

A Hillside Cabin's Unlikely Addition



A three-story tower solves steep site problems by bringing the house to the cars

BY PARKER PLATT

My little corner of western North Carolina, Transylvania County, is known as the land of waterfalls. Most people here dream of a house with a waterfall view. Susan and Fain were no exception. They bought a creek-side cabin and promised a few of us from our architecture firm a fried-chicken lunch if we would visit for a consultation. The bait worked. When we laid eyes on the tiny getaway cabin, we were hooked. Clinging to the side of a mountain and surrounded by decks, walks, bridges, and stone walls, this cabin both charmed and sobered us. Steep topography made the Appalachian-waterfall dream house a serious design and building challenge.

Inventory the good and bad features

Our firm does 10 to 12 projects every year; 90% of them are new houses. Whether we're looking at a new site, a renovation, or an addition, our first step is always the same: Identify the good qualities, and protect them as much as possible. We prefer to add only what is needed, and try to do that in a way to complement the original qualities. Conversely, we disrupt as little as possible.

Susan and Fain's cabin had living, dining, and kitchen space; two small bedrooms; and one bathroom all packed into one level. The real amenity was the house's assortment of decks, bridges, walks, and stonework. All these qualities worked together to make a charming weekend-getaway cabin focused on outdoor living.

For comfortable year-round family living, though, the cabin's limitations began with space issues; there wasn't enough room. Ceilings were low, rooms were small and chopped up, and interior spaces were dark, with no

A great site deserves a great house. The original cabin (top photo) had extensive decks and stonework, but also a couple of drawbacks. Going from the car to the kitchen demanded a 90-ft. trek, and waterfall views were non-existent. A tower solution improved access to the house and exploited the potential for dramatic views. Photo left taken at A on floor plan; photo above taken at B.

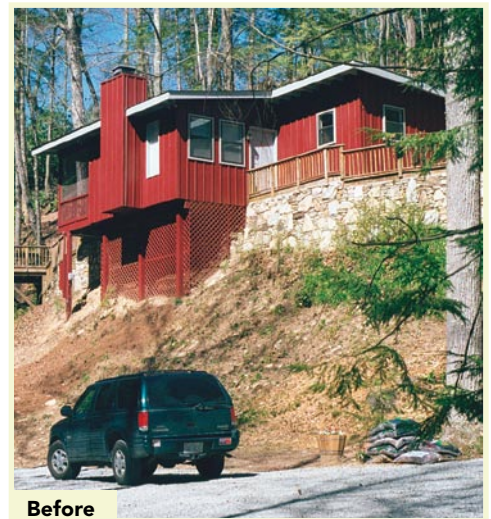
Vertical plan has plenty of rooms with a view

Although its footprint is compact, this tower provides ample room for a master suite on each of the two lower floors. Oversize stair landings add enough space for an office and a reading nook. The third floor has an open plan, allowing rooms to spill over as needed while providing a nicely framed view from almost anywhere.

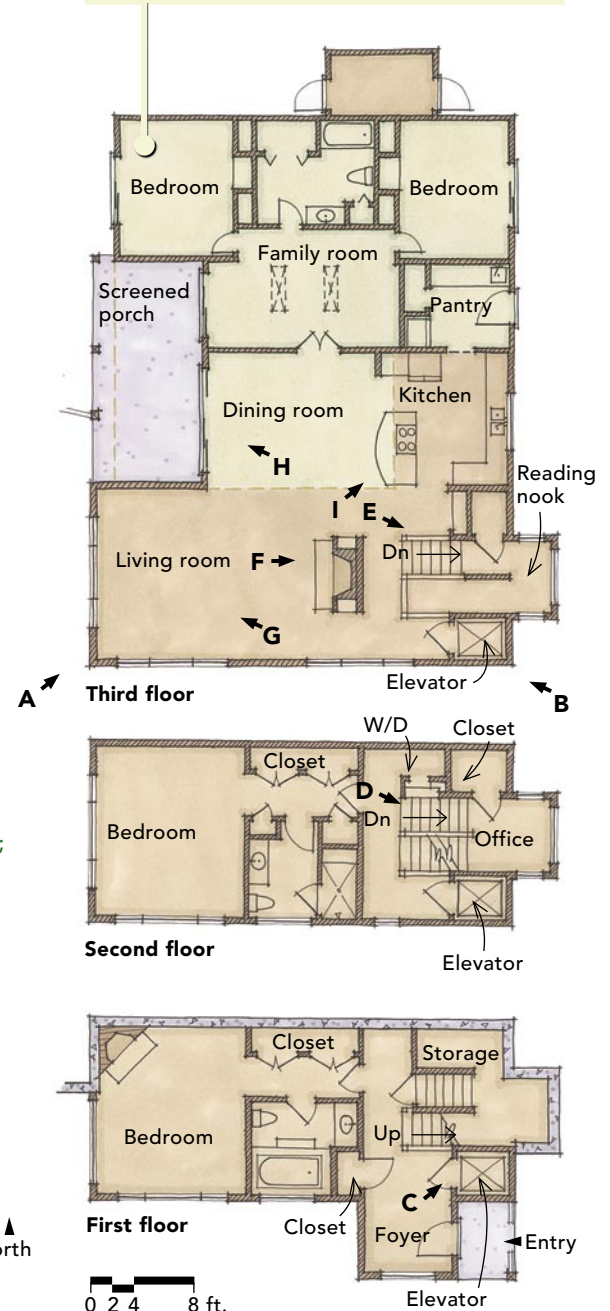
SPECS

- Bedrooms:** 4
- Bathrooms:** 3
- Size:** 940 sq. ft. (existing); 2113 sq. ft. added; 3053 sq. ft. total
- Cost:** N/A
- Completed:** 2002
- Location:** Brevard, N.C.
- Architect:** Platt Architecture
- Builder:** Bronco Construction

Photos taken at lettered positions.



Before
The original cabin consisted of a single level.



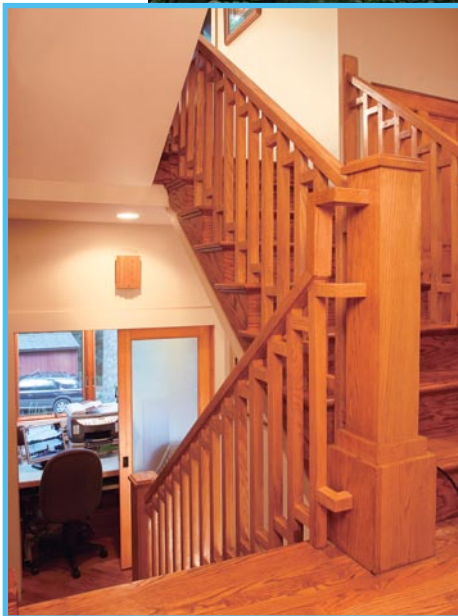
Steep topography such as this presents a serious design and building challenge.

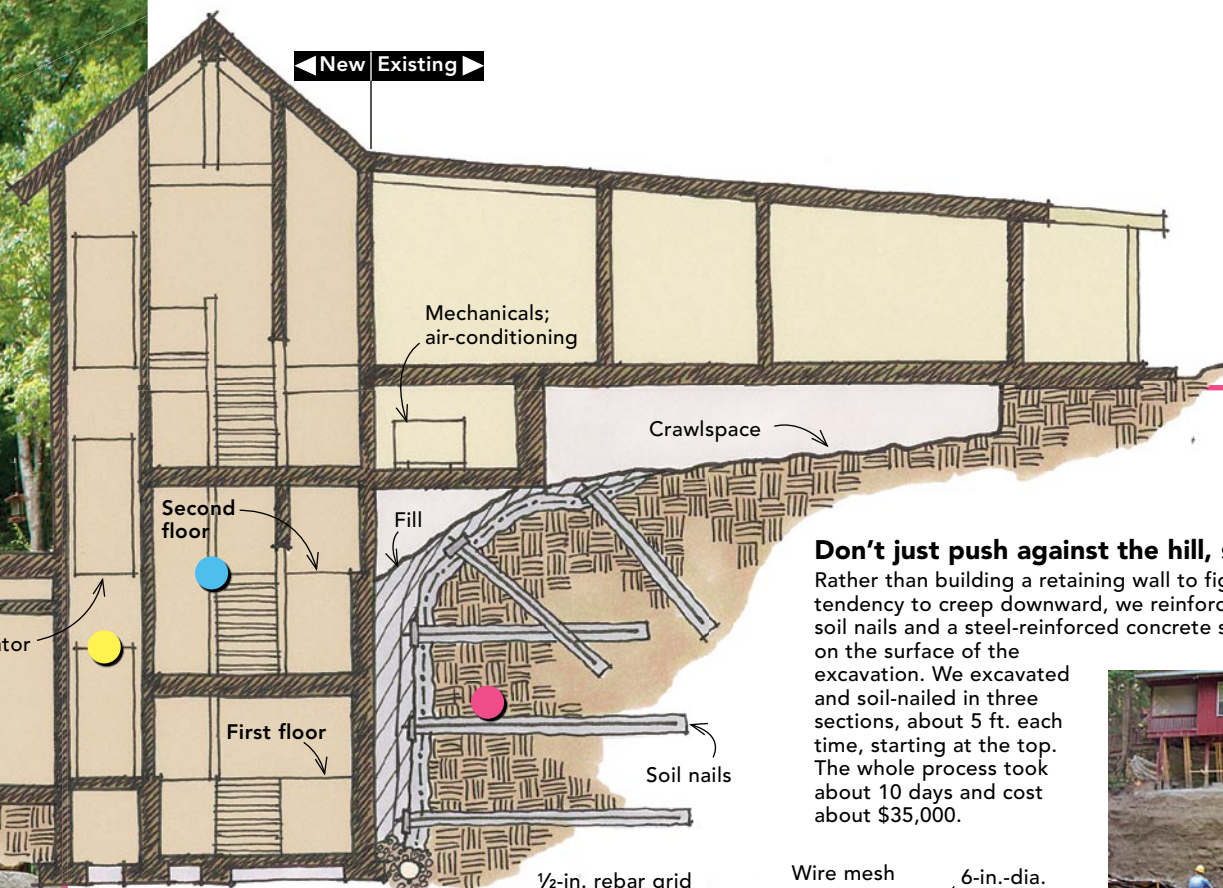


So convenient, even the dog rides it. A residential elevator makes a three-story trek with groceries or furniture manageable. The stained-glass pine tree looked enough like an arrow to warrant widening this salvaged door to fit the opening. Photo taken at C on floor plan.



The stairs are a destination, too. By deepening the stair landings a few feet, we gained a small but useful area between floors. The addition contains two such spaces. One serves as an office; the other is a reading nook. Inset photos taken at D and E respectively on floor plan. (Photo right taken at B.)





Don't just push against the hill, stabilize it

Rather than building a retaining wall to fight the hill's tendency to creep downward, we reinforced it with soil nails and a steel-reinforced concrete shell sprayed on the surface of the excavation. We excavated and soil-nailed in three sections, about 5 ft. each time, starting at the top. The whole process took about 10 days and cost about \$35,000.



Tightened nuts embed an 8-in. steel plate into freshly sprayed concrete. More concrete is sprayed on to cover the hardware.

Six-inch-deep 5000-psi concrete is extremely strong and water resistant.

1/2-in. rebar grid (4-in. by 4-in. sections)

Wire mesh

6-in.-dia. hole

20 ft.

1/2-in. threaded rebar

Cement grout (portland cement, sand, and water)

impressive views of the waterfall. None. Finally, accessibility was terrible: The cabin was a 90-ft. walk and a 25-ft. climb from the parking area.

Bring the cabin to the cars

When building on steep slopes in the mountains, it is often best to think about the car first. You have to get the homeowners' and guests' cars off the road, with sufficient room to park, turn around, and get back on the road. All over the mountains, there are houses that people don't like to visit after dark because the driveway and parking area present difficult or even dangerous challenges. You don't want to have a dinner party and find your guests rushing off before dark so that they can navigate the drive confidently. Basically, a typical house requires parking and a turnaround area with a relatively level 40-ft.-

dia. circle. Creating this area on a 20% slope requires good grading, drainage planning, and engineered retaining walls.

The cabin as we found it had workable parking. The journey from the car to the front door, however, was anything but. This winding route up scores of steps and all the way around the house made the homeowners dread returning from the grocery store.

It was clear that we couldn't get the cars up to the front door, so our solution was to connect the cabin to the parking area with a tower addition. The lowest level of the addition contains a new main entry adjacent to the parking area. Stairs and a small elevator provide comfortable conveyance to the two upper floors of the house.

In designing new houses, we frequently stack oversize closets with removable floors to allow future installation

When framing a view with windows, always be sure that you can see the sky.



One room, two focal points. Smart window placement in the living room frames waterfall and sky, while on the opposite side of the room, a fireplace is the heart of a cozy sitting area. The stone fireplace surround complements the mountainside views. Photo above taken at F on floor plan; photo right taken at G.



of an elevator as the homeowners grow older. In this project, installing an elevator right away made sense.

New levels with landings

The new entry level also contains a generous bedroom suite, the second level is a similar bedroom suite, and the third (main) level, which opens into the old cabin, has a new living room and fireplace. The original living room was enlarged to accommodate dining space and a new kitchen. The original dining room became a separate family room off the original bedrooms, and the original kitchen became the pantry (floor plans p. 75).

We enhanced the stairs' interest and utility by adding 4 ft. of depth to the landings, converting them to usable spaces. On the first landing, we created a small office that can be closed off with pocket doors when it isn't being used. The second landing doubles as an intimate reading nook a few steps down from the main gathering space. By incorporating the landings, we created two additional rooms in about 60 sq. ft. of additional floor space (bottom photos, p. 76).

Keep the sky in view

Transylvania County receives more annual rainfall than the famously wet Pacific Northwest, and we get the bulk of it in spring and summer. This dampness makes for a lush, beautiful environment covered with dense hardwoods, rhododendron, and mountain laurel among the waterfalls, but it also makes for overcast conditions that can leave us longing for sunlight. Combining those weather conditions with a shady site makes sunlight even more precious.

It was important to focus on big windows that would allow a large amount of natural light into the house. Fortunately, the cabin's last major shortcoming—no view—was related directly to too few windows. The big windows we planned for daylight could improve the views; we just needed to be sure that they were the right size and in the right locations.

When designing on a site with a great view, capturing the whole view is important. Mountain vistas are often distant and horizontal, requiring wide expanses of glass. In this house, though, the view isn't distant and horizontal but close up and vertical. With this type of view, not blocking the lower portion with decks or railings and opening the top to the waterfall and the sky were important. When framing a view with windows, always be sure that you can see the sky.

Build up, and anchor the house to the hill

Situating a three-story addition between the cabin and the creek was more easily said than done. Our engineer's



Designed for entertaining. The covered porch and the deck beyond make great spots for lunches and cookouts, while a formal dining room handles dinner parties. In the kitchen, a two-level island lets the cook prepare meals and still chat with family and guests. The island also works well as a breakfast bar. Photo above taken at H on floor plan; inset taken at I.

suggestion was to use a soil-nail wall (sidebar p. 77). Soil-nailing is a shoring method used to retain an earthen cut bank. Soil-nailing doesn't hold back the soil; it reinforces the soil by adding tensile strength in the same way that steel-reinforcing adds tensile strength to concrete. The basic process is to drill a series of holes into a 4-ft.- or 5-ft.-deep cut in the hillside. The holes are perpendicular to the ground, are reinforced with rebar, and are pumped full of concrete. Wire mesh and rebar mesh are tied to the face of the cut and then sprayed with 5000-psi concrete.

The result is a secure cut bank that doesn't need to be held back with a masonry retaining wall and a huge footing. After the soil-nail wall was set in place, the cabin's tower addition was built with standard foundation and framing methods. □

Parker Platt is a partner of Platt Architecture (www.plattarchitecture.com) in Brevard, N.C. The firm designed the 2006 HGTV Dream Home. Photos by Daniel S. Morrison, except where noted.