

From Ranch House to Cottage

In Palo Alto, a remodeled house strives for the architectural sweet spot between frugal and unaffordable

BY LANCE JOHNSON

Our design/build firm does most of its work in the part of northern California known as the mid-peninsula. This area is south of San Francisco, where the high-tech explosion has heaped much prosperity and, along with it, a building boom of awesome proportions. Unfortunately, the boom is the architectural equivalent of woodland clear-cutting. Older homes have been razed, their lots stripped to bare earth, and bloated new houses have risen in their place.

Not surprisingly, local residents no longer view kindly the prospect of new construction in their neighborhoods. Instead, it has come to foreshadow a threat to their quality of life. The outcry of neighborhood associations, in a backlash against what has come to be known as *mansionizing*, has been deafening. As a result, planning departments have been charged with the task of enforcing a kind of architectural conscience. Building officials

now regulate lot-coverage ratios, structural massing, even architectural style.

Within this tense environment, designers and builders must heed multiple masters. We must respect the ambitions of the clients, the building department, the planners and now the neighborhood associations. Our role is part designer, part builder and part spin doctor. Against this backdrop, our remodeling story begins.

Let's do it once, do it well, do it never again

With two small children and another in the wings, Jay and Laura Furlong found themselves in a rapidly shrinking house. It was on a corner lot, two blocks from the local high school, in a neighborhood of young families (photo below). Balls, hoops, strollers, bikes and scooters abound. The location suited them. Most of the houses occupy smallish lots sited close to the street. The home styles



The not-so-rare ranch burger. This '40s ranch house was in the right neighborhood, but not quite large enough for a growing family. Photo taken at A on floor plan.



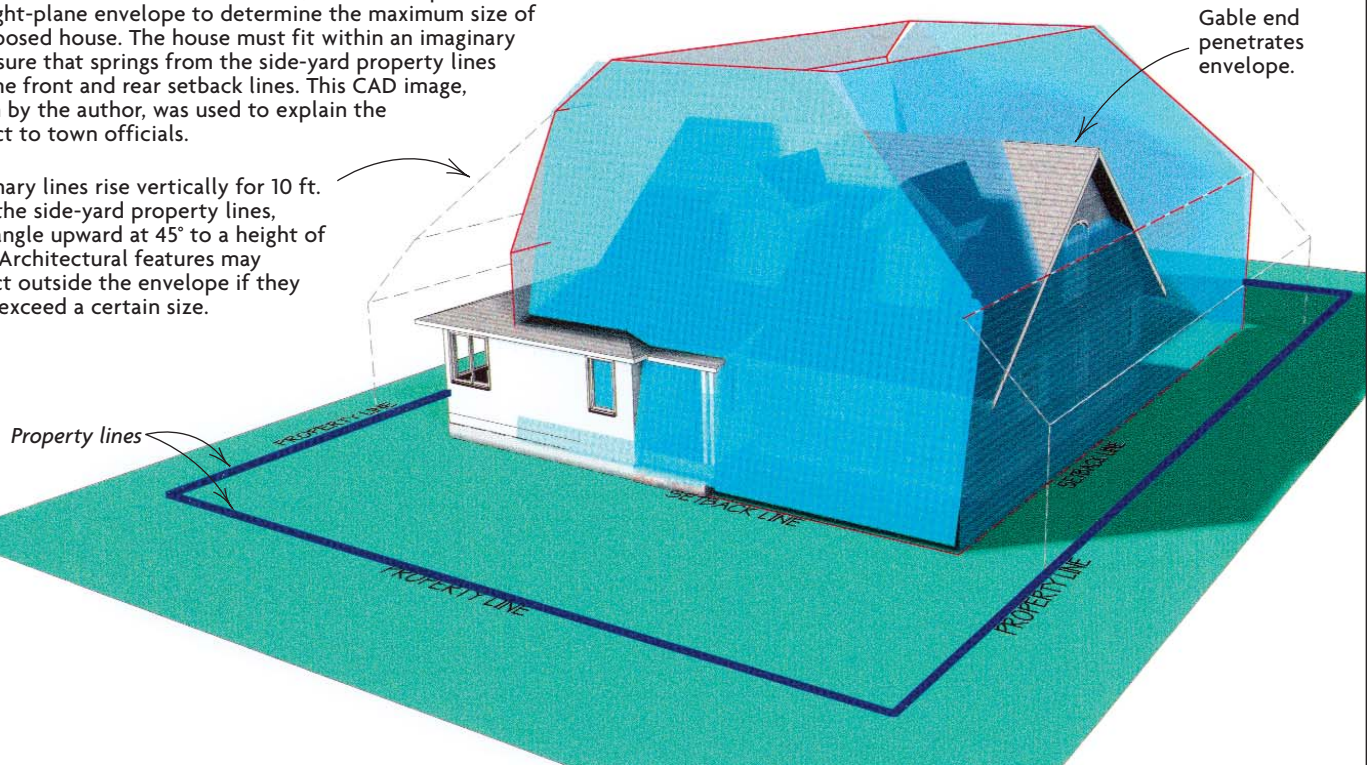


Growing up and fitting in. Reborn as a two-story cottage, the house presents a friendly facade to the street. Photo taken at A on floor plan.

THE LIGHT-PLANE ENVELOPE

City planners in Palo Alto, California, use a concept called the light-plane envelope to determine the maximum size of a proposed house. The house must fit within an imaginary enclosure that springs from the side-yard property lines and the front and rear setback lines. This CAD image, drawn by the author, was used to explain the project to town officials.

Imaginary lines rise vertically for 10 ft. from the side-yard property lines, then angle upward at 45° to a height of 30 ft. Architectural features may project outside the envelope if they don't exceed a certain size.



Upstairs bedrooms boast window seats. Bringing the skylights closer to the eaves positioned them where they can serve as roofs for window seats carved into the unused attic space. Photo taken at B on floor plan.

are diverse and are one or two stories tall. The Furlong house, like its neighbors, was built in the '40s, with a low-pitch roof and a California ranch profile.

The Furlongs needed to expand their two-bedroom home by at least one additional bedroom—two would be even better. But in doing so, they didn't want to engulf the backyard. Furthermore, Jay and Laura wanted the project to give the house some character without overwhelming or detracting from their neighborhood.

The house was already against the setback lines, so new construction would need to be centered toward the core of the lot. Because saving the backyard was a high priority and because zoning law ruled that the house already covered about as much of the lot as allowed, we had our work cut out for us.

Pushed by the wish list and constrained by zoning limits, I spun off a series of plans. To keep the budget down, we looked at various single-story solutions and the spaces they might contain. We examined expanded ranches, cathedral ceilings, Dutch hips and hybrid gables. Each one-story scheme yielded an attractive great room for the center of the house, but no additional bedrooms.

There was nowhere to go but up, so the Furlongs raised both the financial ceiling for

the project as well as the ridgeline to enable a second story. And as they did, a shape emerged that Laura, Jay and their girls instantly recognized as their new home (photo p. 79).

Throughout this crucial embryonic stage in the project, the Furlongs beat a familiar drum: We want to do this right the first time and be done with it.

Pushing the 'light-plane envelope'

The city of Palo Alto exerts control over the size of houses with a concept called a "light-plane envelope." In a nutshell, the envelope draws an imaginary bubble over the lot 30 ft. high defining the boundaries of the house. The goal is to preserve everybody's share of sunlight and views, and the system has some give and take. If a portion of the house protrudes beyond the bubble in one place, it has to pull back in another place.

At the outset, we had a couple of hurdles to overcome. We were sure to violate the street-side setbacks with even a modest extension of the master bedroom. That would require a special appeal to the planning board. Structurally, the new second story would need to be supported by a building not currently designed to handle the forces and loads inherent in a two-story structure.

GREAT IDEA: FREE SPACE

Here in the densely populated Bay Area, the towns have tough zoning laws. If you've maxxed out the lot coverage, chances are good that you won't be able to gain any more floor space by bumping out a wall. But in



Sometimes you can build in the setback. This 2-ft. deep bay window was approved by the building department because it doesn't count as floor space. Photo taken at C on floor plan.

many of these same jurisdictions, bays that do not add floor area and that extend 2 ft. or less beyond the exterior wall plane are exempted from square-footage calculations. Thus, sitting bays offer expansion possibilities for zoning-tight projects.

For example, the Furlong daughters have a ground-floor play area off the family/dining room (photo right). The play area's sitting bay, with its wash of natural light, amounts to a major expansion in both feel and function. The bay is 2 ft. deep by 5 ft. wide. It is supported by angled brackets off the wall, which we wrapped in an envelope of stucco-coated ogee-shaped architectural foam (photo left).

—L. J.



Window seats expand a little room. Alcoves such as this one with throw cushions and lowered ceilings are sanctuary to the reader, dreamer and sunbathing cat in all of us. Photo taken at D on floor plan.

And aesthetically, the new roofline somehow would need to complement the lines of the home's existing street-side hip roofs, which we couldn't alter, while fitting within the mandated light-plane envelope.

Using my CAD program, VectorWorks' Architect module (Nemetschek; 888-646-4223), I massaged the form of the structure just to kiss the limits of the city's light-plane envelope (drawing facing page). The criteria guiding the design were as follows:

- The area of the proposed second floor having 5-ft. or greater headroom (the criteria for usable living space) could equal but not exceed 520 sq. ft.
- The gable-end penetration of the light plane equaled 15 ft. or less (to meet the definition of an acceptable architectural feature).
- Because of the gable-end penetration, the ridge height would be limited to 24 ft.

After many hours of 3-D modeling, an optimum form for the structure grudgingly emerged on my computer monitor. We had liftoff. Our street-side setback issues for the master-bedroom extension were settled with a type of mini-variance process known locally as a home-improvement exception. This variance involves a public hearing, but the process is fast-tracked, which around here means 2½ months. Knowing this exercise is

equal parts architecture and public relations, I prepared several renderings for Laura to present to her neighbors to ease any mansionizing fears and to generate a bit of positive neighborhood spin.

Meanwhile, I met with the planning folks, making certain that the spirit of our proposal was aligned with their goals. A happy by-product of these early meetings was their offer to look favorably on a front porch, even though it would overextend our basic lot-coverage ratio. In this manner, Palo Alto's planners suggested what I count as one of the best features of this home: its front porch. Our application was approved with no dissenting opinion.

The reconfigured house keeps the downstairs spaces in their original locations, but they've grown to meet the needs of a larger family (floor plans, p. 82). An expanded kitchen overlooks the dining and sitting area in the great room (photo p. 83). Upstairs, two new bedrooms and a bath provide the needed spaces that launched the project in the first place (photo facing page).

Upstairs bedrooms perch on enormous beams

Concurrent with this planning effort, the engineer and I were studying ways of sup-

porting the new second story without turning the downstairs into a maze of posts and bearing walls. We settled on a pair of 35-ft. 5⅛-in. by 25½-in. glulam beams that weigh close to 1½ tons each. The beams are buried in the family/dining-room ceiling, under the north/south walls of the addition. No footing or bearing wall in the existing house could carry the load of these beams, so we beefed up the original foundation in strategic places and poured new footings in others to form a solid structural base. This work alone swallowed 16 cu. yd. of concrete under the old structure.

In addition to the foundation work, we needed to strengthen the frame of the old house. We stripped it down to its underwear and resheathed all the exterior walls with plywood. Our beams were brought to the site and gingerly winched into place. Finally, the new roof was raised above the old wall plates, and walls were set between the new rafters and the beams.

The curse of the design/build approach

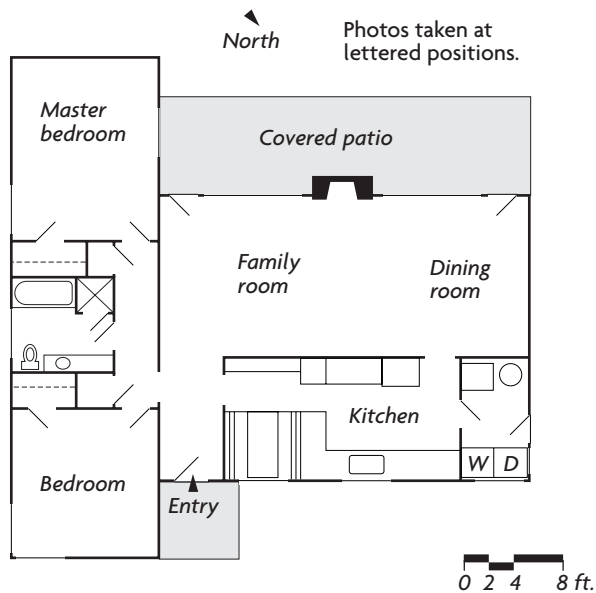
To me, being able to refine a project in mid-stream is one of the real advantages to working with a company responsible for both design and construction. But against the

EXPANDING A RANCH HOUSE FOR A GROWING FAMILY

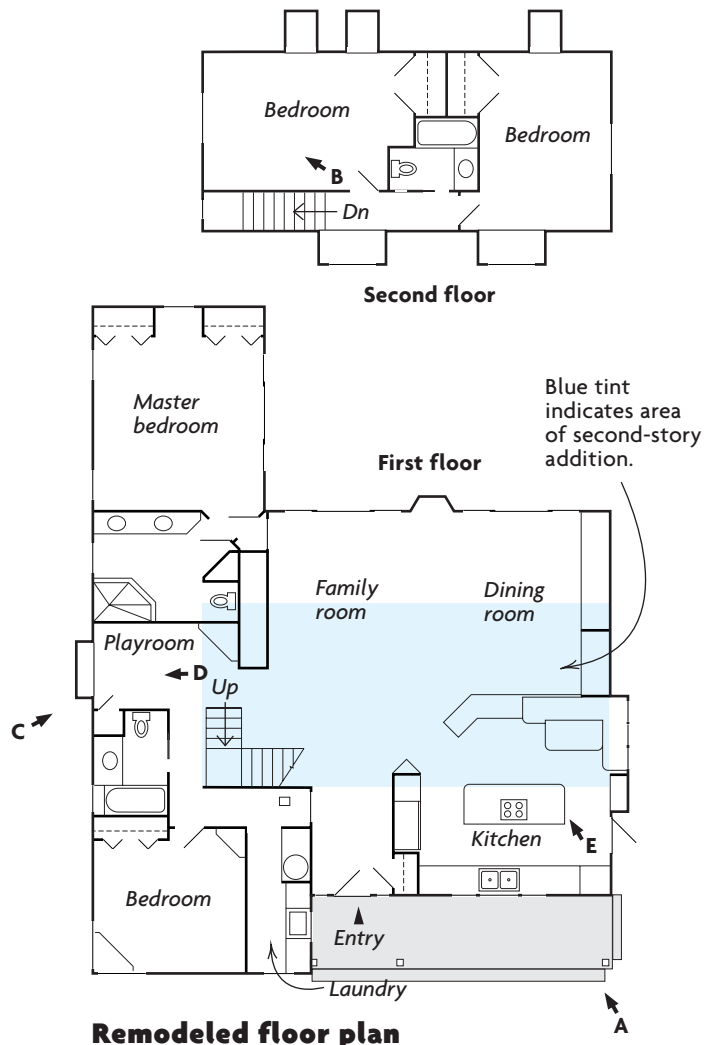
With only two bedrooms and a small lot, this house needed to grow vertically to gain two necessary bedrooms. While they were at it, the owners decided to enlarge the kitchen to include a built-in seating alcove and to squeeze a playroom into the space formerly occupied by the bath.

SPECS

Bedrooms: 4 **Bathrooms:** 3 **Size:** 2395 sq. ft.
Cost: \$192 per sq. ft. **Completed:** 2000
Location: Palo Alto, California **Designer:** Lance Johnson
Builder: Alden House



Original floor plan



Remodeled floor plan

often-tantalizing benefits promised by mid-stream changes, I try to weigh the costs carefully: the hit to my client's budget, the impact on my current and downstream construction schedules and, not incidentally, the impact on the crew's morale.

That said, I must admit that several opportunities for improvements to this project emerged as we went along. For example, we decided to detail the two-story gable end (photo p. 79) with a combination porch roof and bay window. This improvement gave much-needed relief to what would have been an unbroken expanse of stucco. When it came time to choose a roof, the Furlongs opted for one that would last a lifetime: a mix of Spanish and Chinese slate. Doing so meant upgrading the flashing material from galvanized steel to copper.

Inside, the heating system was changed from forced-air heat to radiant floors, with a

new water heater providing both the domestic water and the space heat. The floors were changed from oak to cherry. In each case, these changes were made before any of the plumbing was installed or any of the flooring was nailed down. I doubt that the project would have been as successful if these changes had not been explored and implemented. And I'm also sure I'll regret having said that.

The math, and the aftermath

The house started out at 1300 sq. ft., and we increased it to 2395 sq. ft. The house is still modest in size, but large enough to accommodate this young family until their daughters are through their high-school years.

In some cases, we laid claim to small amounts of space that had an outside effect on the surrounding rooms. The skylight bays upstairs are one example (photo p. 80). And

the sitting alcove in the downstairs playroom shows how even a small bump-out can affect the perceived floor space ("Great Idea," photos, p. 81).

A month or so after the project was completed, the Furlongs were hosts of a lavish block party to celebrate their new home and to recognize the considerable patience and support that their neighborhood had shown. Amid a catered lunch and an inflated fun house, the neighbors trickled into and out of the Furlongs' new home. Lurking on the edge of the group, I could hear the accolades and praise that a new home often elicits. But there was another frequent comment from the Furlongs' neighbors that I value even more: "Thanks." □

Lance Johnson is a principal with Alden House, a design/build firm based in San Mateo, California. Photos by Charles Miller, except where noted.

Cabinets and counters instead of walls. A granite-topped cabinet merges with a bench in the kitchen, drawing a boundary between the dining and sitting areas without shutting them off from view. Photo taken at E on floor plan.

