Daylight

In an old city neighborhood, a glass cupola delivers sunlight to showcase the interior of a dazzling new home

and the Row House

BY TANIS AND GENE SHAW

Settled in 1718, Lancaster, Pa., is the oldest inland city in the country, and it has seen its share of ups and downs. We moved here on the brink of the city's latest renewal. New restaurants and galleries, concerts, and city-sponsored cultural events are all only a short walk from our house. Thanks to Lancaster's diverse architectural history, the walk is often our favorite part of a night out.

Clad mostly in brick, the houses of Lancaster range from early Georgian to 19th-century Victorian to the eclectic colonial-revival style of the 1900s. One side of our street is dominated by 19th-century carriage houses, while our side is mostly row houses. Oddly enough, half of our lot is in a historic district.

Pleasing Lancaster's architectural-review board with the plans for our new house wasn't a concern for us, though. We prefer historic details, and our architect was familiar with the architectural styles in our neighborhood. The design challenge was incorporating more modern ideas, including universal design and a sunlit interior, into a row house.

Building in the city also poses challenges. Our house is on a narrow street where there is little space to maneuver under the utility wires. Because on-site storage space was limited, we had to arrange for daily deliveries, and during excavation, material had to be removed immediately.

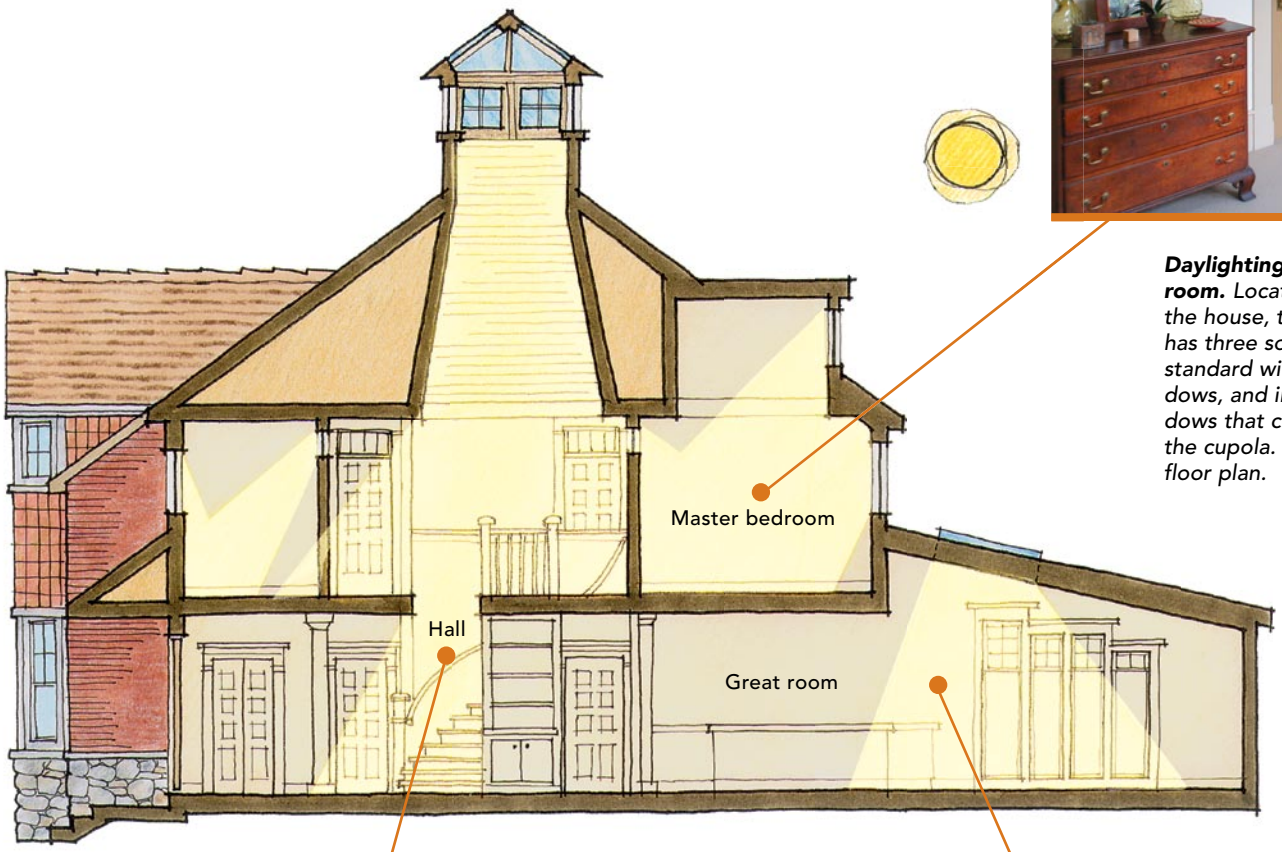
A few times, we asked the city for permission to shut the street to traffic, allowing us to employ a crane and

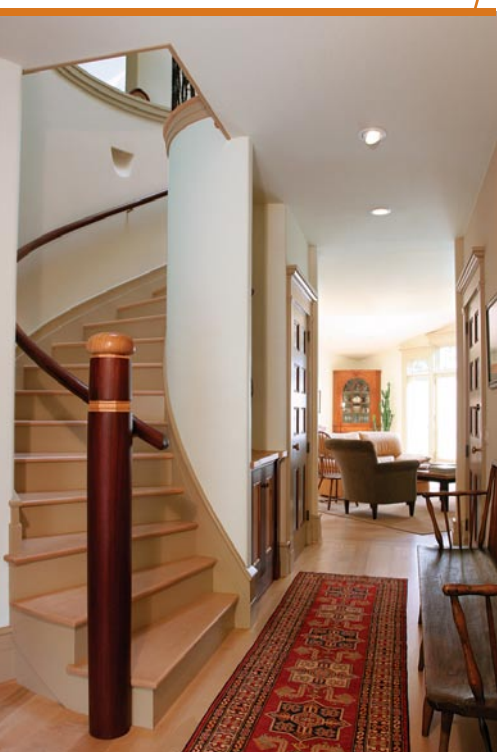
Blending in and standing out. *Built on two lots, one of which is in a historic district, this new row house blends into the neighborhood with traditional and recycled materials, and stands out with unique design details like a copper-clad two-story bay window and a glass cupola. Photo above taken at A on floor plan; photo facing page taken at B.*

A GLASS CUPOLA BRIGHTENS A ROW-HOUSE INTERIOR

With two windowless walls, row houses have a disadvantage when it comes to daylighting. Here, the solutions that realize a sunlit interior come from above. A large glass cupola captures sunlight and delivers it to the second-floor hallway via a long, splayed shaft. Interior transom windows allow light to penetrate the second-story bedrooms, and a wide circular stairwell conveys light to the windowless first-floor hallway. Dormer windows on the east- and west-facing walls and four skylights in the great room brighten the atmosphere.

Daylighting the master bedroom. *Located at the back of the house, the master bedroom has three sources of sunlight: standard windows, dormer windows, and interior transom windows that capture light from the cupola. Photo taken at C on floor plan.*

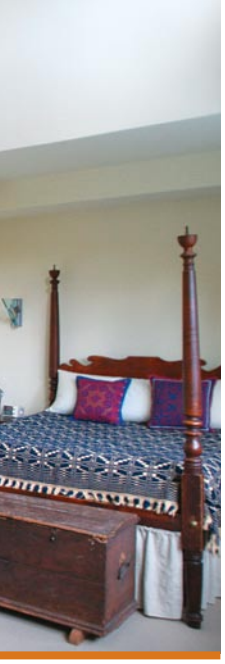




Whirling for light. *The wide circular staircase has curly-maple treads and a laminated mahogany handrail. Its greatest asset, though, is the natural light it delivers from the cupola to the first floor. Photo taken at D on floor plan.*

Making a point in the great room. *Occupying the single-story portion of the house, the triangular great room comes to a point so that views through the large windows are not of neighboring homes. Photo taken at E on floor plan.*

Drawings: Martha Garstang Hill



operator to set long beams and a cupola. When the time came to lift these heavy, awkward objects onto the house, we could do nothing but bite our nails and watch the crane maneuver around the power lines and over neighboring roofs.

Daylight comes from above

We started with two primary design objectives for the house: a sunlit interior and a floor plan that will allow us to grow old in this house. To help us meet these challenges, we employed architect and longtime friend Joan Fleckenstein.

By nature, row houses are at a disadvantage for capturing daylight because two sides of the house are nearly windowless. We are fortunate to have an east-west orientation, which offers the most exposure to the sun in an urban setting. To take advantage of this orientation, Joan suggested two features for capturing sunlight: a large cupola and a triangular great room.

The copper-clad cupola has a glass roof and windows in all four sidewalls (drawing facing page). Inside, the cupola is 5 ft. 6 in. square. However, the 19-ft. shaft that extends from the cupola's peak to the second-story ceiling splays to a 10-ft. 6-in. by 8-ft. 6-in. rectangle. Although we originally had planned for the house to be 2200 sq. ft., the cupola shaft took up so much of the second floor that we had to add space to keep bedroom sizes proportional.

To draw sunlight from the cupola into adjacent rooms, we installed transom windows along the tops of the walls and above the doorways. The wide, curved stairwell, located directly under the cupola, brings light down to the first-floor hallway.

The great room, which includes our kitchen and living area, is a single-story, triangle-shaped room in the back of the house. Keeping this part of the house to one story allowed us to install four skylights that capture direct light for much of the day. The triangular shape (the house comes to a point in the back) means that large banks of windows on both sidewalls of the great room have longer views that don't focus on our neighbors' homes.

The first floor is convertible

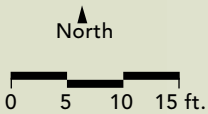
This is the second house we've built and the one we hope to retire in. Therefore, our second design objective was to create a floor plan that can be modified in the future if we need to live on a single story.

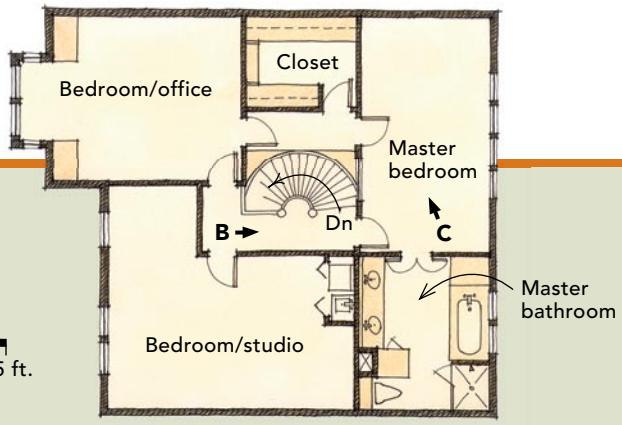
Through the garage, the house is wheelchair accessible; stairs are set up to be converted easily to a ramp. On the first floor, the 4-ft. 6-in.-wide hallways and 2-ft. 8-in.-wide doorways allow for easy wheelchair movement.

With a well-disguised Murphy bed, the library doubles as guest quarters, but it has the potential to be converted into a permanent first-floor bedroom someday. In total,

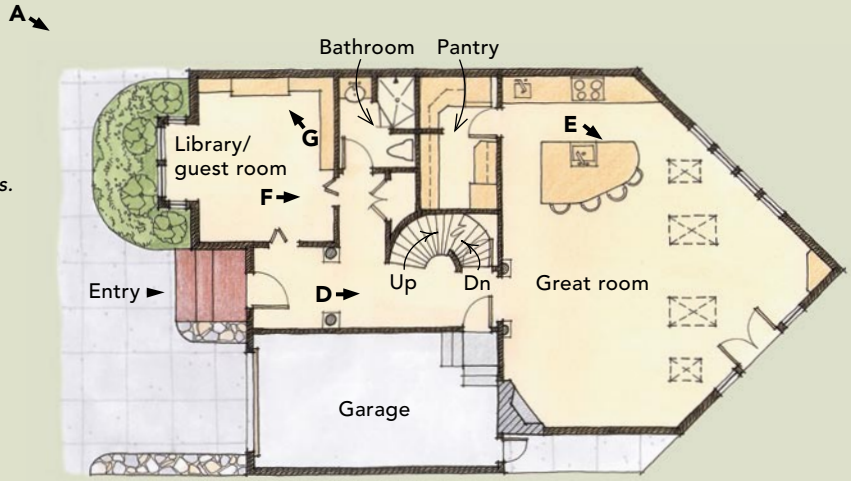
FLEXIBLE FLOOR PLAN ADAPTS TO HOMEOWNERS' LIFESTYLE

Although the homeowners use only the master suite as a bedroom, this house has the potential to change easily from a single-bedroom to a three-bedroom dwelling. The second-floor studio even has plumbing at the ready for a future bathroom. On the first floor, the library has a Murphy bed for guests. With a full bathroom just around the corner, the library could become a permanent bedroom if the need for single-story living arises.





Second floor



First floor

Photos taken at lettered positions.

SPECS

Bedrooms: 3
Bathrooms: 2
Size: 2550 sq. ft.
Cost: $125 per sq. ft.
Completed: 2002

Location: Lancaster, Pa.
Architect: Joan Fleckenstein
Builder: Gene A. Shaw, The Wooden Plane

SALVAGED MATERIALS AND SPECIALTY HARDWARE BLEND TRADITIONAL DETAILS WITH NEW IDEAS

Two things we wanted to make the most of in this house were living space and Gene's formidable cache of salvaged materials. During his 30 years in home restoration and cabinetmaking, he has acquired a collection of cabinet doors, hand-carved columns, antique locksets, and lots of wood. Before using reclaimed lumber or an old architectural element, however, we had to weigh its value and charm to determine if it was worth spending time or money to recondition it. The library offers good examples of how we used recycled materials to add interest and specialty hardware to save space.

If reading puts you to sleep, this room is for you

The first-floor library doubles as a guest bedroom. It also leaves open the possibility of a permanent first-floor bedroom.

Gene is no stranger to making cabinets, but this was his first attempt at building a Murphy bed. We chose Häfele's foldaway-bed hardware (Product No. 271.92.130; $1,429) because the dimensions were close to U.S.-standard queen-size beds and because Häfele also sells a mattress (www.hafeleonline.com). We installed the hardware on a mocked-up carcase, then fine-tuned the panel design and the hardware placement. Finally, we calculated and weighed our materials according to the manufacturer's instructions before building the mahogany and maple cabinetry.

The front panel where the bed hardware is attached had to weigh about 100 lb. for the mechanism to work properly. Weight could be added easily, but subtracting it would be difficult once the cabinetry was built. The mock-up was worthwhile, as the mechanism works well in the finished cabinets.

Bifold doors don't hide the built-ins

For years Gene had been hanging on to a few rolls of galvanized corrugated metal that he bought at a garage sale. When we built our interior doors, we decided the metal would be just right for the panels, but we had a hard time finding complementary wood for the sticking. Finally, we tried another salvaged material, mahogany backerboard, and we were satisfied.

A backerboard is the center slab of wood left over after veneer has been sliced from the log. Gene once salvaged thousands of board feet of mahogany backerboard from a veneer factory. It is used all over the house, including the rear exterior siding.

The doors in the library incorporate a space-saving idea as well. We didn't want an open door to rest against and obscure the cabinetry, so we decided to make bifold doors. We used one pair of Soss hinges (Häfele No. 341.07.572; $40 each) per door. Using Häfele's router template to install the hinges made for an easy fit. A bullet catch at the top center of the door and a regular lockset hold it well in the closed position.

MAHOGANY AND METAL DOORS look like traditional eight-panel doors, but fold away to save floor space. *Photos taken at F on floor plan.*

Traditional styling from a range of inspiration

The exterior details are drawn equally from the carriage houses in the neighborhood and the row houses on our side of the street. Salvaged stone and brick cladding are traditional materials on Lancaster, Pa., row houses, the entry and garage doors are reminiscent of a carriage house, and the copper shingling is inspired by an article in an old issue of *Fine Homebuilding* (#43).

COPPER SHINGLES add a modern twist to a traditional stone and brick row-house exterior.

A MURPHY BED, well-designed and properly weighted, transforms the library into a guest bedroom. *Photos taken at G on floor plan.*

the first floor has approximately 1600 sq. ft. of living space, including a full bathroom and an open living, dining, and kitchen area, so there's ample room for single-story living.

Half of the house is in a historic district

When it came to the exterior, we worked with Joan to choose materials and details that we liked and that would satisfy Lancaster's Historical Architectural Review Board (HARB). As an architecture student, Joan had drawn some of the carriage houses on our street, and for 31 years, Gene has made his living restoring historic homes. We were in good hands in our quest to please HARB.

There was no question that most of the exterior should be brick like the rest of the houses on our side of the street. But most of those homes also have decorative wood or asbestos shingles on the gable ends. Because the gable ends on our house are not exposed, we decided to mimic this feature with copper shingles on the two-story bay window and on the cupola.

We also used recycled stone, traditionally pointed, as an exterior material. Our front door and paneled overhead garage door imitate the hinged and sliding doors on the late-19th-century carriage houses in the neighborhood. □

Tanis and Gene Shaw own and operate The Wooden Plane in Lancaster, Pa. Photos by Brian Pontolilo.