Raise High the Bungalow

An architect adds a new first floor under his house to gain space and better views of Puget Sound

BY FRANK KARREMAN

Houses are built to stay in one place. This story is about a house that couldn't stay still. Built on one site, the house was uprooted and rolled to a barge that floated it to its new location; we bought the house and made it move again, this time straight up in the air. I'm pretty sure its roaming days are now over.

My wife and I were house-hunting on Bainbridge Island, which lies across Puget Sound from Seattle, when we discovered the house. It was a shabby rental (photo below) that needed extensive work, but we fell in love with the site, a former berry field that gently sloped down to the tidal flats of Eagle Harbor. We bought the house and renovated it into a single-family home.

After a few years, though, we needed more space. Physical constraints such as utilities and the driveway limited our options for lateral expansion. We thought about demolishing the old house and starting anew, but intimate interior spaces and the original expansive windows made it worth keeping. Ultimately, we hit upon the idea to raise the house, creating something like the Italian *piano nobile*, in which main living spaces are one story above ground level (photo right). This way, we could add family spaces below and get better views of the shoreline from the elevated portions.

Preparing the house for liftoff

Lifting the house was relatively simple and was accomplished in a couple of days by



"Ultimately, we hit upon the idea to raise the house ...





When the author bought it, the house was neglected and had begun to show its age. However, by adding another level below (photo right), he was able to retain the house's charm. Photos taken at A on floor plan.

Photos this page: Frank Karreman



... we could add family spaces below and get better views of the shoreline ..."

Photo this page: Steve Keating

Monroe Housemoving Company, a local business. Our contractor, Greg Barron of Seahome Services, didn't have to reinforce the structure prior to the lift, but he did tear away anything not coming along for the ride, such as the shed addition at the rear of the house.

Next, Monroe's crew cut away the rim joists and a portion of the block stem wall on the short sides of the house to create a space for two wide-flange steel beams that were used to raise the house. The old-growth fir 2x6 floor framing was strong enough to support the entire house as it balanced on the beams.

As hydraulic jacks lifted the house, the crew added 6x8 cribbing beneath, until the house was at the proper height of 8 ft. above grade (photo bottom right, p. 86). I did check with my insurance agent prior to the project and, remarkably, was assured that the house was still covered by the homeowner's policy during construction. We didn't have to test the coverage: There was no broken glass, cracked walls or damage of any kind in the structure as a result of the lift.

New foundation addresses seismic and drainage concerns

Once the house was up in the air, Barron's crew stripped off the block foundation's top



A NEW GROUND FLOOR AND A LITTLE MORE

Remodeling the original house, the author increased the size not only by adding a first floor below the two existing levels but also by adding a small, 10-ft. deep section on the back of the second floor. One bedroom became two; a downsized nursery became a dressing room and opened up space for an enlarged stairwell. The new ground-level entry now opens up into a two-story entry hall.

SPECS

Bedrooms: 4

Bathrooms: 3½

Size: 2800 sq. ft.

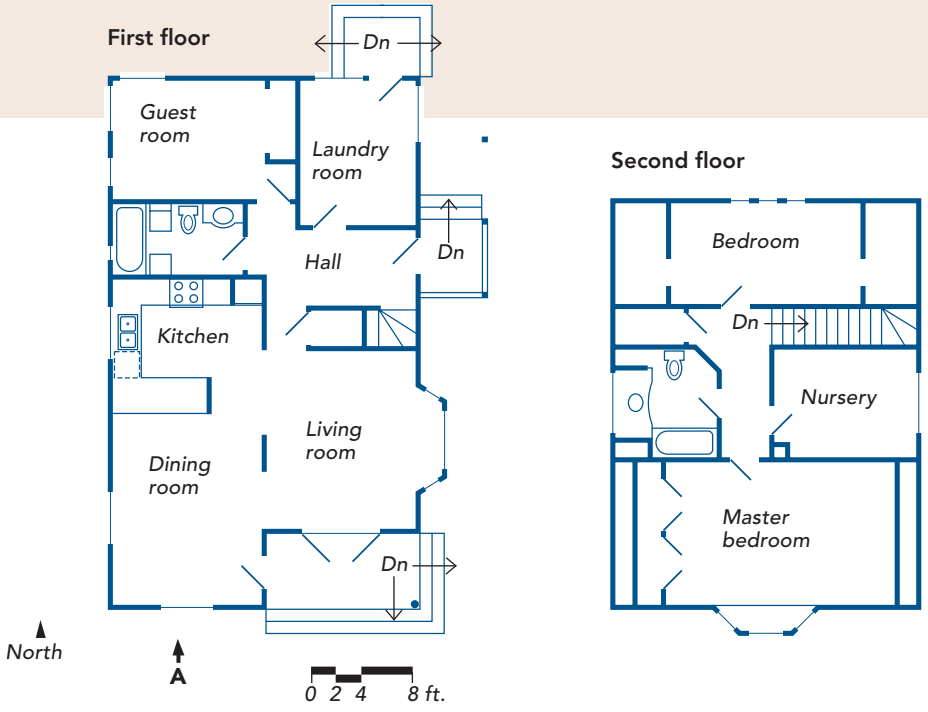
Cost: $100 sq. ft. (renovation)

Completed: 2000

Location: Bainbridge Island, WA

Architect: G. Frank Karreman + Associates

Builder: Seahome Services



FLOOR PLANS BEFORE

Drawings: Ron Carboni

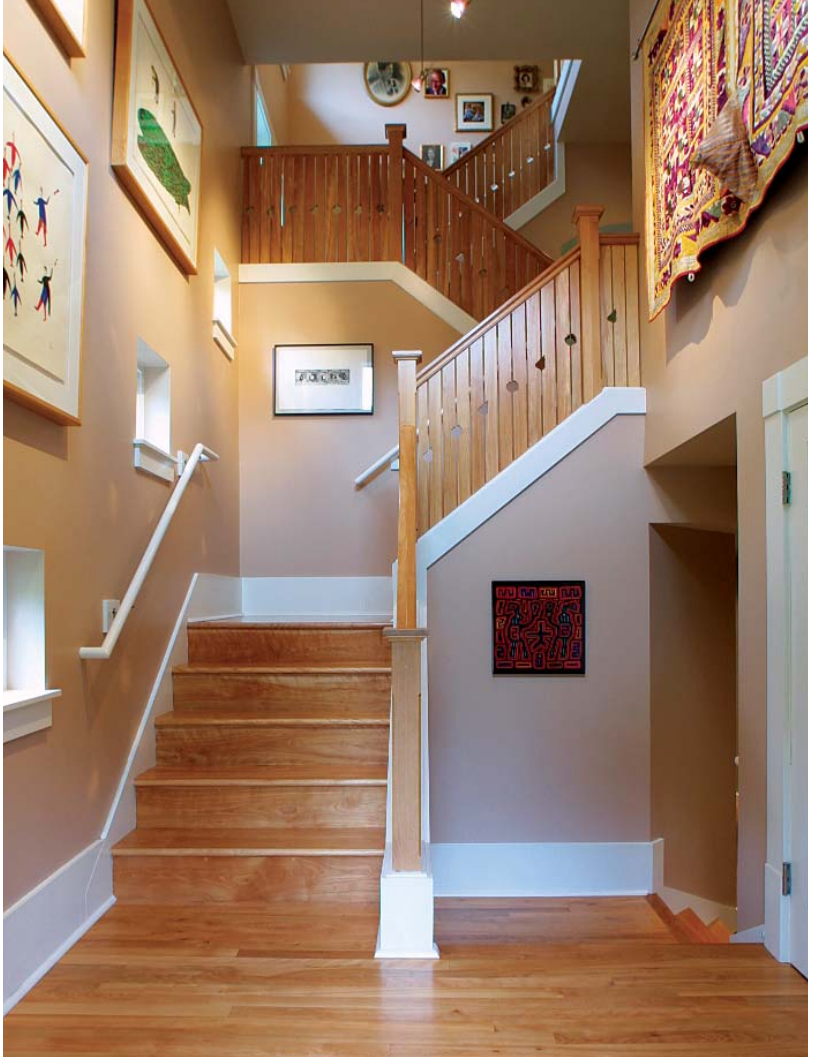


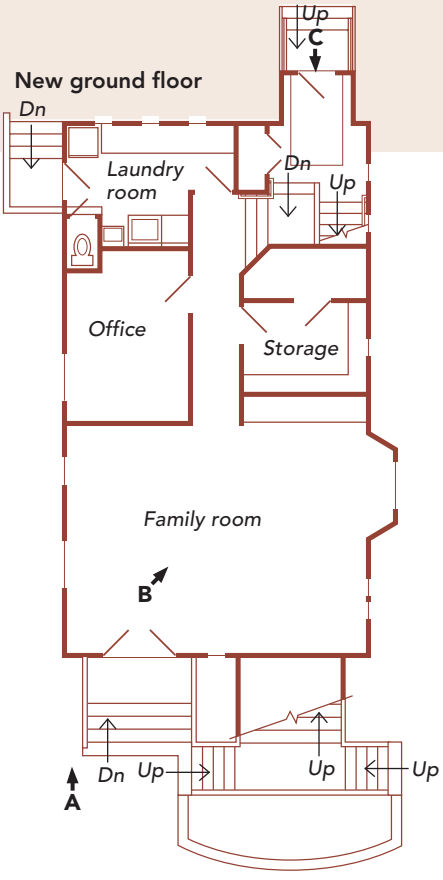
Family room gets a workout. *The ground level is devoted to family spaces: office, laundry, storage and the popular family room. Photo left taken at B on floor plan.*

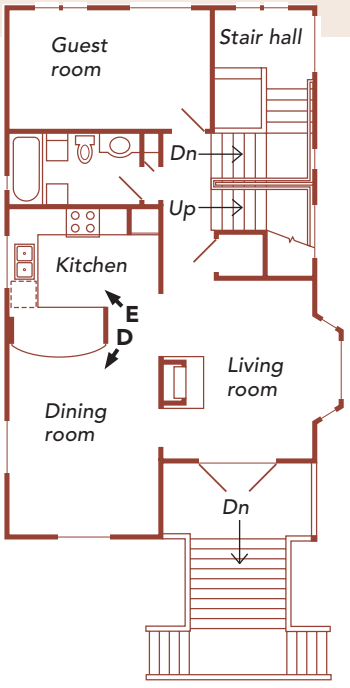
New stairs. *A major detail of the remodel, the staircase creates a wide-open, inviting art gallery as it passes to the upper floors. Photo right taken at C on floor plan.*

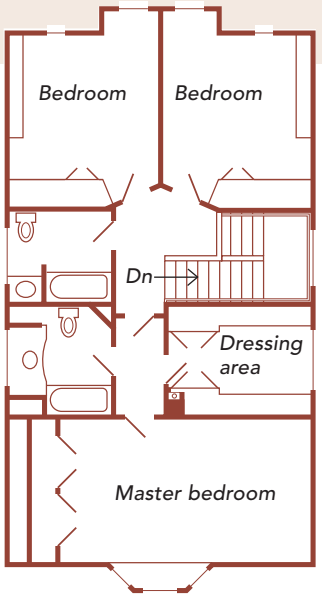
Built-ins light the dining room. *Custom cabinets provide storage and intimate light from low-voltage fixtures hidden behind the face frames. Photo below taken at D on floor plan.*











FLOOR PLANS AFTER

course for better access, grouted the cells around the existing rebar and laid a new, steel-reinforced bond beam course to help distribute the loads.

I had nightmares of water trickling into the former crawlspace during the winter, along the baseboard and across the new floor. Consequently, before the new basement slab was poured, the crew ran 4-in. perforated PVC pipe on 6-ft. centers below the slab to pick up any of the moisture that was seeping up from below. The pipe was connected to the downspout drainpipes, which slope to daylight in a swale in the garden.

The crew also applied some sheets of dampproofing membrane along the exterior of the foundation. Outside the footing, a perimeter trench filled with pea gravel drains to a perforated footing drain. So far, the foundation walls and the slab have remained dry, and I sleep soundly.

After they poured a second slab with some tubing for radiant heating placed in between, the crew framed the 2x6 walls between the foundation and the joists of the former first floor. Engineered shear walls and tie-downs brought the new structure into compliance with seismic building codes.

Two wide-flange steel beams were installed to carry the existing 2x6 floor joists over the expanse of the family room (photo p. 88). Wherever the new construction required it, we matched the existing floor depth with paired 2x6s.

Keeping the style intact while expanding the spaces

Once the house was refastened to the ground, we were able to complete the renovation. I wanted the house's exterior to retain its rectangular gabled shape, but I knew that we needed more room. To add that extra space, I doubled the size of the two existing hipped dormers. A new two-story, 10-ft. deep addition on the north side of the house created the front entry hall, the guest room and the children's rooms on the second story of the house. A small window bay that is located on the second floor added a bit more space to the children's bedrooms.

To link the new basement with the upper floors, I designed a switchback stair and hall in the northeast corner of the house that replaced the original dark and narrow staircase. The entry hall (photo right, p. 89) of the house is actually an enlarged landing of the stair system. Dayle Matz of Annendale Woodworking in Port Townsend, Washington, built the stair railing. Matz cut fruit profiles, which relate to the orchard outside, into the birch balusters of the staircase. The stairway also has become a space where we can display artwork.



Thin concrete + morning coffee = a lightweight countertop alternative

When I started to redesign the kitchen (photo facing page) in our house, I was keen on having concrete countertops. However, I was equally keen on not having to reinforce the floor joists to support the weight of a concrete slab. I heard about a cement product called Overlay, made by L. M. Scofield Co. (www.scofield.com; 800-800-9900), that's typically used to re-cover floors. A bag of Overlay that covers 12½ sq. ft. at a ½-in. depth costs about $50. I figured that I'd give it try.

First, I stripped the laminate from the old countertops and installed a layer of expanded metal lath to prevent any cracking. Nails that were driven to a ¼-in. height served as stand-offs to position the mesh roughly in the middle of the pour. A builder friend, Gary Bonzon, ripped a piece of 2-in. dia. PVC pipe into thirds and used them as forms for the bullnose edge, supported by plywood backing that is attached to the underside of the counter (photo left).

After mixing an entire batch of Overlay, I first packed it into the PVC edge form, then spread it over the counter, aiming for a ½-in. thickness overall. Because my cabinets weren't as level as I



Before the pour. *Prep for the thin concrete layer includes metal lath and PVC tubing forms.*

Kitchen gets a face-lift, in spite of a tight budget

Adding a floor to the house gobbled up a good portion of the renovation money, but we still needed to improve the kitchen. So instead

Inset photo: Frank Karreman



would have liked, the mix evened out itself in a thickness that varied from ⅜ in. to 1 in.

At first, I stained the raw concrete with commercial products, but the result looked muddy. As an experiment, I rubbed some of my morning coffee into the surface and really liked the look, so I added several additional coats. The final result (photos right and above) looks and feels the same as a 2-in. thick concrete slab, yet it requires no additional structural support for its weight. I sealed the stain with a water-based floor sealer, also from Scofield.

—*F. K.*



New surfaces warm up the kitchen. *Keeping the layout and cabinets the same, the author ordered new birch cabinet doors and resurfaced the counters with coffee-colored concrete. Photo taken at E on floor plan.*

of replacing the existing kitchen, we kept the layout intact and replaced the old cabinet doors with doors made of red birch to match the new floor (photo above).

Avoiding the expense of a new one, I refurbished the countertop with Overlay, a cement product made by L. M. Scofield Co. (www.scofield.com; 800-800-9900) that's typically used for floors (sidebar facing page). The new counter surface looks like a full slab of stained concrete yet requires no additional structural support for its weight.

Now distinctly sedentary, the house recycles the prior building into a new home and combines contemporary living spaces with a traditional look and detail. As with all master plans, there is always another phase proposed for the future, but it includes only an outdoor sculpture garden and flowering rockeries. The house will stay where it is. □

Frank Karreman is an architect on Bainbridge Island, Washington. Photos by Charles Bickford, except where noted.