

A rustic living room with a stone fireplace, wooden beams, and a large window. The room is warmly lit, featuring a wooden floor, a large window with a view of the outdoors, and a stone fireplace with a fire burning. The ceiling is high with exposed wooden beams. The overall atmosphere is cozy and inviting.

Today's hi-tech
windows offer
more than
good looks

Sash Appeal

by Jana Voelke Studelska



Photo pp. 30-31: Floor-to-ceiling windows can open up views and let in light at any cabin. These sliding French doors offer a top-hung screen for easier opening.

Above: Windows with extruded aluminum clad exterior make for low maintenance. These casement windows lock in two places.

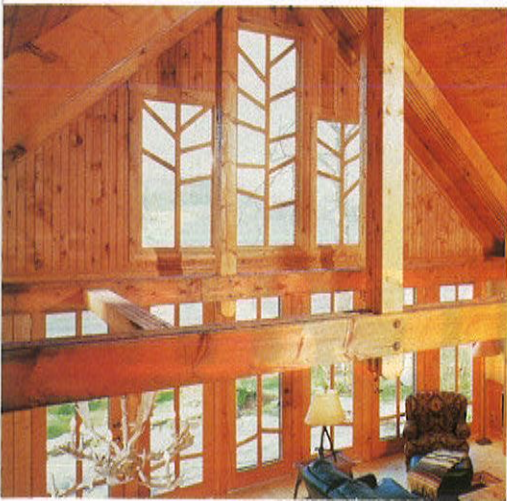
Below: Divided light windows go modern with a simulated divided light pattern designed to look like pine branches.

Early last spring, at the first seductive hints of thawing soil and a warm breeze, my friend and I yanked ... and pushed ... and grunted ... and forced open all the south-facing windows in her family's wonderful old cabin. Warm, fresh breezes to chase out the stale winter air! Sunshine! Puddles on the lake ice promising open water soon! (No kids with us!)

While I held up the heavy sash on a particularly uncooperative window, she dashed out to the yard to find sturdy sticks that would serve as the season's "window-propper-uppers," as they are fondly referred to. All was well until early evening,

when the sun began to set and the temperature dropped quickly. And then we began to yank and push and grunt all over again, trying to get the windows shut. "It's sort of a ritual," she explains, "a very frustrating one."

The charm of Traditional Cabin Style can certainly have its moments. The lovely divided-light windows that look as if they're straight out of a fairy tale cottage probably have all the insulating properties of plastic wrap. The bedroom windows that slide back and forth horizontally actually slide, but there's so little ventilation in the room that there may as well be no windows there at all. The bathroom window hasn't locked down completely in years, so there's plenty of





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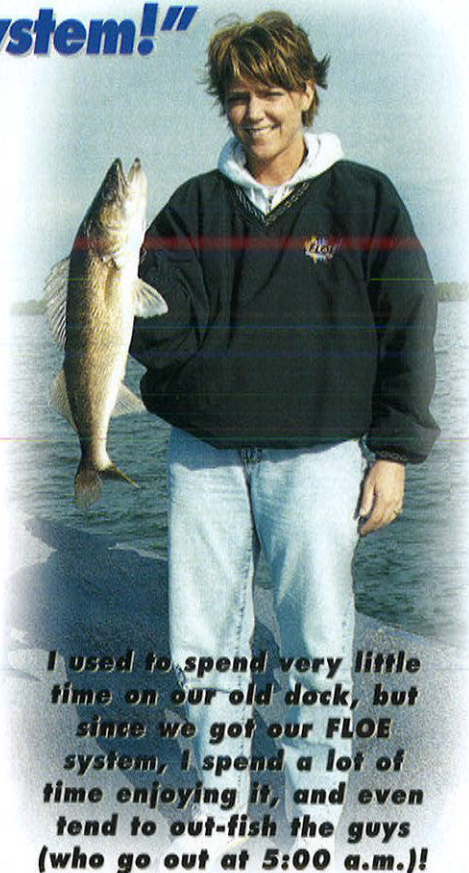
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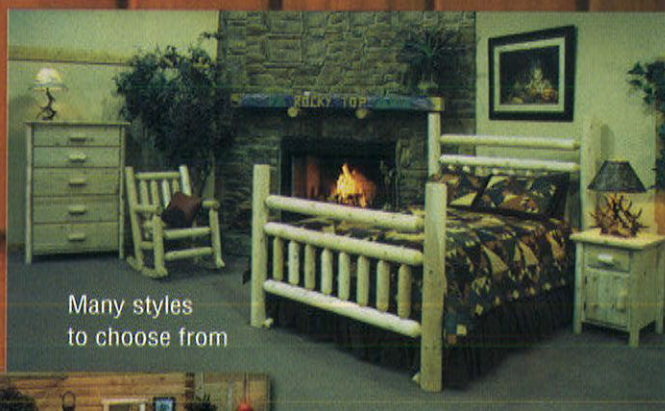
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I used to spend very little time on our old dock, but since we got our FLOE system, I spend a lot of time enjoying it, and even tend to out-fish the guys (who go out at 5:00 a.m.)!

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ventilation in there – all year long.

Windows are one of the most important design elements in your cabin. If you're thinking about replacing windows, the stylish looks a perfect window can offer are probably the most appealing part of your dreaming. But windows are mostly about functionality, usefulness, mood, safety and comfort – the parts you can't see.

Well-placed windows will lighten dark, drab rooms, offering warmth and coziness. They'll open your living space to the outdoors, offering views, solar heat gain in winter and starry skies at night. Good windows offer energy savings and can turn a drafty corner into a cozy nook, and on hot summer days, catch breezes to keep you cool. On rainy days, good windows will keep your cabin dry, even if you've gone fishing and left the windows wide open. Good windows are a deterrent to bad guys – those on two feet as well as those with bushy tails.

Windows should, at the very least, enhance your cabin experience rather than try your patience.

But as anyone who has gone window shopping (so to speak) can tell you, windows can be very, very confusing. There are so many choices and terms to navigate, that simply choosing windows can be as difficult as installing them. Which brings us to another matter: installation. By all accounts, not a project for the weak of heart.

It may be a mouthful of new terms and some dizzying decision-making, but the technology that goes into today's windows makes the final product worth the work.

Windows have changed. What looks and feels like wood may be a composite material that requires no sanding or painting. The improved glazing (start referring to our vocabulary list right now) increases your energy efficiency while increasing the amount of light that passes through. Low E, a coating applied to the windows, actually reflects heat or cold back toward the source, so in

Helpful Terminology Glossary

❖ **Glazing:** Refers to the glass portion of the window.

❖ **Low E:** A transparent coating applied to a window's surface that will separate long-wave (heat) energy and short-wave (light) energy. The long wave is reflected back to the heat source. The short wave is allowed to pass through the coating.

❖ **Double Glazing:** A window that is two pieces of glass thick. The space between the two pieces acts as an insulator. Most double-glazed windows have argon gas – an inert gas – between the pieces, which greatly increases the window's energy efficiency. Triple glazing is also available, but is often too heavy for residential uses.

❖ **Sash:** The operating portion of the window. In a double-hung, the portion that slides up and down, for example. In awning and casement windows, the sash is referred to as a "vent."

Types of Windows Guide



Casement Window:

A window in which the operating vents move in and out, hinged to the side, and usually operated with a crank handle. Casement windows provide good ventilation and are fairly easy to clean. They're a bit pricier because of the operating hardware.



Bay Windows and Bow Windows:

These two styles are similar, but bow windows are framed to form a gradual arc instead of the sharp angles of a bay.



Multi-Units: A number of windows grouped together to form a single-looking unit. Often, they're constructed as a whole in the factory.



Double-Hung Windows:

These are the old standard. Two sashes, one on top of the other, moving up and down. They provide moderate ventilation, and can be difficult to clean unless the sash tilts in.



Awning Windows:

Open out, like the name suggests. They provide little ventilation, but are a good choice for areas that are subject to rain. The hardware is usually crank-out.



Slide-By Windows or Slider Windows:

They function like double-hung windows turned sideways.

Bottom: Small awning windows are mullioned under picture windows to allow for ventilation while creating an unobstructed view.

Below: These double-hung windows are oversized to allow more light in. Four coil-spring, block and tackle balances on each sash ensure smooth operation.



winter, the cold stays out and heat stays in. An industry focus on low-maintenance and easy use has made new windows a joy – especially to those of us used to wrestling with older windows on a regular basis.

There are some fantastic new ideas to explore. Window shades – choose between mini-blinds and pleated shades – installed between the panes, keep children, pets and window décor safe. A great feature for the cabin is a retractable insect screen: Simply roll it up with a gentle nudge and you've improved your light by 40 percent and opened up your view.

Even more interesting are some of the emerging technologies, often referred to as “smart windows.” With the turn of a knob, an electrochromatic window can block all or some of the outdoor light by activating particles suspended between panes of window glass. Liquid crystals, the same technology used in

LCD video screens and digital clocks, are also being used as dimming devices. While still pricey (compare smart windows at \$100 per square foot to \$20 a square foot for regular windows), the U.S. Department of Energy estimates savings of \$3,000-\$6,000 per household, which makes smart windows an increasingly smart investment.

Start with a bit of daydreaming. Pick up some manufacturers' catalogs or homeowner magazines and look for ideas. Tour some newer construction, and take a close look at the windows' appearance as well as mechanics. What do you like? How does the seal on a window feel to you when you shut it? At a showroom, ask a salesperson to show you how the window operates. If you haven't been around new windows in awhile, you're in for a treat. They're so easy to clean – no more ladders, no more removing screens or storm windows.



Back at the cabin, take a look at things with a critical eye. What's most important to you? Do you want to replace a few windows that have ceased to open and close easily? Do you want to add light with some skylights or geometric windows? Do you need more air movement through the cabin in the summer months? How about window size? Would enlarging a current window offer a better view, or open up your living area to your neighbors like a theater stage? Call in a trusted contractor and ask for his observations and recommendations.

Lastly, consider what you're willing to invest. Your contractor can help you understand the cost of the windows and compare it to the value you'll be getting. For example, it may initially be less expensive to install a cheaper window unit, but if it constantly suffers from condensation during the colder months, you're going to experience a larger

repair bill when it comes time to address the water damage. Certainly, you need to know what you're willing to spend, but you also need to have an idea of what you want for your money.

Replacement Kits

Most of the larger window manufacturers have introduced product lines designed specifically to replace older windows. Nicole Welo, a marketing project manager for Marvin Windows, suggests replacement kits for owners who don't want a new look, just a more efficient window.

"Some older structures will have beautifully maintained woodwork," Welo said. "Like the oak trim you might see in an old Victorian home. But the window itself is only one pane of glass thick, and you're losing so much energy through it."

Replacement kits, for the most part, come with all the custom capabilities and options a new window

offers, including tilt-in features for easy cleaning. Most kits are offered as double hungs, although casements are available. As for pricing, replacement window kits are comparable to an entire new window unit. The savings are realized in labor costs, as replacements do not require new trim and framing. A standard double-hung will start at around \$250 per unit, and increase in price as hardware and custom-fitting requirements increase.

Many of these replacement kits are marketed to do-it-yourselfers, but most contractors and even some manufacturers will encourage you to find a qualified carpenter to measure, order and install the windows. If your do-it-yourselfer is up to the challenge, encourage him or her to ask around first to get a good idea of what the job might entail. Proper installation of any window is critical if the window is to function the way it's been designed.



Window Framing Materials

❖ **Wood Windows:** Made of solid wood or wood products. They can be custom-ordered to match existing trim, with a coat of primer, finish, or with no finish at all. The main drawback to wood windows is the painting, something you should expect to do every five to seven years. And no matter how well installed, wood will warp over time.

❖ **Aluminum Cladding:** A layer of aluminum applied to the exterior surfaces of a window (often wood core) to provide a durable, low-maintenance surface. There are fewer color options than with wood finishes.

❖ **Aluminum Windows:** Made entirely of aluminum, but not a good choice for most climates. Aluminum conducts heat and cold very easily, thus the windows offer little insulating value.

❖ **Vinyl Cladding:** Another popular low-maintenance choice, and can be applied over other materials, like wood or wood products. Rule of thumb: The thicker the vinyl the more durable it will be.

❖ **Composite Windows and Vinyl Windows:** These are emerging as non-wood, energy efficient and low-maintenance alternatives that won't warp or rot like wood windows can in extreme conditions.



Left: Floor-to-ceiling awning and fixed-frame windows open this room to the outdoors.

Below: Double-hung bay windows can add space to a small room.



Warning: Some manufacturers' kits can reduce the glass area, or daylight opening, of your window. Make sure you understand how the installation will work, and ask specifically how the new window will fit in and blend with the old.

New Window Units

Some old window frames are just not worth saving. They're drafty, lacking insulation and tight joints. You can try caulking around the edges inside and out, but the bottom line is that it might be a better choice to pull the entire unit out and buy a new one. Even windows a mere 10 years old are fair game; window technology has improved that much.

Choosing an entire new window unit has other advantages. It will allow you to enlarge a window opening, group multiple windows into walls, and choose specific design elements to meet your specific needs. A bow window next to the kitchen table really adds space to a small room, and may even add seating at a crowded table. The bathroom window could be replaced with an awning window,

and a skylight or tube added to the ceiling to bring in light. Think about a grouping of windows along the wall that borders your deck, opening the room to the outdoors and creating the illusion of a continuous living area.

Energy savings can be maximized by purchasing casement and awning windows, which are generally tighter than double-hung or horizontal slide-by windows. Casement and awning windows seal by compressing the sash against the weatherstripping. When the wind blows against the window, it will seal tighter. The sashes of double-hung and slide-by windows require seals that will tolerate the abrasive action of sliding sashes, making them more prone to leakage.

New unit prices start at around \$200 for a simple double-hung unit – initially less expensive than a replacement unit, but it still has to be installed. Check with several contractors for specific quotes, but estimate another \$300 for bottom-line calculations.

Take a look at your place and ask what a window can do for you. Awning windows are great for keep-

ing out the rain and wind while allowing air to flow. They open out and down, providing an umbrella function – protecting your house while you're out fishing. Casements open out and grab the breeze, directing it into the house for ventilation. But they can also be head hazards on the exterior, sticking out in such a way that they're not a great choice over a walkway or path. Bay or bow windows can really open a room up and offer an illusion of spaciousness in an otherwise tight room.

Windows are a great investment, no doubt. Your property value will increase, and you'll save in heating and cooling costs. It's harder, though, to place a dollar value on the feeling of an afternoon breeze through the kitchen on the first warm day of spring. And it's good to know the window will close again at the end of the day, isn't it?

Jana Voelke Studelska has her own window dilemma in a current remodeling project. Her husband wants to keep the old windows as they replace them and reuse the windows when they build a guest bunkhouse. She suspects this is his way of keeping guests to a minimum.

How to Shop for Windows Energy Ratings



❖ The **U-Factor** is the most useful way to rate a window's energy efficiency. It's a measure of an entire window's tendency to conduct heat (meaning a measurement of how much heat is escaping), not just the glass but also the frame and sash components. U-Factor ratings generally fall between 0.20 and 1.20. The lower the U-Factor, the better insulating ability a unit has. An efficient window may have a U-Factor of .35 or less.

❖ **Solar Heat Gain Coefficient (SHGC)** measures how well a product blocks heat caused by sunlight. The SHGC is the fraction of incident solar radiation admitted through a window, both directly transmitted, and absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's solar heat gain coefficient, the less solar heat it transmits.

❖ **Visible Transmittance (VT)** measures how much light comes through a product. The visible transmittance is an optical property that indicates the amount of visible light transmitted. VT is expressed as a number between 0 and 1. The higher the VT, the more light is transmitted.

❖ **Air Leakage (AL)**, sometimes referred to as infiltration rating, measures the window's ability to reduce air leakage through the gaps between the sash and the frame. AL is indicated by a rating expressed as the equivalent cubic feet of air passing through a square foot of window area (cfm/sq ft). Heat loss and gain occur by infiltration through cracks in the window assembly. Most ratings note the air movement when the wind is blowing at 15 mph. The lower the AL, the less air will pass through cracks in the window assembly. Compare windows and look for ones with low infiltration numbers.

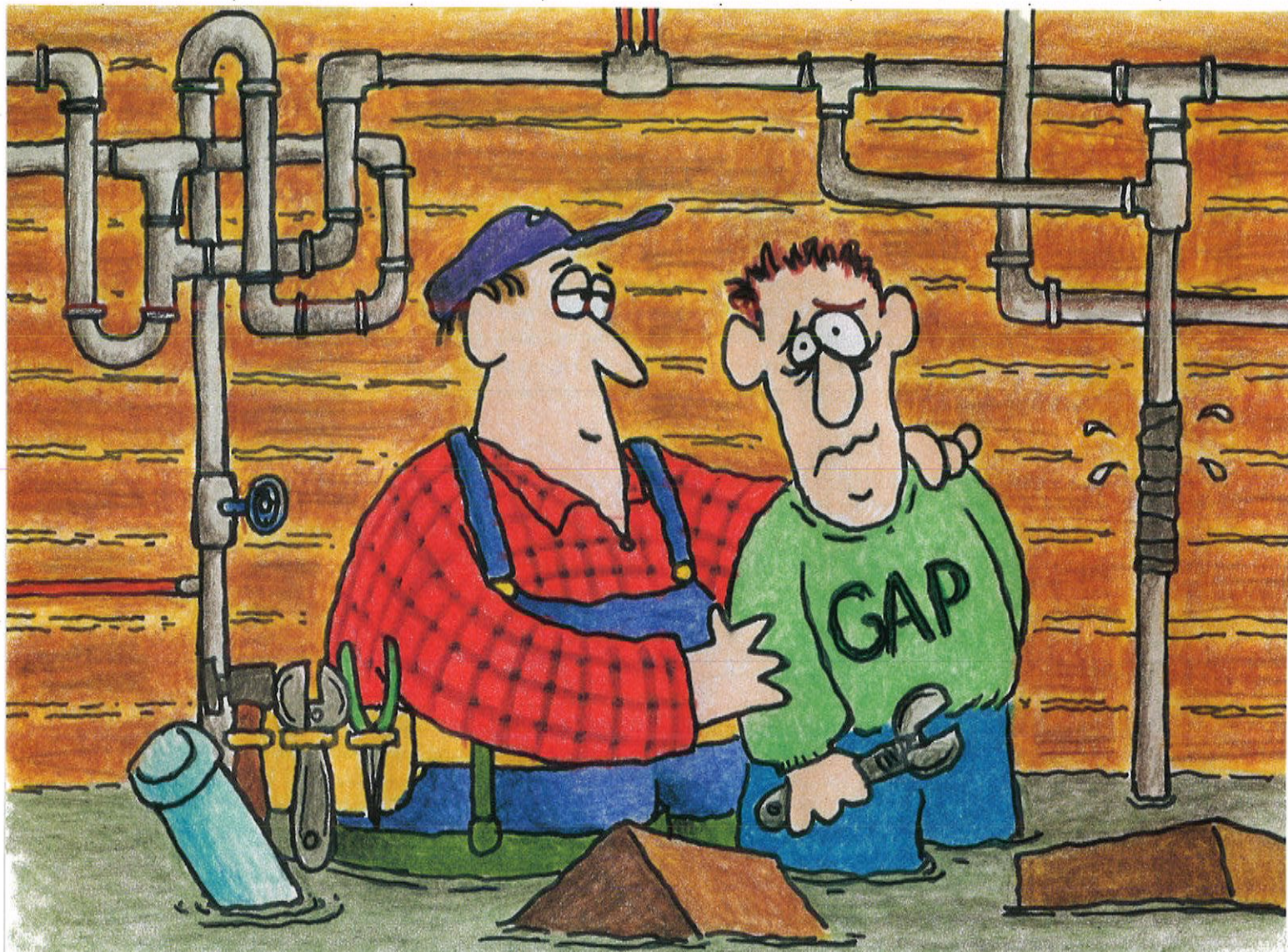
❖ **R-Value** is the measurement of a window's ability to prevent heat loss through the solid portions of the window. The higher the R-value, the less heat will be lost. Look for windows with high R-value ratings. R-values are measured at the center of the glass.

How to Shop for Windows Rating Agencies

❖ **The National Fenestration Rating Council's (NFRC)** energy performance label can help you determine how well a product will perform. It is an independent rating agency, and all major and most minor window manufacturers will carry a NFRC energy performance label. By using the information contained on the label, builders and consumers can reliably compare one product with another, and make informed decisions about the windows, doors, and skylights they buy. They can be accessed at www.nfrc.org/.

❖ **ENERGY STAR** is a program run by the Department of Energy. Windows are categorized by the energy needs of the country's different climate regions: north, south and central, referred to as N, S, and C, respectively. All ENERGY STAR qualifying windows, doors and skylights also bear a label from the NFRC. Explore this Web site: www.energystar.gov/products/windows/.

❖ You may run across references to the **Window and Door Manufacturers Association (WDMA) Quality Certification**. This organization provides ratings for architectural performance levels, such as structural performance and design pressures. While some residential windows meet the WDMA code for commercial design, the rating system is not particularly useful to homeowners.



Cabin ownership often brings out a fierce spirit of self-reliance. Mild-mannered accountants and sales reps who usually wield nothing more dangerous than a Palm Pilot are suddenly transformed into Grizzly Adams, swinging an ax and wiping off a dirty fillet knife on their jeans. Or into a woodsy Bob Villas, repairing, remodeling and renovating all weekend long. And some of these woodsy warriors among us actually have the skills and knowledge to pull off such feats of handymanism that they need to call in help only in certain cases – like electrical work – where state and local regulations require licensure to undertake a

task. They see their time at the cabin as a challenge to dig, saw, chop, drain and bevel their way to a perfectly maintained retreat.

On the other end of the spectrum are those who turn over their vacation homes to a covers-all-the-bases caretaker. These fortunate ones arrive at their lodgings to find grass cut, roof patched, utilities connected and no blinking digital clocks. They don't need to break their backs to enjoy themselves; they can happily lie in the sun and dangle their toes in the water, secure in the knowledge that all the details have been taken care of.

Most of us fall somewhere in the middle: We want to do some work ourselves, but we don't want to foul

things up. We can handle the general gadgetry of a workshop – drill, chain saw, table saw – but know when we are out of our league.

Cabin owners know that, at some point, you're gonna have to call Bob. Or Jerry. Or Bill and Sandy ... the people we trust to keep the lights on, the pipes from freezing, the roof from blowing off and our leisure time more leisurely.

First and foremost, there's Bob. He's the general handyman who takes care of problems before they happen. Or at least laments with us later, in an older brotherly way, "I was afraid that was going to happen." Bob's the guy who knows how to fix anything. Bob's the guy who has saved us from ourselves and our bungled projects,