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Restoration Redux

More Frills in New Homes

Building Activity Drops

R.I. allocates \$70 million for first-time mortgages

Other First Home purchase price limits are:

- \$124,875 for existing single-family homes;
- \$141,178 for existing two-family homes;
- \$170,893 for existing three-family homes. ■

continued on next page

Builders who
used defective
FRT plywood
may land in
court.



Sprinkler requirements for one- and two-family homes was an issue again this year although there were no formal proposals. "We'll be fighting over sprinklers for the

Any house a registered builder erects or gut remodels to the program's performance specifications will receive certification as an "Energy-Crafted Home." This entitles the builder to a cash incentive up to \$1,500 paid by the utilities, direct marketing assistance, and the benefit of a publicity program. Registered builders also receive free technical assistance throughout the construction process. Homes designated as "Energy Crafted Homes" will also qualify for low-interest Energy Efficient Mort-

Probably the most significant energy legislation is the Senate and House versions of the National Affordable Housing Act. By setting efficiency guidelines, the act makes housing for first-time home buyers, who might not otherwise be able to afford monthly payments, more accessible. Increased efficiency means lower monthly utility bills and more money available for mortgage payments. ■

Remodeling on the radio

The National Association of the Remodeling Industry (NARI) recently premiered a national radio program, "America Remodels." The live, call-in show is on every Saturday from 10:00 a.m. to 12:00 p.m. (EST/EDT) over the American Radio Networks.

Each week the show will feature several specialists in the

remodeling field who will answer consumers' questions regarding home improvement and repair. The show will use the resources of NARI to help provide the answers to services and products associated with remodeling.

This is the first time a national trade association has been associated with a show of this kind on a national network. So far, the response has revealed a need for quality answers to consumers' home improvement questions. ■

Vinyl siding prejudice surfaces again

Vinyl siding's reputation as the Rodney Dangerfield of the exterior wall covering world was upheld this summer in Burlington, Vt.

At least one city employee called vinyl siding "gross," and city planners delayed authorizing a permit to install the siding, arguing it would taint the historic veracity of the lakeside neighborhood, which is a design-control district, according to reports.

After a six-week hassle, however, Terence and Kathleen Lynch received permission to use the low-maintenance wall treatment. Originally, the Lynches planned to use cedar clapboards. But after considering the size of the two-story colonial, they decided against committing to a lifetime of painting.

According to veteran siding installer Red Elmore, owner of Redi-Bilt Construction Co. in Burlington, the Lynch's problem is not unusual, although there is no law against vinyl in the area.

"They [planning boards] can't stop you. They can hold up your permit, but eventually they have

to let you do it," he said. Although Elmore was not the contractor for the Lynch project, Lynch consulted him when he ran afoul of local officials.

Elmore, who has been in the siding business since 1953, said for the past 10 years he has installed vinyl siding almost exclusively. "Aluminum is gone out the window," he said.

No stranger to disputes with planning commissions, Elmore recommends that contractors initially turned down for specifying vinyl siding should take their case to a higher authority.

"Go directly to the selectman or city council and ask why you can't get a permit. They'll have to give one if it isn't banned," he said.

And if vinyl siding is to be banned, which is often suggested by government officials, Elmore said, then it should follow procedure.

"If they want to ban it, let's have committee meetings and let the people vote. If not, then let people do what they want," he said. ■

Trouble on Walden Pond

How about an office on Walden Pond? Hard to think of a better place to put your feet up on your desk and contemplate the quiet desperation of man. Thanks to publisher and developer Mortimer Zuckerman, a 147,000-square-foot office building and parking lot may grace the shores

of Thoreau's once isolated retreat in Concord, Massachusetts. Plans are also in the works for a 139-unit condominium complex on nearby Bear Garden Hill, one of Thoreau's favorite spots.

Several conservation groups are trying to raise money to purchase the land, about 43 acres, on



The peaceful shores of Walden Pond may soon be home to an office park and condominium complex.

which the condos and the office park will sit. But the price is high, about \$13 million.

"Walden Pond is a shrine to many people. It is a symbol for man's need to balance civilization and nature," says Thomas Blanding, president of the Thoreau County Conservation Alliance (TCCA). While portions of the 2,680-acre site where the famous spiritualist lived and wrote from 1845 to 1847 have been divvied up for private homes and highways, TCCA would like to see a National Historic Landmark designation for the woods. They would also like to purchase any developable land remaining on the site.

The state already owns 300 acres, including the pond itself and the spot where Thoreau's home once stood. Thoreau, incidentally, was an able carpenter as well as a prolific writer. He single-handedly built his 10' by 15' home, split the shingles for the exterior and plastered the interior. A model stands on the site. ■

Architectural drawings by masters available on videodisc in 1991

Students of architecture will soon have access, via computer, to more than 45,000 architectural drawings at the Columbia University Avery Architectural and Fine Arts Library.

Thanks to optical laser technology, access to the drawings, notes and project details of such architectural masters as Frank Lloyd Wright, Louis Sullivan, Ely Jacques Kahn and Hugh

Ferris will be at the fingertips of computer-equipped architects, students, and scholars.

The 45,000 drawings selected from the Avery collection are being recorded on videodiscs and will be available by fall of 1991. American drawings of the 19th and 20th centuries are emphasized. In some cases, drawings will include material specifications and the

names of contractors used to complete the projects.

The works will also be accessible through the Research Libraries Information Network (RLIN), a computerized network for cataloging and accessing books, periodicals and other written and visual materials owned by libraries nationwide. Students, scholars and architects have often looked to these architects for restoration information, but locating their work could be difficult. ■

BOCA, continued from previous page next 100 years," Morris says.

Some localities, including Prince George's County, Md., Scottsdale, Ariz., and Greenburgh, N.Y., already mandate sprinkler systems for new homes. Several cities in California, including San Diego and Beverly Hills, are considering incorporating sprinkler requirements into their codes.

Insulation upgrade denied

BOCA representatives voted down a proposal to adopt the standards of CABO's Model Energy Code (MEC).

"The changes were perceived as promoted by special interest groups looking to increase their sales," says Morris. Proposed by Dow Chemical Company and the Mineral Insulation Manufacturers Association, the changes would have required floor-to-ceiling exterior insulation of foundations regardless of climate or backfill. It would have also included 2x6 framing and triple-glazed windows in some cases.

While the MEC standards are considered excessive by many inspectors and builders, it is likely that BOCA insulation requirements will be increased within the next few years, according to Morris. The changes will probably be a compromise between the MEC and existing BOCA standards.

Pool enclosures

Another proposal that failed to be approved but may set the trend for upcoming code changes was a requirement that swimming pools and hot tubs be fenced to prevent drowning deaths among children. While many localities already

require fencing, the back of the home typically constitutes the fourth leg of the fence. That means children can slip out the door and enter the pool area, says Dave Bowman, senior staff engineer for BOCA.

The Consumer Products Safety Commission proposed that doors leading to the pool enclosure be wired with alarms. But the request was denied since the alarm would constitute a nuisance and could be easily de-activated.

Structural requirements

The following structural requirements were approved or amended:

- Exterior stairways on single-family homes are no longer required to be protected from the elements. The rule was originally designed to keep stairs clear of snow and ice. But nobody followed it and few inspectors enforced it, Bowman says.
- Corrosion-resistant flashing is now required where decks and porches intersect with siding.
- Only those bath/shower windows under 60 inches from the floor are required to be of tempered glass.
- Eight-inch concrete basement walls may now be 7 1/2-inches thick to conform with concrete industry design standards.
- Crawlspace access doors must be a minimum of 18 inches by 24 inches.
- Plans for engineered plumbing systems, including the new manifold systems, must be stamped by a "design professional," which includes licensed architects, engineers and plumbing designers. ■

Energy-Crafted Home, continued from previous page

gates (EEMs).

The first of the workshops, which are being coordinated by Fair Share Development Corp. of Rhode Island and Massachusetts, were held this summer in those states. Fair Share's Bob Kelly said that while the builders who attended initially seemed skeptical about the program's performance standards, they quickly began to see more possibilities than problems in the system.

"When I first heard of the program, I was a little apprehensive. Oh boy, I thought, somebody's going to tell me how to build," says Pat Cooke, a builder of infill housing in Dorchester, Mass.

But Cooke found the program thorough and useful.

"It was far and away the best source I can imagine for comparing different energy-saving techniques. They were making a very conscious effort to deal with a full range of solutions," he says.

The workshop is meant to give builders the tools they need to meet the rigorous standards of building certification. For the most part, these standards are performance based, though a few systems are required.

Energy Crafted Home certification standards include:

- Meeting energy performance budgets of 1.4 Btu per square foot of heated shell per heating degree day for heating, and from 2.7 Btu to 3.7 Btu per square foot of shell per cooling degree day for cooling.
- Having an effective air leakage ratio of 1 square inch or less per 100 square feet of shell area

at an indoor and outdoor pressure difference of 4 Pascals.

- Having a continuous warm-side vapor barrier on walls, ceilings, and floors.
- Having a sub-slab moisture barrier or crawl space ground cover of 6 mil poly.
- Having a whole-house ventilation system capable of moving at least 60 cubic feet per minute (cfm) for a 2-bedroom house, or 100 cfm for a 3-bedroom, as well as local exhaust fans in baths and kitchens.
- And where necessary, having sub-slab gravel to help reduce radon infiltration.

In addition, all fossil-fuel heating and hot water systems must be of the sealed combustion variety (with a direct combustion inlet from outdoors and no household air used for combustion). Finally, all non-decorative lighting fixtures must have high-efficiency compact fluorescent bulbs. A blower door test and site visits from the program's technical advisors will verify that the standards have been met.

Mark Kelly, the program's technical director, admits that the specs are difficult to achieve. But workshop instructor Paul Bourke, who has built energy-efficient homes for more than 10 years, says the standards are attainable with a reasonable effort.

Having taught one weekend workshop, Bourke said the requirements that initially raised the most skepticism were whole-house ventilation and the tight sealing requirements. He says that he expects most of the requests for technical assistance

to be in those areas. Bourke says he was surprised that few of the builders expressed doubts about sealed combustion heating units, which once had a bad reputation. Bourke, however, says the reliability of those units has improved in the past five years, which may be why most workshop attendees were not concerned about them.

In general, the workshops are relatively routine for builders familiar with energy-efficient building techniques.

"There wasn't anything brand new or radical," says Pat Cooke. "The value was in the comprehensiveness of the course and in the computer program" that workshop participants are given. The software, which is based on the well-known REM Design program and runs on any IBM-compatible, is a fill-in-the-blank type program that lets builders test the effects of different design options, such as increased ventilation or glazing, on the thermal performance of the house. (Mark Kelly hopes to have a Macintosh version ready in 1991.)

In the long run, the program's success will depend on home buyers. If the marketing efforts can raise awareness of the need for energy conservation, the consumer demand will keep the program going.

"It may take a few years in this slow market," says Bourke. "But for now it's up and running, and that's the important thing."

For more information, or to find out whether your local utility is participating, call Fair Share Development Corp. at 617/482-8641.

—David Dobbs

Shade of roof matters

Everyone knows black roofs absorb more heat than white roofs. Right?

But according to researchers, roof color has a negligible effect on a building's energy use. The only real difference in the black-and-white roofing choice is that light-colored shingles last longer.

When Donald Backenstow of Carlisle SynTec Systems studied low-slope roofing membranes, he found that dark roofs absorb more of the sun's radiant energy than light-colored roofs. Black roofs are 5 to 15°F warmer on a typical winter day. But roofs spend an equal amount of time in the dark. At night, both light and dark roofs are the same temperature. The outside temperature determines the heating or cooling load of the building.

Although the temperature of black roofs may increase slightly and heat the air just below the roof, building insulation restricts

temperature changes. Insulation, rather than roof color, is the key to saving energy.

The research also showed that roof orientation, wind velocity, and roof slope are more significant than roof color in determining roof temperature.

While roof color may not affect energy use as much as conventional wisdom suggests, light-colored shingles last longer than dark ones, says researcher Bill Rose at the University of Illinois.

"It appears that heat is a major culprit in reducing shingle life. The hotter the roof gets, the shorter will be its expected service life," he says.

White roofs stay slightly cooler than black roofs, so they last longer. Rose estimates that a white roof will last a year or two longer than a dark one.

Rose has found that geography and building orientation also affect shingle life. "South-facing

slopes always deteriorate more quickly than north-facing slopes. Roofs in the South have to be replaced more frequently than roofs in the North. A roof that lasts 20 years in Illinois would only be expected to last 15 years in Florida."

Most builders and home buyers don't choose roof color because it

makes their homes cheaper to heat and cool, or even because the roof might last longer. They pick the color they like. Nevertheless, regional biases show up in consumers' preferences. White roofs are popular south of the Mason-Dixon line, and black roofs are popular in the North.

—Karen Lang Kummer

Radon penetrates concrete blocks

In the past, the first line of defense against radon infiltration was to seal basement floor cracks. Now researchers say that basement walls also permit radon entry. Walls made from hollow-core concrete blocks can leak up to 10 times more radon than major cracks, such as cracks occurring at the perimeter of a basement floor.

John Ruppertsberger, of the EPA Air & Energy Engineering Research Laboratory, also discovered that hollow concrete blocks made by different manufacturers have different gas permeability rates. These rates can vary by as much as a factor of 10.

There is, however, a way to reduce radon transmissions. Ruppertsberger's research indicated that a liberal application of latex paint or a paintable concrete topcoat on the interior surface can reduce permeability by as much as 99%. ■

Fiberglass batt width important

Most insulation manufacturers make two types of thick fiberglass batts: full-width batts for attic applications and narrower batts for installation between rafters and joists in cathedral ceilings and floors. The reason for the different widths is simple, but the importance of avoiding the wrong product is surprisingly great.

In cathedral ceilings or floors, the cavity width with 16-inch or 24-inch centers is about 14½ inches or 22½, respectively.

Stuffing full-width 24-inch batts into these cavities is difficult and will typically result in a sloppy job. So manufacturers produce 15-inch and 23-inch wide batts for those applications.

But in attics, the batts should cover the ceiling joists or truss bottom chord so that they are not exposed to the attic air. If the narrow batts are used in an attic, a gap will be left over the framing, resulting in increased heat transfer through the ceiling.

—J.D. Ned Nisson

Job costing software with integrated accounting capabilities is designed for special trade contractors including electricians, mechanical contractors, and roofers. Contact Software Shop Systems, Rte. 34, P.O. Box 728, Farmingdale, NJ 07727; 201/938-3200.

Smart Digitizer has the touch for estimating. The Smart Digitizer is a stand-alone system that inputs take-off information with a touch of the stylus to a blueprint. Contact Altek Corporation, 12210 Plum Orchard Drive, Silver Spring, MD 20904; 301/572-2555.

Database with items and prices of roofing materials is designed work with Timberline's Precision Estimating Software. The database contains 95% of items roofers use. Contact Timberline Software, 9405 SW Gemini, Beaverton, OR 97005; 503/644-6001.

Calculate pipe sizes automatically with the Service Sizer. Program also takes into account a wide variety of service parameters. Contact Parkcon Inc., P.O. Box 5980, Woodland Park, CO 80866; 719/687-1007.

Computer Bytes:



New homes getting fancier

New homes have been getting larger and more expensive over the last several years. But what's under the roof of a new home besides more floor space?

Single-family homes sold in 1989 differ markedly from those sold in 1984. Price was the most notable change. The median price of a new home reached \$120,000, up from \$79,900 in 1984. About 36% of new homes cost over \$150,000 last year, compared to only 10% in 1984.

Most of the increase in home prices during the past five years was a result of construction improvements. Houses are 15%

larger. More homes have two-car garages, and four bedrooms are becoming standard. Changes in the equipment, such as air conditioning as a standard feature, also forced prices upward. Homes priced above \$200,000 typically came equipped with such extras as trash compactors, burglar alarms, automatic garage-door openers, and intercoms.

Fireplaces were also making a comeback. Nine out of ten homes priced above \$200,000 had at least one fireplace. But the popularity of fireplaces had little to do with climate. They were just as popular in the South

and West as in New England and Midwest.

Homes sold in 1989 had more bathrooms, and they also typically had more luxurious bathrooms. The whirlpool tub was a relatively exotic feature in 1984, used in only 7% of new homes. But by 1989 they were included in 21%, including 7% of the least expensive homes and two-thirds of the most expensive models.

The dominant trend of the mid-1980s, a move toward bigger and better housing, continued in 1989. In general, the new-home buyer of 1989 opted for a bigger, more customized home.

—Reprinted with permission from Housing Economics

From What We Gather

Ultra-low flush toilets (ULF), which use about 1½ gallons of water compared to 7 gallons used by conventional commodes, may soon be the law of the land. Several bills are pending in Congress to require the ULF in all new construction, while at least seven states already require the ULFs for new building. These states include Connecticut, Massachusetts, Georgia, California, New York, Rhode Island, and Washington.

Although Connecticut is among the seven states requiring ULF, Winsted, Conn., conservationist and businessman Henry Ryan is taking it

a step further. Concerned about raw sewage leaking into local lake from shoreline houses with substandard septic systems, Ryan is using a novel approach to promote the replacement of conventional toilets with ULFs. He gave 50 of them away, and cut water use around the lake in half.

In the if-you-can't-beat-'em-join-'em department, car crusher Nathan Palmer, tired of paying to dispose of tires, decided to switch businesses. Now Palmer, of Palmer Tire Shredding Co. in North Ferrisburgh Vt., is the guy people pay to take unwanted tires. Among the uses for the pulverized tires are backfill for

houses or sub-base for roads. Tire chips are inert and don't leach into the environment. Question: Do cars handle better on roads built with radial tire chips?

Poltergeist IV? Developers in Lawrenceville, Ga., are holding off building on two of 16 planned lots until archaeologists can inspect 30 rock mounds believed to be older than the earliest white settlers. Examinations of 16 other mounds at the site revealed nothing more sacred or ceremonial than a skunk's jawbone. Archaeologists theorize the mounds are the result of clearing for farming.

Tax Talk

Transfer your business and still keep control

By Irving Blackman

Do you own a closely held family business? Then I want an honest answer to a tough question. Are you willing to turn over control of your business to one or more of your kids?

After 35 years of working with owners of small businesses who want to transfer ownership of the business to their children, I know one thing for sure. Almost all owners (19 out of 20 to be exact) are not willing to give up legal voting control of their business until they retire completely or die.

The typical owner of a family business usually has two basic goals—transfer the business to the kids and pay as little in taxes as possible. And, of course, complete the transaction without giving up voting control.

This may sound like the impossible dream, but it can be accomplished.

But first you must get around some very technical law found in Section 2036 of the Internal Revenue Code. Either you satisfy this section of the law legitimately, or it will beat you.

Say you sell or give your business to your kids over time so you can reduce your estate tax. If you violate Section 2036, the Internal Revenue Service (IRS) will tax your business in your

estate at its fair market value on the day you died, even though you had not owned the business for many years.

Here is a simple method that we use in our office to help a family-business owner transfer his business, yet keep voting control. The owner changes all of his common stock into two types of common stock—voting common stock and nonvoting common stock. This transaction is tax-free and works for both C corporations (tax paying) and S corporations. The owner then sells or gives (the most often-used method) the nonvoting stock to his kids and keeps the voting shares. The owner can own as little as 1% of all stock and still retain 100% of the voting control.

This method satisfies Section 2036(b) fully. It will not violate Section 2036(c) if you have a professional tax adviser lead you through a somewhat complex maze. It is essential to get a competent adviser to explain the traps, exceptions, and opportunities available in this difficult but manageable section of the law. ■

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Roof hotline

General contractors with roofing problems can find a reputable roofing company by calling 1-800-USA-ROOF. The toll-free number is sponsored by the National Roofing Contractors Association (NRCA) which will

send callers a special 12-page booklet, *Buying a New Roof*, and a computerized list of NRCA-member contractors in their zip code area. USA-ROOF operators are on duty Monday-Friday, 8 a.m. to 5 p.m. (CST). ■