planes along the rearmost property line edge. Specific projections shall be governed by the following restrictions:
- Chimneys up to 20 square feet in horizontal area. Chimneys may project up to 10 feet beyond the maximum height limit.
 - Dormers, provided that they are no more than 15 feet in width and do not occupy more than 20 percent of the total roof area.
 - Bay windows, not exceeding eight feet in length, up to a maximum of two feet projection past the main envelope.
 - Cornices, eaves, canopies, up to a maximum of two feet projection past the main envelope.
 - Other minor projections up to two feet that collectively do not extend more than 50% of the length of one side of the building.
 - Skylights, up to one and one half foot above the level of the roof.

Height increases beyond those stated above shall require a variance.

F. Residential Design Guidelines

1. **Purpose.** El Cerrito is known for its primarily single-family residential urban fabric, while still cultivating a diverse range in the visual character of its buildings. While stylistic elements may differ, many neighborhoods are made up of buildings with common rhythms and cohesive elements of architectural expression. These neighborhoods are in large part what make El Cerrito an attractive place to live, work, and visit. In order to maintain the visual interest of a neighborhood, it is important that the design of new Second Units be compatible with nearby buildings--enough buildings out of context with their surroundings can be disruptive to the neighborhood character and, if repeated often enough, to the image of the City as a whole. However, a certain threshold of variety is necessary to avoid the bland and lifeless qualities of more recent suburban developments. Rather than simply replicating the design of the primary dwelling, new Secondary Units should seek to achieve the same level of thought, craft, and variety that exists across all of the primary units on a block.

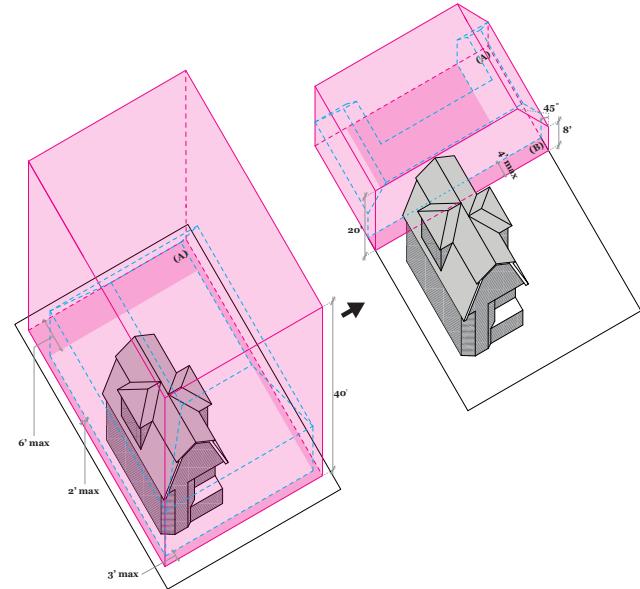


Figure 19.20.190(D)(2)

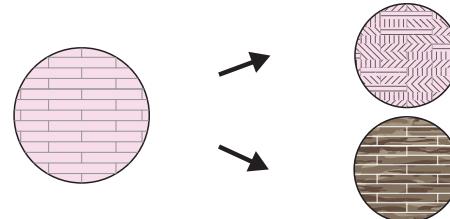
§19.20.190 - 2016 Updates (cont'd)

The Residential Design Guidelines (Guidelines) articulate expectations regarding the character of the built environment and are intended to promote design that will protect neighborhood character, enhancing the attractiveness and quality of life in the City. The Guidelines address basic principles of urban design that will result in residential development that maintains cohesive neighborhood identity, preserve historic resources, and enhances the unique setting and character of the City and its residential neighborhoods.

2. **Architectural Compatibility.** The architectural design, exterior materials and colors, roof pitch and style, type of windows, and trim details of the second unit shall incorporate a delicate complexity that is difficult to immediately or easily perceive. The Secondary Unit's elements shall be derived from the primary dwelling, and shall be visually harmonious and compatible with the primary dwelling's design. Direct imitation or pastiche, however, shall be disallowed to ensure the Secondary Unit has a unique, and comprehensive design. Important themes to consider are as follows:
 - (a) **Source.** Color photographs of the street-facing side(s) of the primary dwelling unit shall be used to create an interpretive drawing of the primary dwelling in elevation. This drawing should indicate the desired approach towards the Secondary Unit's design. The photographs and drawing shall be submitted with the second unit building permit application and construction documents.
 - (b) **Perception.** The design should strive to engage more than the purely visual sense and sensation. While drawing from the details of the primary dwelling, the Secondary Unit shall challenge and engage the non-aristotelean senses, including: orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination.
 - (c) **Design Elements.** The requisite delicate complexity of the design shall be achieved by careful and craftful interpretation of the following components: materiality, scale, rhythm, transparency, reflectivity, color, or formal theme with variations.
3. **Design Guidelines.** The delicate complexity that is difficult to immediately or easily perceive shall be created, in part, through the general methodology established above. However, more specific guidelines can help instill this level of complexity into the project through more detailed processes. The guidelines shown below are meant to serve as frameworks to create site-specific architecture that challenges the homogeny of prescriptive design. Ultimately, the Planning and Design Commission will decide the architectural merit of proposals for Secondary Units based on these general strategies:

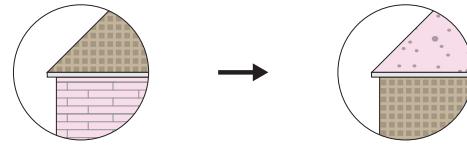
3. Design Guidelines (cont'd)

- (a) **Primary Material.** The primary dwelling's material, color, and pattern shall inform the abstracted selection of the major material choices for the Secondary Unit. The Secondary Unit may two out of the following three elements of the primary dwelling's surface treatment: color, pattern, material.



Example: A pink, wood-paneled wall with alternating row center offset pattern in a primary dwelling can be adapted to a pink wall with texture mimicking a similar pattern, or could unpainted wood siding arranged in the same pattern.

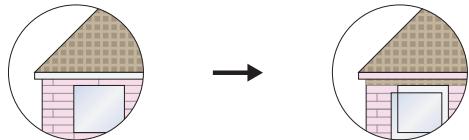
- (b) **Material Relationships.** The pattern established by the primary dwelling between material and building element shall be inverted, offset, or challenged in some way by the Secondary Unit's use of material.



Example: The primary dwelling's use of pink wood siding and brown shingle roofing is inverted to a pink-surfaced roof and a shingled wall system.

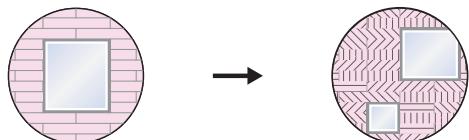
§19.20.190 - 2016 Updates (cont'd)

- (c) **Material Misalignment.** If the traditional composition of building materials is not challenged as per §19.20.190.F(b), then the pattern of material assembly shall be subtly misaligned, mismatched, or offset, to generate delicate complexity.



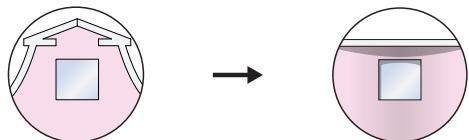
Example: *The material qualities of the primary dwelling are adapted to the Secondary Unit, but complexity is exploited by misaligning the materials from their expected edges.*

- (d) **Glazing Patterns.** The size, shape, and location of windows on the primary dwelling shall be similarly abstracted in their use in the Secondary Unit by changing at least one of these variables.

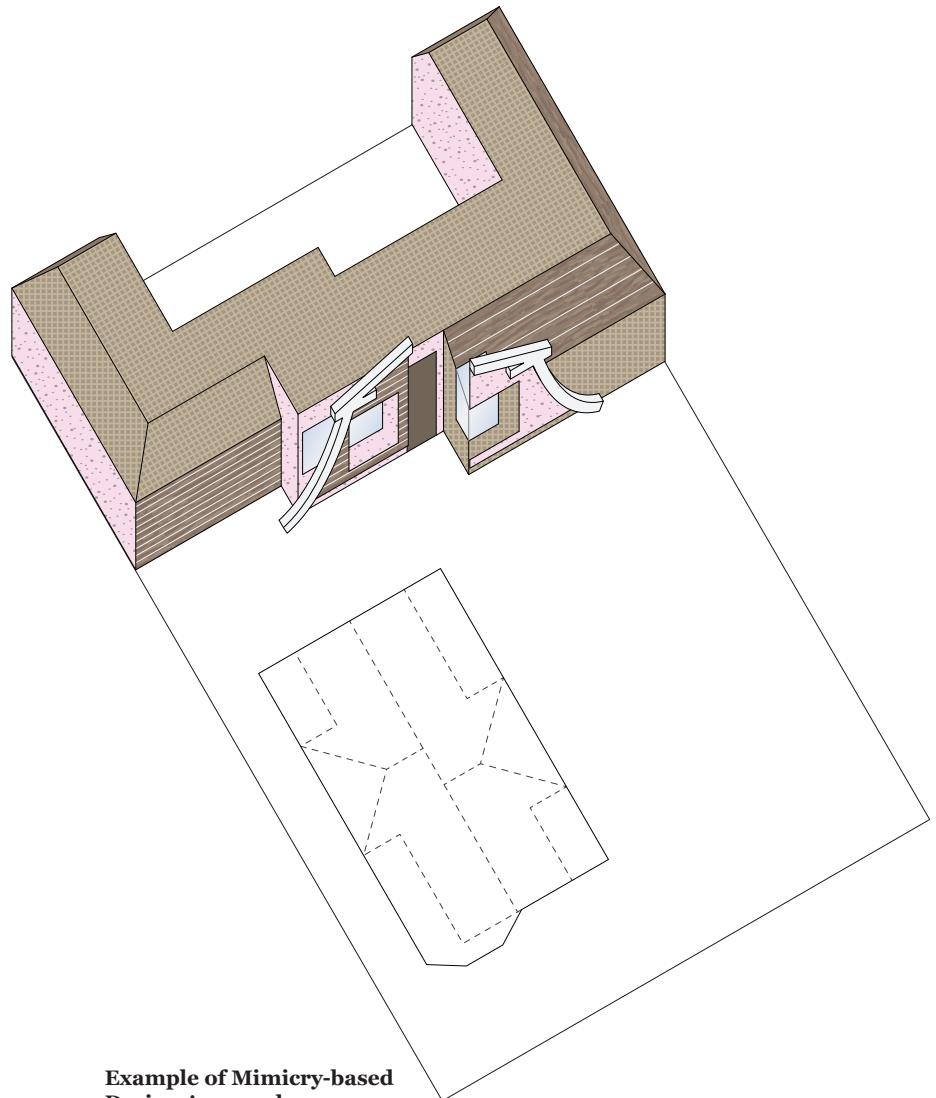


Example: *The primary dwelling's strategy of a centered, simple window frame aligned with the siding pattern is reinterpreted with the same frame used with different proportions and asymmetrically aligned.*

- (e) **Architectural Elements.** Prominent architectural elements from the primary dwelling shall be incorporated into the Secondary Unit's design in an interesting, novel, and delicately complex manner.



Example: *The mansard roof form in the primary dwelling is mimicked in the Secondary Unit, but the curves and angles are applied in plan instead of in elevation.*



Adjacent Sample Subtlety

Definitions

Subtle:

characterized by a delicate complexity that is not easily or immediately perceived

Secondary Unit:

an independently occupied unit that shares a lot with an existing unit(s) and is subject to regulations permitting these units to exist as-of-right

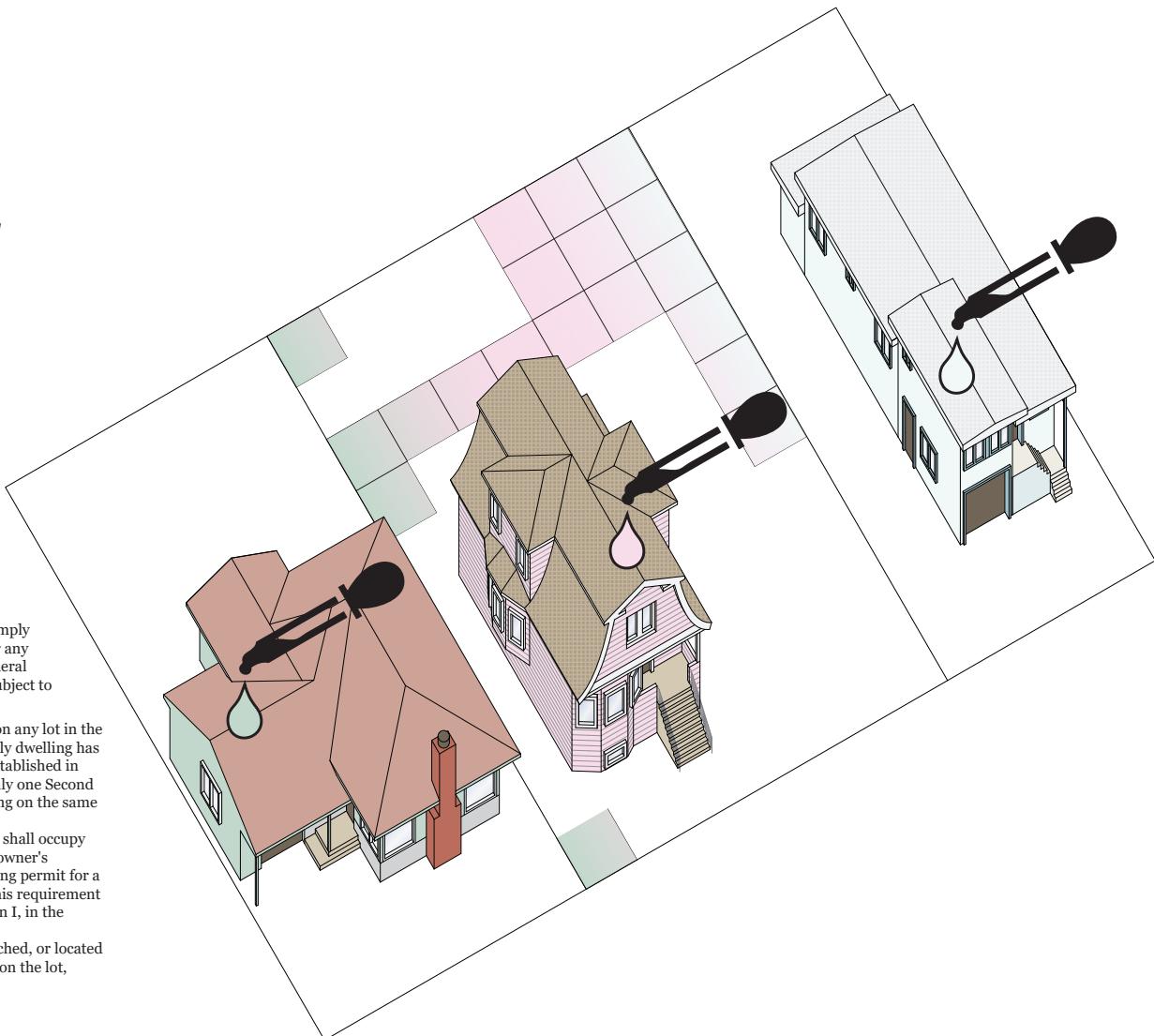
Adjacent Sample Subtlety:

a design strategy for Secondary Units that incorporates the characteristics and complexities from its primary unit, as well as primary units on adjacent parcels sharing the same street edge

§19.20.190 - 2016 Updates

The following supplemental regulations are intended to comply with Government Code Sections 65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

- A. Where Allowed. Second Units may be established on any lot in the RS, RD or RM district where a primary single family dwelling has been previously established or is proposed to be established in conjunction with construction of a second unit. Only one Second Unit is permitted per primary single-family dwelling on the same lot.
- B. Owner Occupancy. The legal owner of the property shall occupy either the primary dwelling or Second Unit as the owner's primary residence. Prior to the issuance of a building permit for a Second Unit, the applicant shall record notice of this requirement as a deed restriction, in accordance with Subsection I, in the Contra Costa County Recorder's Office.
- C. Type of Unit. A Second Unit may be attached, detached, or located within the living area of the primary dwelling unit on the lot, subject to the standards of this Section.



§19.20.190 - 2016 Updates (cont'd)

D. Secondary Unit Footprints

1. Tile-based system. The maximum floor area of a detached Second Unit shall be assessed based on a division of the parcel into equally spaced 10' x 10' tiles. Where parcel size is not in an increment of 10' the tiles may overlap or separate by a margin of 2.5' so as to maintain the grid as uniform as possible. Where the separation or overlap of tiles is within this threshold, the tiles shall be considered adjacent and contiguous and may be developed as such.
2. Development Tiles. The availability of selected tiles for development shall be decided on a block-wide basis, so as to include neighboring properties' effects in the following categories:
 - (a) Tiles which shall not receive sufficient daylight shall not be developed. Sufficient daylight is defined as receiving sunlight for 70% of daylight hours during the summer solstice, 60% during the equinoxes, and 40% during the winter solstice;
 - (b) Tiles which would interfere with the preservation of mature trees, defined as those with a trunk diameter of at least 24", shall not be developed;
 - (c) The diagrams accompanying this text is for reference purposes only, and illustrates the effects only from a single lot so as to highlight the variables described herein.
3. Bulk standards. Second units require the amalgamation of at least three tiles. So as to reduce the bulk of secondary units, the following provisions shall govern:
 - (a) The center point of each tile shall be identified;
 - (b) A line shall be drawn from the center point of every tile to the center point of every adjacent tile that is available for development, including diagonally adjacent tiles;
 - (c) The tiles shall be sorted by their total number of adjacencies into the following categories: 1 adjacency, 2 adjacencies, 3 adjacencies, 4 adjacencies, 5-7 adjacencies, and 8 adjacencies;
 - (d) Tiles which have 8 adjacencies--those which are surrounded on every side both cardinally and diagonally--shall be ineligible for development.
 - (e) The diagram accompanying this text is for reference purposes only, and illustrates the adjacencies only from a single lot. The regulations stipulate that adjacencies from the entire block must be considered uniformly.
- E. Development Standards
 1. Primacy. Second Units shall not conform to the setback, height, lot coverage, and other zoning requirements derived from those applicable to the primary dwelling in the zoning district where the Second Unit is proposed.
 2. Lot-based provisions. The provisions of this chapter shall supersede the setback and lot

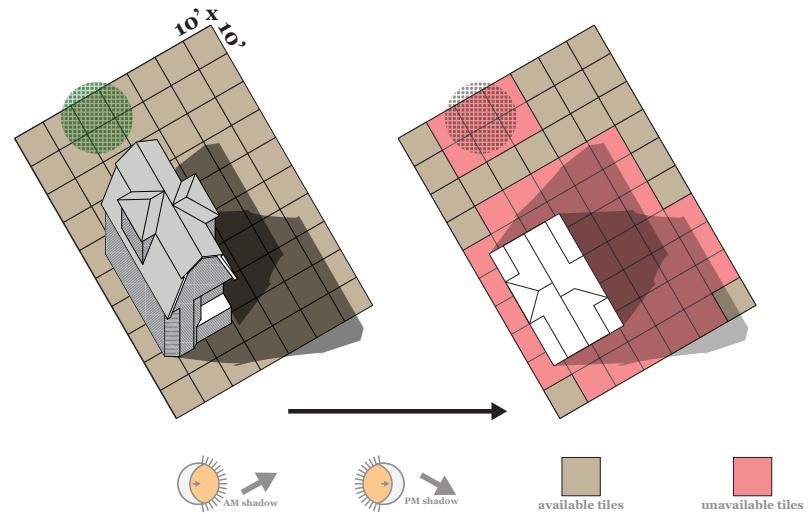


Figure 19.20.190(D)(2)

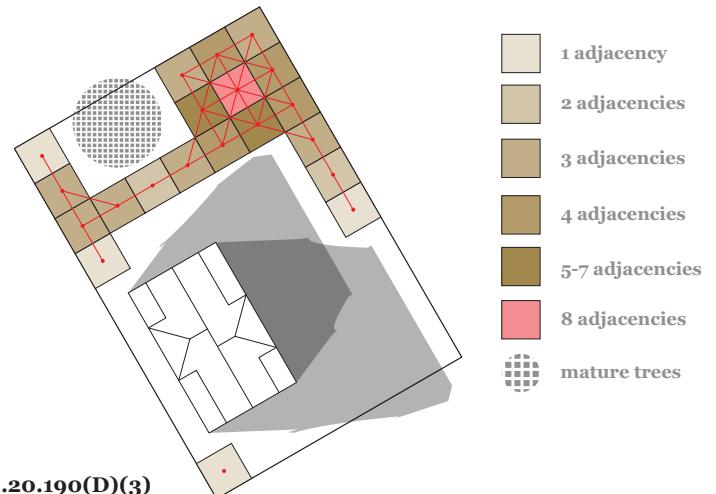


Figure 19.20.190(D)(3)

§19.20.190 - 2016 Updates (cont'd)

- coverage ordinances that apply to the primary unit on the lot, and are derived from the size and position of the lot.
3. Height limits. Height limits shall be determined by the categories established in §19.20.190(D)(3). The height limits established in this section shall apply to interior volumes only. The height of roofing and other exterior elements shall be governed in Section 4 under projections. The height limits for each category is as follows:
 - (a) 1 adjacency, 8'
 - (b) 2 adjacencies, 10'
 - (c) 3 adjacencies, 12'
 - (d) 4 adjacencies, 14'
 - (e) 5-7 adjacencies, 16'
 4. Projections Beyond Height Limits and Daylight Planes. Permitted projections beyond height limits and daylight planes are listed below. In any case where the dimensions of allowed projections specified below differ from those of Section 19.06.030(F), the more restrictive provision shall govern. Permitted projections beyond maximum building envelope may not exceed more than 3' beyond the edge of any tile in any direction. Roofing elements may smoothly transition between tiles of different height limits as long as they remain within the 3' projection bubble.

F. Residential Design Guidelines

1. **Purpose.** El Cerrito is known for its primarily single-family residential urban fabric, while still cultivating a diverse range in the visual character of its buildings. While stylistic elements may differ, many neighborhoods are made up of buildings with common rhythms and cohesive elements of architectural expression. These neighborhoods are in large part what make El Cerrito an attractive place to live, work, and visit. In order to maintain the visual interest of a neighborhood, it is important that the design of new Second Units be compatible with nearby buildings--enough buildings out of context with their surroundings can be disruptive to the neighborhood character and, if repeated often enough, to the image of the City as a whole. However, a certain threshold of variety is necessary to avoid the bland and lifeless qualities of more recent suburban developments. Rather than simply replicating the design of the primary dwelling, new Secondary Units should seek to achieve the same level of thought, craft, and variety that exists across all of the primary units on a block.

The Residential Design Guidelines (Guidelines) articulate expectations regarding the

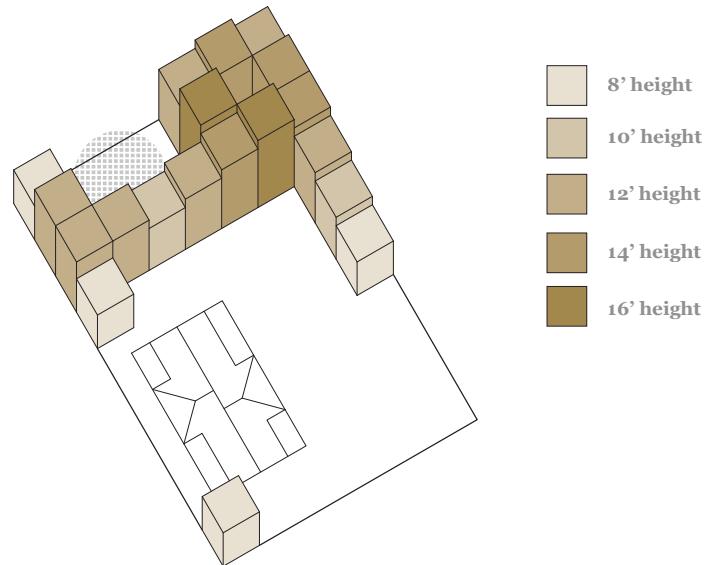


Figure 19.20.190(E)(3)

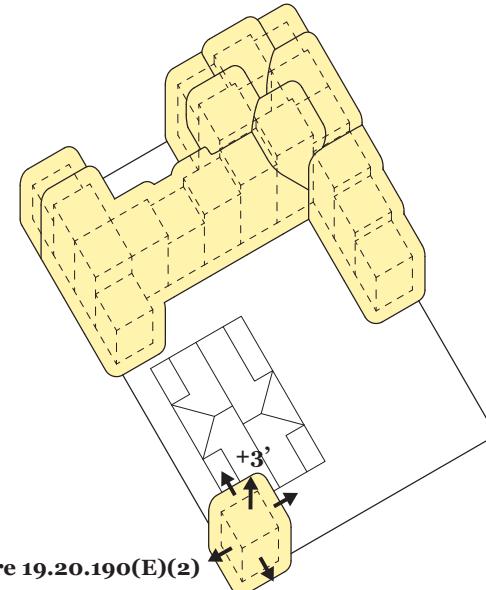


Figure 19.20.190(E)(2)

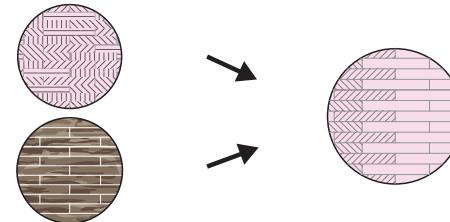
§19.20.190 - 2016 Updates (cont'd)

character of the built environment and are intended to promote design that will protect neighborhood character, enhancing the attractiveness and quality of life in the City. The Guidelines address basic principles of urban design that will result in residential development that maintains cohesive neighborhood identity, preserve historic resources, and enhances the unique setting and character of the City and its residential neighborhoods.

2. **Architectural Compatibility.** The architectural design, exterior materials and colors, roof pitch and style, type of windows, and trim details of the second unit shall incorporate a delicate complexity that is difficult to immediately or easily perceive. The Secondary Unit's elements shall be derived from the primary dwelling and its immediately adjacent neighbors. It shall be visually harmonious and compatible with the primary dwelling's design while blending elements from adjacent buildings. Direct imitation or pastiche, however, shall be disallowed to ensure the Secondary Unit has a unique, and comprehensive design. Important themes to consider are as follows:
 - (a) **Source.** Color photographs of the street-facing side(s) of the primary dwelling unit shall be used to create an interpretive drawing of the primary dwelling in elevation. This drawing should indicate the desired approach towards the Secondary Unit's design. The photographs and drawing shall be submitted with the second unit building permit application and construction documents.
 - (b) **Perception.** The design should strive to engage more than the purely visual sense and sensation. While drawing from the details of the primary dwelling, the Secondary Unit shall challenge and engage the non-aristotelian senses, including: orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination.
 - (c) **Design Elements.** The requisite delicate complexity of the design shall be achieved by careful and craftful interpretation of the following components: materiality, scale, rhythm, transparency, reflectivity, color, or formal theme with variations.
3. **Design Guidelines.** The delicate complexity that is difficult to immediately or easily perceive shall be created, in part, through the general methodology established above. However, more specific guidelines can help instill this level of complexity into the project through more detailed processes. The guidelines shown below are meant to serve as frameworks to create site-specific architecture that challenges the homogeny of prescriptive design. Ultimately, the Planning and Design Commission will decide the architectural merit of proposals for Secondary Units based on these general strategies:

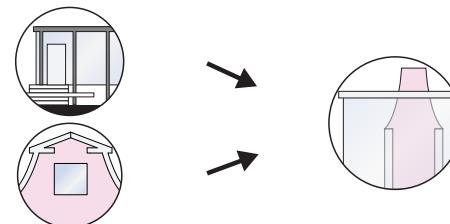
3. Design Guidelines (cont'd)

- (a) **Primary Material.** The source buildings' material, color, and pattern shall inform the abstracted selection of the major material choices for the Secondary Unit. The Secondary Unit shall consider the following three elements of the primary dwellings' surface treatment: color, pattern, texture, reflectivity, transparency, material.



Example: Two different colors, materials, and patterns, can be combined into a wall treatment design that incorporates the wood material with the pink paint color, as well as patterns and textures from both sources.

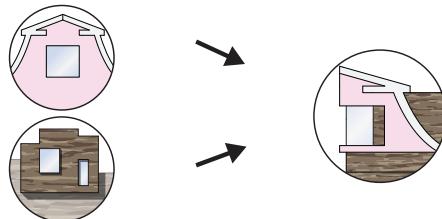
- (b) **Formal Relationships.** Even presumably incongruous architectural styles can be adapted into a cohesive, multi-sourced design through the clever incorporation of formal elements or relationships.



Example: A mid-century glass-style house adjacent to a more traditionalist home provides difficult sources to reconcile, but even minor elements like the chimney can adopt the color and form of the mansard roof.

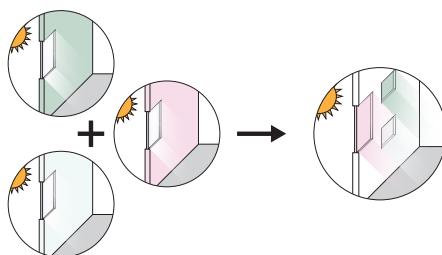
§19.20.190 - 2016 Updates (cont'd)

- (c) **Material Relationships.** Complementary to §19.20.190.F(3)(b), the adjacent primary homes' more intangible qualities, such as the senses of orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination shall be combined craftily.

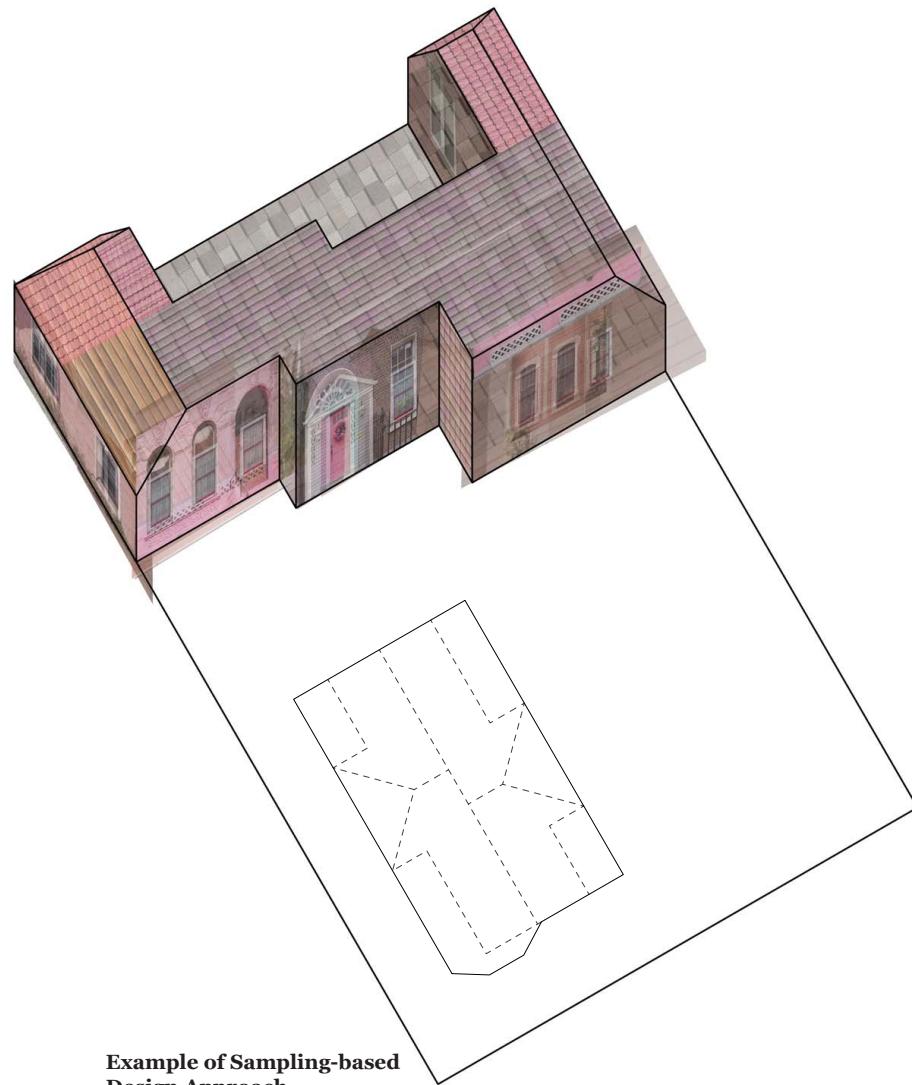


Example: The material qualities of the primary dwelling are adapted to the Secondary Unit, but complexity is exploited by misaligning the materials from their expected edges.

- (d) **Glazing Patterns.** The size, shape, and location of windows on the primary dwelling shall be similarly reconciled in their use in the Secondary Unit. Direct overlay or imitation of the sources' fenestration is not necessarily required, as even in combining existing strategies, an entirely new outcome can be created.



Example: The three sources are quite similar in their fenestration techniques, relying on punched windows through a colorful exterior wall. This reconstitution of the elements interprets the colors into the glazing instead of the wall producing a new effect while still incorporating the three roots.





Development Standards and Residential Design Guidelines for Subtle Secondary Units

Façade Projection Subtlety

Definitions

Subtle:

characterized by a delicate complexity that is not easily or immediately perceived

Secondary Unit:

an independently occupied unit that shares a lot with an existing unit(s) and is subject to regulations permitting these units to exist as-of-right

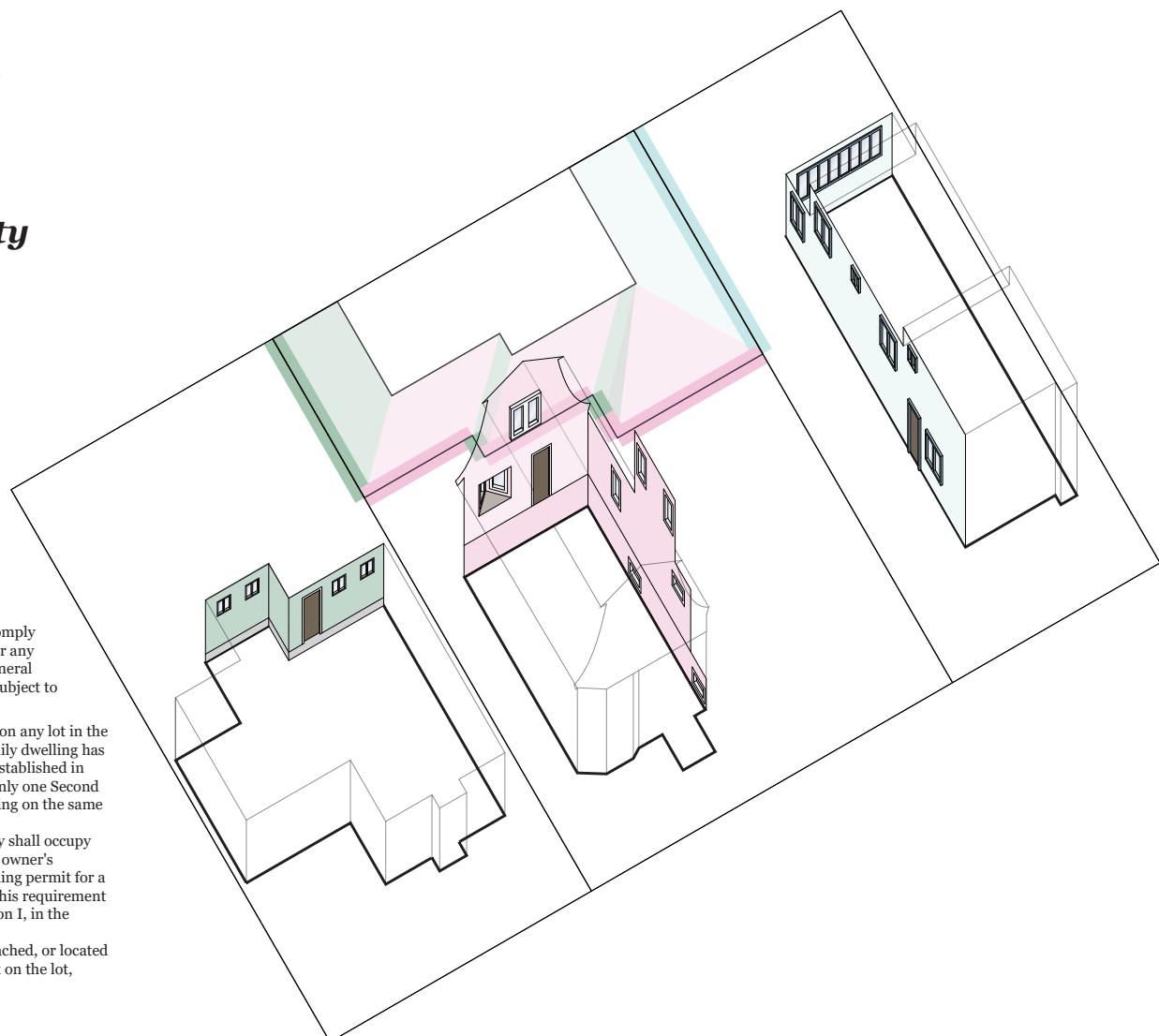
Façade Projection Subtlety:

a design strategy for Secondary Units derived by reinterpreting the characteristics and complexities from the nearest Primary Unit wall facing the Secondary Unit regardless of lot or parcel

§19.20.190 - 2016 Updates

The following supplemental regulations are intended to comply with Government Code Sections 65852.150 and 65852.2 or any successor statutes, on second units and implement the General Plan, by allowing Second Units in all residential districts subject to the following requirements:

- A. Where Allowed. Second Units may be established on any lot in the RS, RD or RM district where a primary single family dwelling has been previously established or is proposed to be established in conjunction with construction of a second unit. Only one Second Unit is permitted per primary single-family dwelling on the same lot.
- B. Owner Occupancy. The legal owner of the property shall occupy either the primary dwelling or Second Unit as the owner's primary residence. Prior to the issuance of a building permit for a Second Unit, the applicant shall record notice of this requirement as a deed restriction, in accordance with Subsection I, in the Contra Costa County Recorder's Office.
- C. Type of Unit. A Second Unit may be attached, detached, or located within the living area of the primary dwelling unit on the lot, subject to the standards of this Section.



§19.20.190 - 2016 Updates (cont'd)

D. Secondary Unit Footprints

1. The maximum floor area of a detached Second Unit shall be assessed based on the parcel's size and the distance between the rear-most wall of the Primary Unit to the parcel's edge furthest from the street. The minimum criteria are as follows:
 - (a) The parcel width, measured as the distance between the two longest edges of the parcel perpendicular or intersecting with the street frontage, shall be at least 36 feet to meet the eligibility standards for a Secondary Unit
 - (b) The minimum distance between the rearmost wall of the Primary Unit and the parcel edge furthest from the street frontage shall be 30 feet, unless the Primary Unit is situated on the parcel so that a minimum distance of 20 feet exists between the edge of the Primary Unit and the length of a property line that intersects the street frontage.
2. If a parcel meets the eligibility criteria established herein, the footprint of the Secondary Unit shall conform to the following standards:
 - (a) an occupiable space 12 feet in depth spanning the entire width of the property
 - (b) the space must be a minimum of 12 feet away from the rear lot line
 - (c) the space must be the smaller of either the remaining distance in the ZONE, or a 12 foot separation from the primary unit, and
 - (d) 12 foot wide spaces along both sides of the property so as to enclose at the largest possible courtyard within the occupiable space of the Second Unit.

E. Development Standards

1. Second Units shall conform to setback, height, lot coverage, and other zoning requirements derived from those applicable to the primary dwelling in the zoning district where the Second Unit is proposed, subject to the following specific standards:
 - (a) The maximum height of a detached Second Unit is 15 feet. A detached Second Unit may exceed 15 feet in height with the approval of a Conditional Use Permit.
 - (b) An attached or detached Second Unit shall be located on the interior side of a corner lot or behind the existing dwelling.
 - (c) An attached Second Unit that results in two-story construction shall be located in the rear half of the structure.
 - (d) A Maximum building envelope defined by an 8' height limit at the parcel edges; 45° daylight planes away from property lines, with no angled daylighting plane at the Secondary Unit's street-facing facade, and a 15' maximum height limit.

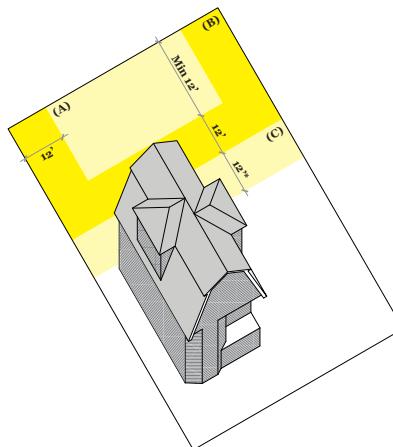


Figure 19.20.190(D)(1)

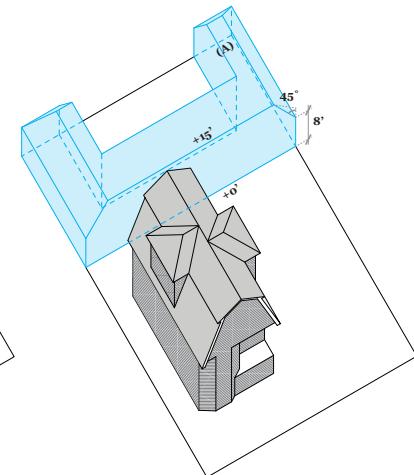


Figure 19.20.190(E)(1)

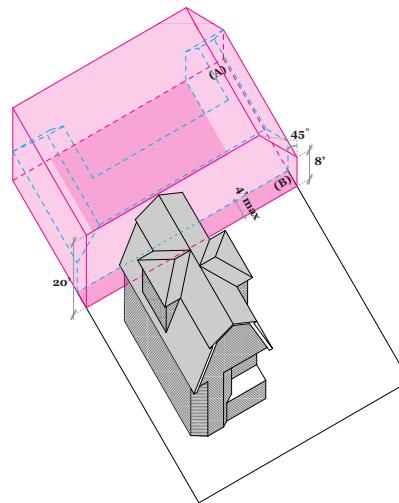


Figure 19.20.190(E)(2)

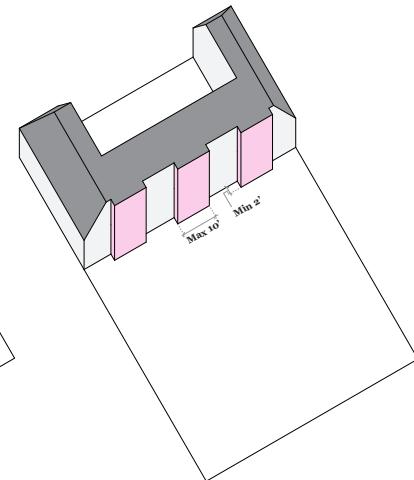


Figure 19.20.190(E)(3)(a)

§19.20.190 - 2016 Updates (cont'd)

2. Projections Beyond Height Limits and Daylight Planes. Permitted projections beyond maximum building envelope may not exceed 4' beyond the front of the secondary unit horizontally, may not 20' above grade vertically, and shall maintain a 45° daylight planes along the rearmost property line edge.
3. Facade Articulation. In order to confirm to the fine-grained scale of the neighborhood, long and unbroken facades shall not be permitted. Articulated elements in the facade shall occupy at least 50 percent of the height of the structure. Additionally, the principal entryway of each residential building shall be incorporated into one of the projections. Exceptions to this rule may be granted by either the Planning Commission via a use permit or through the review of the Design Review Board. Facade articulations may follow any of the following three schemes:
 - (a) all street-facing facades shall have at least one horizontal or vertical projection or recess at least 2' in depth for every 10 linear feet of wall;
 - (b) all street-facing facades shall have at least one horizontal or vertical projection or recess at least 4' in depth for every 20 linear feet of wall; or
 - (c) all street-facing facades shall have at least one horizontal or vertical projection or recess at least 2' in depth for every 10 linear feet of wall in which the articulations may only project a maximum of 4' beyond the building envelope, while the remaining required articulation must be subtracted from the building mass.
4. Facade Projections. The design of outward facing walls of the Secondary Unit shall conform to the style of the nearest facade of any primary unit. Where multiple walls face the Secondary Unit's exterior walls, the architect shall resolve the multiple sources of design inspiration into a cohesive vision that unifies all exterior-facing walls.

F. Residential Design Guidelines

1. Purpose. El Cerrito is known for its primarily single-family residential urban fabric, while still cultivating a diverse range in the visual character of its buildings. While stylistic elements may differ, many neighborhoods are made up of buildings with common rhythms and cohesive elements of architectural expression. These neighborhoods are in large part what make El Cerrito an attractive place to live, work, and visit. In order to maintain the visual interest of a neighborhood, it is important that the design of new Second Units be compatible with nearby buildings—enough buildings out of context with their surroundings can be disruptive to the neighborhood character and, if repeated often enough, to the image of the City as a whole. However, a certain threshold of variety is necessary to avoid the bland and lifeless qualities of more recent suburban developments. Rather than simply replicating the design of the primary dwelling, new Secondary Units should seek to achieve the same level of thought, craft, and variety that exists across all of the primary units on a block.

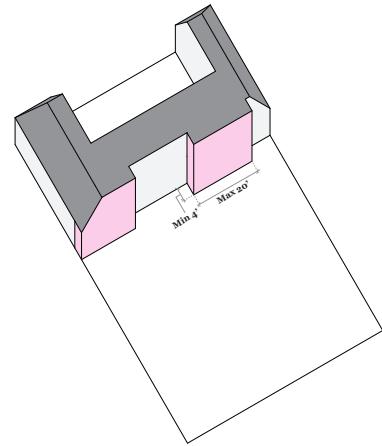


Figure 19.20.190(E)(3)(b)

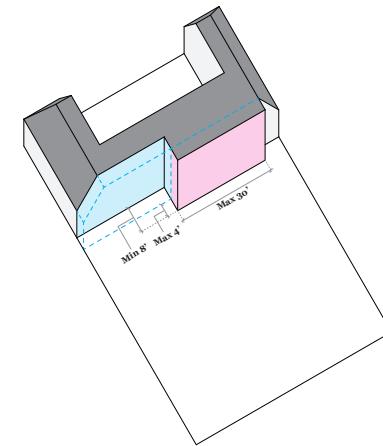


Figure 19.20.190(E)(3)(c)

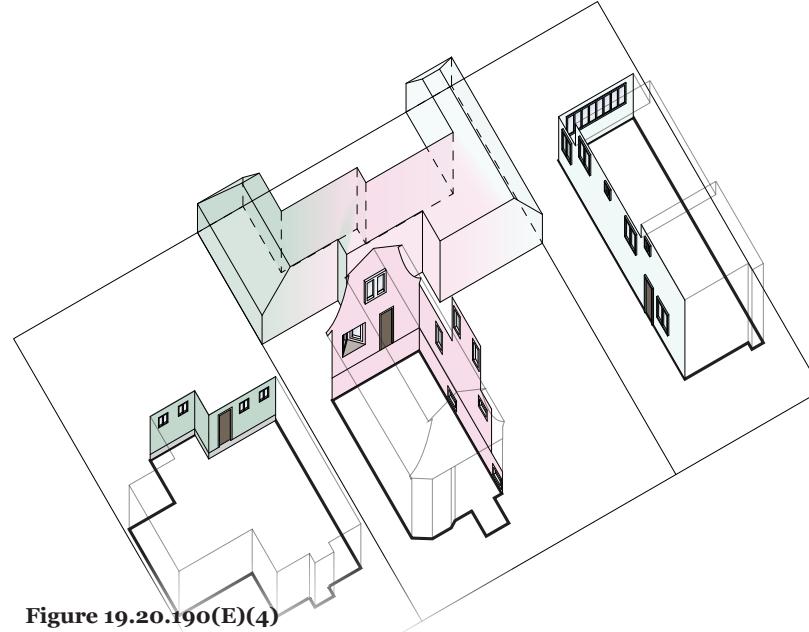


Figure 19.20.190(E)(4)

§19.20.190 - 2016 Updates (cont'd)

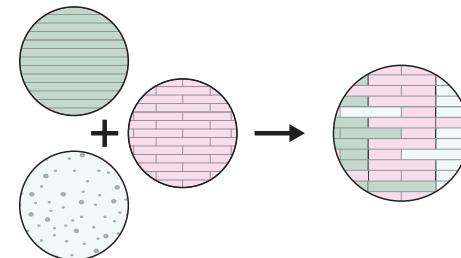
The Residential Design Guidelines (Guidelines) articulate expectations regarding the character of the built environment and are intended to promote design that will protect neighborhood character, enhancing the attractiveness and quality of life in the City. The Guidelines address basic principles of urban design that will result in residential development that maintains cohesive neighborhood identity, preserve historic resources, and enhances the unique setting and character of the City and its residential neighborhoods.

2. Architectural Compatibility. The architectural design, exterior materials and colors, roof pitch and style, type of windows, and trim details of the second unit shall incorporate a delicate complexity that is difficult to immediately or easily perceive. The Secondary Unit's elements shall be derived from the primary dwelling and its immediately adjacent neighbors. It shall be visually harmonious and compatible with the primary dwelling's design while blending elements from adjacent buildings. Direct imitation or pastiche, however, shall be disallowed to ensure the Secondary Unit has a unique, and comprehensive design. Important themes to consider are as follows:

- Source.** Color photographs of the street-facing side(s) of the primary dwelling unit shall be used to create an interpretive drawing of the primary dwelling in elevation. This drawing should indicate the desired approach towards the Secondary Unit's design. The photographs and drawing shall be submitted with the second unit building permit application and construction documents.
 - Perception.** The design should strive to engage more than the purely visual sense and sensation. While drawing from the details of the primary dwelling, the Secondary Unit shall challenge and engage the non-aristotelean senses, including: orientation, gravity, balance, stability, motion, duration, continuity, scale, and illumination.
 - Design Elements.** The requisite delicate complexity of the design shall be achieved by careful and craftful interpretation of the following components: materiality, scale, rhythm, transparency, reflectivity, color, or formal theme with variations.
- 3. Design Guidelines.** The delicate complexity that is difficult to immediately or easily perceive shall be created, in part, through the general methodology established above. However, more specific guidelines can help instill this level of complexity into the project through more detailed processes. The guidelines shown below are meant to serve as frameworks to create site-specific architecture that challenges the homogeny of prescriptive design. Ultimately, the Planning and Design Commission will decide the architectural merit of proposals for Secondary Units based on these general strategies:

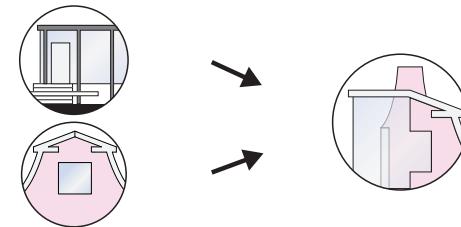
3. Design Guidelines (cont'd)

- (a) **Primary Material.** The source buildings' material, color, and pattern shall inform the abstracted selection of the major material choices for the Secondary Unit. While each wall shall inherit the properties of the nearest-facing facade, the overall design should blur the edges of each source.



Example: Three different colors, materials, and patterns, can be combined into a design that camouflages the edges between different sources.

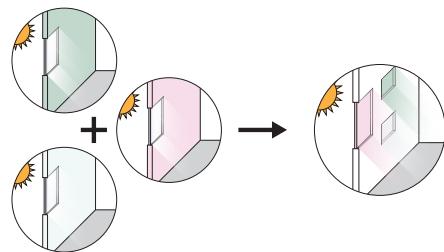
- (b) **Formal Relationships.** Even presumably incongruous architectural styles can be adapted into a cohesive, multi-sourced design through the clever incorporation of formal elements or relationships. Seemingly abrupt transitions should incorporate delicate formal references of the other sources.



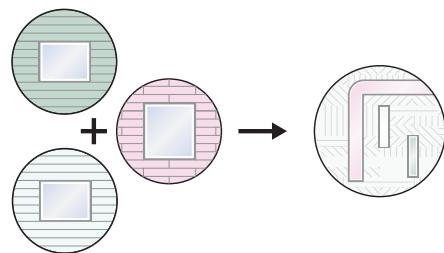
Example: A mid-century glass-style house adjacent to a more traditionalist home provides difficult sources to reconcile, but elements such as the continuity of the roofline, the curves of the chimney in the modern span, and the rectangular window opening on the other side begin to blur some of the differences.

§19.20.190 - 2016 Updates (cont'd)

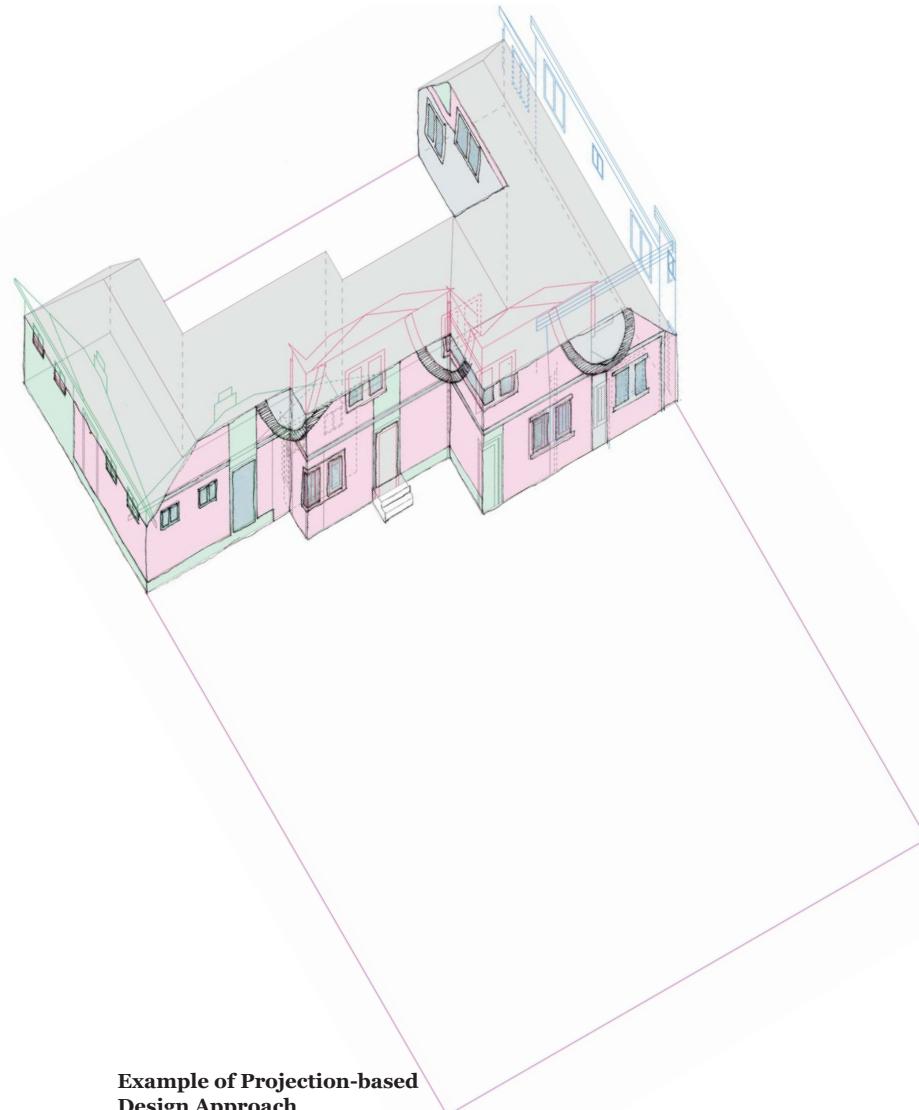
- (c) **Glazing Patterns.** The size, shape, and location of windows on the primary dwelling shall be similarly reconciled in their use in the Secondary Unit. Direct overlay or imitation of the sources' fenestration is not necessarily required, as even in combining existing strategies, an entirely new outcome can be created.



Example: The three sources are quite similar in their fenestration techniques, relying on punched windows through a colorful exterior wall. This reconstitution of the elements interprets the colors into the glazing instead of the wall producing a new effect while still incorporating the three roots.



Example: Here, the sources are also combined into a new geometrical relationship that can unify the overall design while still reflecting the primary sources for each wall or part of a wall.



Example of Projection-based Design Approach

The End

Postlude

This project is meant to be an earnest proposal for revisiting El Cerrito's regulations surrounding Accessory Dwelling Units. It attempts to make a convincing case through policy analysis, precedent and theory discussion, and design proposals at both the architectural and urban scale. By looking at a particular block in El Cerrito, it argues that a more subtle approach to the rules of design and policy could increase the allowable ADUs on the site from 6 to 30. It strives to do so in a way that maintains privacy for new and existing units, while complementing the character of the neighborhood with contemporary design approaches. It challenges planners and architects to keep rethinking the contemporary limitations that are contributing to the Bay Area's exorbitant rents.

However, the thesis is also about the subtle. It seeks to explore and incorporate a delicate complexity that is not easily or immediately perceived at every scale. It would be incomplete if there was not a subtext to this project. The total earnestness and deadpan incorporation of zoning and policy language was, particularly in the final presentations, meant to expose a second reading of the project to those paying close attention.

There is an unabashed critique of both planning and architecture. It hovers somewhere between irony, satire, and sincerity to preserve its subtlety.

Yes, there are critiques of the fields individually. Planning, unlike architecture, seems to shy away from a critical examination of itself in light of the digital or post-digital age. In spite of an abundance of digital tools to increase the specificity of the planning process while projecting a simplified experience, the way planners write and think about rules has not evolved. Architecture, on the other hand, does not shy away from self-evaluation. But it does so only from an extremely limited perspective: from the architect. Architecture, to me, is totally hostile to voices coming from outside the discipline. That is incredibly problematic for a profession that remains to this day disproportionately white and male yet is responsible for designing the urban fabric of a country that is increasingly diverse.

The greater critique, however, is the discomfort and awkwardness that exists at the intersection of the two disciplines. In many schools, they coexist within departments or colleges. However, the fields seem to be drifting so far apart that even finding a language to communicate within them is extremely challenging. Despite being enrolled in a dual-degree program, at a school that purposefully offers such a combination, I found this thesis to be extremely challenging.

possible full build-out using the offset method



The disconnect between the two disciplines was one that I initially tried feverishly to bridge, or overcome, or somehow move past. I struggled to simultaneously address aesthetics and affordability, to speak the esoteric language of theory and the legalese language of policy. I'd like to think that in some small ways at least, I succeeded. But realistically evaluating the course of this project, I must acknowledge that more often than not my project's ambition to straddle both disciplines was met with confused or unconvinced faces. Thankfully, my advisers never gave up on me, assuring me that the disparate pieces were slowly coming closer together.

Benejam

I finally realized, with their help, that the missing keystone in the narrative arch spanning the two fields was a critical lens. I could not shy away from the incorporating into the project challenges I faced in writing and designing my thesis. But I had to do it subtly.

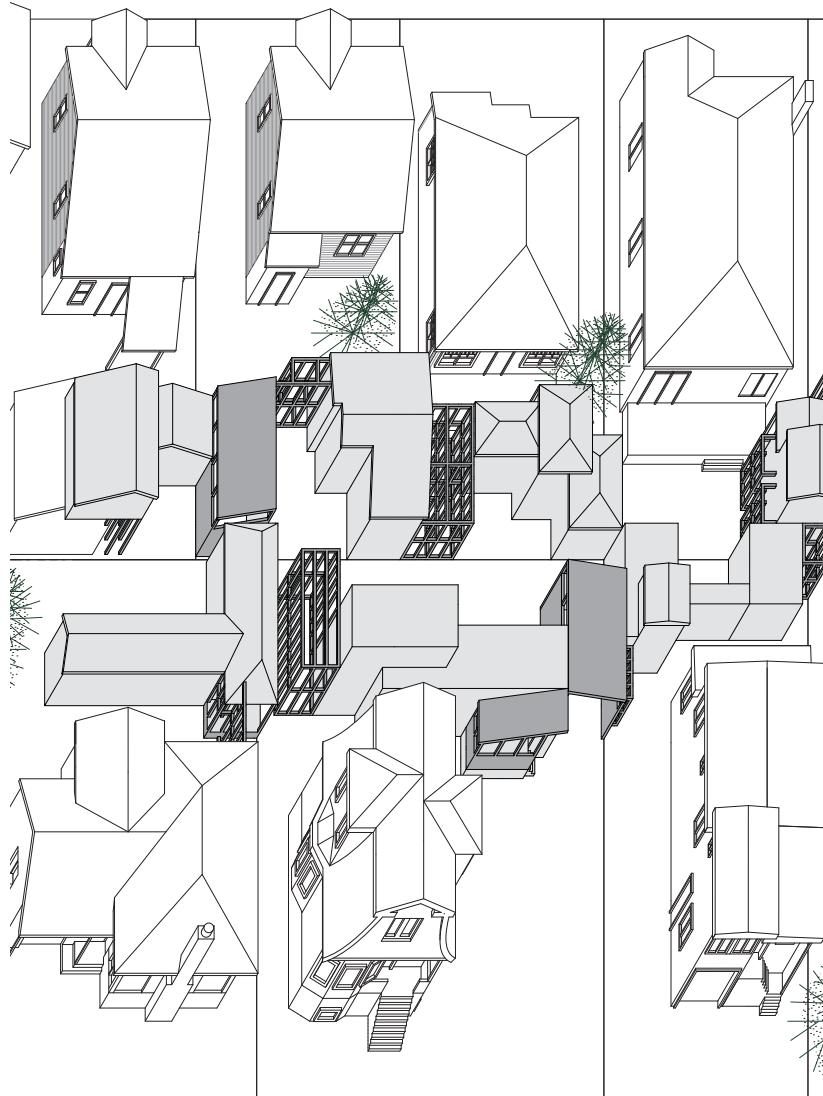
My goal for this thesis was to show the new possibilities when design and policy are thoroughly investigated simultaneously. This century will bring many challenges to the built environment. Changes in density, transportation technology, and climate change will continue to affect the way we live in and perceive our

urban environments. Planners and architects will have to work together to address current and future problems. But solutions generally come from one field, or the other, and rarely from both simultaneously. I commonly hear planners deriding [academic] architecture's pie-in-the-sky approach, where too many real world constraints are ignored. Architects, willing to engage in the intersection of architecture and almost any other field, are for some reason allergic to the thought of rules and policy. It is too boring, or has too many pie charts, or is unproductively restricting. Although I attempted to present my project in the most possible neutral and unbiased manner, I hoped that, for a few people at least, my deadpan delivery would actually serve to highlight some of the absurdity embedded in the project. I may have been too subtle.

Just a few days ago, on May 6th, I presented my project in the architecture thesis final review. I made most of the jurors extremely mad. I think one of them said she was "infuriated." Then, she called me a fascist -or rather, said that she was trying not to but couldn't think of a better word. Another declared that I hated architects and architecture, and I had obviously revealed my bias as a planner in architect's clothing. (I wasn't even wearing all black though!) Another sheepishly asked if this was all a joke, nervous in case she was wrong. She suggested I profess my intentions more boldly, as to better control my narrative. Granted, there were a lot of drawings and text on the wall to digest in a short amount of time. But my incessant mentions of the subtle, or subtlety, or nuance, didn't tip them off. They were outraged that I had channeled my authority as a planner, to control or limit the possibilities of architects. Even though I had purposefully included a critical lens to perhaps shock architects and planners into seeing the disconnect between the fields, I was surprised by their reaction.

Benejam

build-out detail view (actual size is 72" x 36")



At least for that particular jury, the disconnect between planning and architecture was so vast that they did not hear my subtle call for question why the disconnect is there. They only heard me attacking their profession. My earnest half was disappointed they didn't see the big picture. My ironic half, was thrilled that they embodied the very caricature I was criticizing. My full self doesn't really know quite what to think. I and it can only hope that somewhere, someone was silently smirking, aware of exactly what was happening and delighting in the subtlety of it all.

I titled my thesis Dense and Sensibility. They are terms that can describe the built environment: the subtlety and nuance that accessory dwelling units can add to suburban conditions. But they are also terms that can describe people and attitudes. While it is a lighthearted

attempt to inject some subtle humor into the discomfort the thesis broaches, the title also tries to hint at optimistic possibilities. By combining the approaches of both disciplines, practitioners can use subtlety to balance out-of-the-box thinking with real-world constraints. By doing so, envisioned proposals can challenge conventional understandings while still providing credible solutions.

In a speech at Harvard University, John F. Kennedy found the university setting an appropriate place to proclaim that "if more politicians knew poetry, and more poets knew politics, I am convinced the world would be a little better place in which to live."¹²¹ I think the same is true of architects and planners, of design and policy. Here again, the university setting may be just the place to start.

street elevation detail view



Benejam

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