TWO FOR ONE

Better Use of Existing Housing

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This property's ridgetop location provided spectacular connections with the natural world in two directions, once adequate windows and outdoor spaces were added.

New approaches are needed to meet our community housing needs. Housing costs are sky-rocketing. Real incomes are shrinking. The gap between the rich and the poor is widening, and government support for low income housing is becoming less and less available.

One important element is making better use of our existing housing stock of often more-than-ample homes.

Several of us recently completed a pilot project, using a typical 3-bedroom ranch house from the mid 1970s, to see what could be done adapting existing housing. This particular conversion with a full "daylight" basement under the house, plus the normal two-car attached garage, explored several options:

* Converting garage space into a second apartment.
* Reconfiguring a basement into a well-lit, comfortable, separate apartment.
* Providing flexibility in rental, and use of space for home occupations.
* Reducing transportation costs thru in-home workspace and proximity to work.
* Upgrading energy efficiency of the building envelope, appliances, water, and lighting.

Since conversion, an average of seven people now live and work in the house, with high-speed internet available in all spaces. Four residents work in the house or on an adjacent property. An existing residence, which otherwise would probably have become a high-income vacation home, ha been kept available for comfortable and affordable use by a larger number of full-time residents.

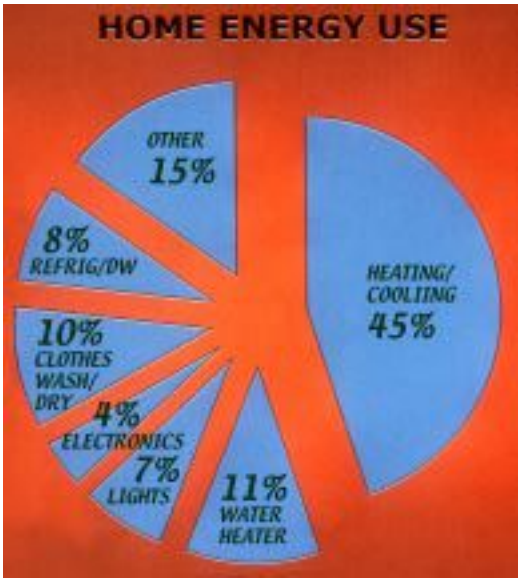
GETTING READY FOR THE FUTURE

Conversion plans for this house were based on acknowledging the need for major reduction in non-renewable energy use over the house's lifetime.

* Insulation in an open attic was easy to upgrade inexpensively from R-19 to R-57 - well above current code (R-38). It cost little more to put in R-38 blankets than to install another R-21.

* Basement walls were uninsulated. We furred them and installed R-21 - again above code requirements.

* All lighting in the house was upgraded to compact fluorescent bulbs, with apparent energy savings of 75%. (In actuality, as long as electric heat is used, only about half that efficiency is gained, as the heating system has to make up the difference during the heating system. With wood heat, the full savings is gained.)



* A shared high-efficiency clothes washer was added, to reduce water use and energy used for clothes drying. An outdoor clothes drying line is available.

* Existing 5-gallon flush toilets were replaced by dual-flush 1-gallon toilets, with a water use savings of 80%.

* Existing fireplace inserts were not worth salvaging and fireplaces were damaged from their installation. New high-efficiency inserts were installed for conversion to wood for primary spaceheating.

Some efficiency measures have not yet been installed, due to timing/budget/technical issues:

* Advice from ODOE was to wait on water heating upgrades until the new generation of heatpump water heaters is available.

* Upgrade of electric stoves to propane, and of the second refrigerator to Energy Star will occur when replaced.

A NEW SHARED ENTRANCE *to all units through the former garage gave privacy for the covered porch. It also permits shared interior access to laundry, storage, and other spaces.*

OUTDOOR SPACES: *Creating direct access from many spaces to useable private or shared outdoor spaces increased the aemenity value of the house and seasonal useability of outdoor space.*

An interior stairway that required going through the upper space to access the lower was relocated, also preserving view privacy from the upper unit. Lower level bathroom access and room layout was changed, to allow a workable kitchen and floorplan. Electric panels were relocated to be accessible from all units, and to provide access from one unit to another.

Remodeling is usually more expensive than building new. But it provides employment, rather than consuming resources. Where it can, such as here, provide major increases in useability and efficiency, it pays off.

Another option not explored in this project is conversion of a single 3-bedroom house into two separate units (below). This can involve separating the existing bedrooms into a one or two-bedroom unit, and the kitchen, living and dining becoming another unit, converting the living room into a bedroom and compacting the living space into the former kitchen and dining.

MAKING THE CONVERSION

Conversion from an “illegal” to a legal duplex required, in this case, meeting stringent new code requirements. This included 1-hour fire separation, revamping the heating system to serve only one unit, revising electric distribution, adding numerous smoke detectors, etc.

Accessory dwelling ordinances have been implemented in manay jurisdictions to avoid cost impacts these requirements have on existing structures. Requiring an extra 1/8” of sheetrock between dwelling units when people are homeless makes little sense.

Use of a diamond-bladed chainsaw for cutting openings in the above grade foundation wall permitted wonderful new views, sunlight, and openness in many spaces.

This project showed that water and energy efficiency can be improved so that the existing infrastructure can serve more people without additional costs. This can be a good argument for not assessing Systems Development Charges when creating accessory dwelling units in existing buildings.

Reused and recycled doors, cabinets, lights, and some appliances helped keep costs reasonable and appearaances consistent with the existing building. “Click-flooring,” on a foam pad, was used to reduce sound transfer between units.

The arrangement of the existing building permitted a conversion with unusual potential for flexibility. It could be rented (zoning permitting) as three totally separate and independent units - two 3-bedroom and one 1-bedroom unit. Or it could be a spacious duplex with two 3-bedroom units, plus working/office space useable by either or both. Or it could be used flexibly as one or two “shareplexes,” with a number of individual renters sharing spacious living, dining, and kitchen facilities. Or it could be a “workplex,” with up to four spaces useable as workspaces or guest spaces for residents.

Below is the “basement” kitchen and dining room, after creating new window and patio door openings (above).

RANCH HOUSE to FLEX-HOUSE CONVERSION

DUPLEX:
This particular property was zoned for duplexes, so fire-wall separations resulted in this "duplex". Informally, a person in one duplex can arrange to use kitchen and living spaces in the other duplex.

WORKPLEX:
A 3-bedroom upper and 1-bedroom lower unit leave four rooms (purple) that can be used in a variety of ways as work-space or shared guestspace for the occupants of the house.

TRIPLEX:
The configuration of the existing structure, with attached garage and full daylight basement, lends itself also to a tri-plex arrangement, with two 3-bedroom and one 1-bedroom totally separate units.

SHAREPLEX:
The large living and dining spaces in the upper unit, with wonerful views both directions, could be shared by a number of housemates (up to 7 in this case), leaving a 1-bedroom lower unit.