

# GREEN REPORT

## Green Building Has Grown Up. Fast.

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**A Key Component of Any Green Building Strategy is Windows.**

**But Forget the Knee-Jerk Slogans When Spec'ing Your Green Choices.**

**Green Regs and Trend Lines.** Sorry folks, but the debate about whether green building is just a passing fad or the wave of the future is essentially over.

The reason is simple: Whether you believe green building is the only way to build...or an environmentalist plot, the dramatic rise in new environmental regulations and green building codes may have already determined your path to green. The recent AIA's *Local Leaders in Sustainability* report states that the adoption of green codes and regs is nothing short of an upsurge. Today, more than 138 cities have green-building programs, up 50% since 2007. More than 53 million Americans live in cities with green-building programs, and *all but one* of the 25 most-populated U.S. metropolitan regions have green building policies. So, even if you don't want to go green, you may very well be required to do so.

**Other Motivators.** If the trend toward green regs isn't enough to convince you, here are two other green trends that are hard to ignore. The first is the remarkable, sustained economic growth of green building. Study after study – from sources like McGraw Hill Construction and NAHB – all point to strong growth in green building – even during every year of The Great Recession. In fact, green building is the *only thing* that's consistently grown in residential and commercial construction sectors since 2007.

The second trend is more subtle, but building contractors that want to differentiate in tight markets (or in *any* market for that matter) should take careful note. That's because consumer-profile data very clearly reveals that what motivates a growing number of your prospects is not just the performance of the building products themselves but the environmental commitment of the company that makes them. Take Millennial Generation buyers, for example. These are people born between 1982 and 2001 (the oldest is 28 today). A very high percentage (83% in one study<sup>1</sup>) will trust a company more if it is *socially and environmentally responsible*; 69% of these buyers consider a company's *social and environmental commitment* when deciding where to shop, and 89% are likely or very likely to switch brands *if the second brand is associated with a good cause*.



Where are they getting their product information? Like all conscientious consumers, they are using the Web. But they are digging deep and looking not just at product performance, but at the practices of the manufacturing company.

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Are you positioned to sell to this rising crop of green buyers?

### **Green Building: A Mature Movement.**

Lately, there has also been a remarkably high level of sophisticated debate about green building products. In the early days of the current green-building movement (way back in 2004!), there was lots of interest in taking the easy steps to green, like getting rid of VOCs, and spec'ing formaldehyde-free carpet. But then there was clearly a collective recognition that building professionals needed to take more than just the easy steps. Knee-jerk sloganeering like *Don't cut down trees!* or *Ban all plastics!* quickly gave way to calm, adult discussions about how to build structures based on *performance outcomes*.

**Three Green Themes.** Today's discussions about green building typically focus on three themes: Product toxicity, thermal envelope integrity, and life-cycle analysis.

<sup>1</sup>Source: BusinessWeek, as cited in McGraw Hill 2009 Green Outlook



**Product toxicity.** Great strides have been made – often entirely independent of government regulations – to offer non-toxic or low-toxicity/low-emission products. (The reason is simple: People are *buying them* instead of their toxic alternatives!) If you compare products from a dealer’s shelves in 2003 to what’s available today, you’ll see that an entirely new breed of green products has been introduced.

**Thermal envelope.** It’s also widely recognized that of all the green things you can do to a home or structure, controlling VOCs and off-gassing should represent only a fraction of the overall effort. Why? Well, buildings will consume energy to heat and cool themselves *long after* the volatiles have flashed off. Today, the greenest things you can do to a structure really focus on two elements: Create a high-integrity thermal envelope – with a balanced air-infiltration strategy – by using carefully engineered, energy-efficient, third-party-rated building components, and look closely at the *life-cycle assessment* of products you install.

**Life-cycle analysis.** Life cycle assessment recognizes that nearly any product – even something simple like a 2x4 or a cardboard box – has an environmental impact to produce, ship, install, and use. If products are highly engineered, like HVAC systems or energy-efficient windows, the environmental impacts require a detailed look, where you weigh the performance outcome of the product to determine if it has a net benefit. The goal of green building professionals is to minimize that impact at every stage of the product’s life, from raw material extraction, manufacture, and shipping to the overall efficiency and toxicity of the product once installed, including how long it lasts, the maintenance it requires, and even the recyclability of the product at the end of its service life.

## Why Windows? Why Vinyl?

Windows can be appraised using each of the three green themes just mentioned: Product toxicity, thermal envelope integrity, and life-cycle analysis, and they deserve nothing less than very close scrutiny. That’s because windows are a key part of any green-building strategy for the thermal envelope and building shell, perhaps *the* key part, given that just replacing windows with energy efficient models can reduce household energy costs by 15%. After all, you go to the trouble of building a high-integrity thermal envelope – sealing it up carefully with taped housewrap and polybutylene flashing – only to punch gaping holes in it to accommodate windows and doors. So, you’d better have one heck of a window and door product to insert in those rough openings.

**The Test.** Ok, pop quiz. What window product comes back with strong performance in all these performance areas (and please add in low-maintenance too), while consistently garnering accolades from third-party green raters? One product consistently scores high in every assessment category and it’s vinyl windows. What’s more, of all your vinyl window choices, one manufacturer continues to deliver highest-in-class results in every performance category...and that’s Simonton Windows.

Close examination in any life-cycle analysis will reveal that vinyl scores at the top of the class of green raw materials. All of Simonton Windows’ scrap vinyl is recycled and blended back into a mixture to produce window and door components, and the rigid vinyl of its windows minimally off-gases or exudes chemicals.



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The green features of vinyl would all be for naught if the raw material weren't used in

a great building product, and that's where Simonton achieves real distinction. Simonton takes raw vinyl and – through the Company's extraordinary six decades of experience and engineering – uses it to create long-lasting, energy-efficient windows and doors.

## What Makes a Green Window?

**Energy Efficiency.** Household energy costs in most U.S. homes could be reduced by up to 15% by installing more energy-efficient windows. In fact, an average household spends more than 40% of its annual energy budget on heating and cooling costs. So, that 15% energy savings can equate to real cash, to say nothing of the environmental benefits realized by not generating the energy required to heat and cool America's homes. Today, windows account for 3.5 quadrillion BTUs in U.S. energy consumption, at a cost of \$20 billion per year. If all residential windows in the U.S. were replaced with the efficient ENERGY STAR® qualifying models, like those offered by Simonton, we'd save \$7 billion in energy costs over the next 15 years. So, there is no argument to be made that contractors should scrimp and save when spec'ing and installing windows; the *return on investment* when buying quality is fast and meaningful.

In the state of Florida, you won't find a greener builder than Greg Hardwick, who regularly works on high-end green homes. Greg's the owner of Hardwick General Contracting, and his green credentials are unquestioned, including his status as a LEED AP, a Certified Green Professional, and winner of the 2009 NAHB Green Remodeling *Project of the Year*.

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“Simonton windows and doors are a key part of our green-building strategy,” Greg said in a recent interview. “You really can't obtain any valid green certification on your projects without high-quality windows like Simonton's.”

What's more, I have never had a single customer push back because the windows are vinyl and not wood, and low-maintenance is only partly the reason for that. You have to use the products whose performance is supported by the best building science and the energy efficiency outcomes you want to achieve in the home. For those reasons, Simonton's line is the natural choice for us.”

**Green Features.** There are great Web and print resources available for learning how to read and understand ENERGY STAR® ratings and NFRC window labels (the white boxy labels on *all* Simonton windows). It's widely known that these systems help you appraise the performance metrics that cumulatively determine a window's overall quality. That said, here are some highlights, along with other notable Simonton window features.

**Component quality.** Simonton uses premium vinyl, whose thermal properties are far superior to aluminum, steel, and stainless steel, and a great deal less energy intensive to manufacture. In fact, vinyl windows require *three times less* energy to manufacture than aluminum windows, and Simonton's multi-chambered frame construction and corner fusion-welding give its products energy efficient performance that is second to none.

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**Glass Coating and Gas Fill.** These are two areas where top-performance is essential if a product is to be considered a high-quality performer, and therefore green. Simonton windows and doors are available with Low E glass, which is a transparent metallic oxide coating applied to the glass surface. The coating allows short-wave energy to pass through but reflects long-wave infrared energy for greater thermal efficiency. In summer months, Low E glass keeps cool air inside while keeping hot air outside. In winter, Low E glass keeps warm air in and cold air out. Indeed, Simonton's Low E glass blocks 84% of UV rays, which can fade carpets, draperies, and artwork.

As for gas fill, Simonton uses inert gases, such as Argon and Krypton, that are much denser than air. With these gasses acting as an insulator between the glass panes, they frustrate temperature transfer, dramatically boosting thermal efficiency.



**Edge spacers.** A telling feature to look for in windows is the spacers used between the glass panes, because when done *improperly*, this area of the window can be a real energy thief. Simonton windows and doors feature spacer systems that are uniquely engineered from highly *thermally prohibitive* materials, which also frustrates temperature transfer.

**Glass.** The glass in Simonton windows and doors can contain a *laminated*, which acts as a barrier against energy loss, and as a noise-reduction feature as well. (Simonton's laminated glass can also block over 99% of the sun's most damaging UV rays.) Simonton also has heeded the latest research on how broken windows can dramatically worsen storm damage, and the Company offers impact-resistant windows and doors (laminated glass with a durable interlayer), which stand up against stringent impact, cycling, and water-infiltration tests. Indeed, Simonton's StormBreaker Plus® windows and doors are routinely specified in coastal homes that are designed and built to meet green building standards.

**Great look.** After all the tech-talk about windows is said and done, Simonton hasn't forgotten that the windows and doors not only have to perform well, they have to look great too. Available on select Simonton window and door lines, Decorum™ by Simonton is a unique interior options portfolio that allows anyone to create distinct looks. Interior laminates provide the rich warmth of woodgrain in Antique Cherry, Maple or Contemporary Oak. Exterior coatings are available in many of today's most popular colors. Hardware in an assortment of lustrous metal finishes completes the look.

**Overall energy efficiency.** Simonton is continuously searching for ways to improve the thermal efficiency of their windows and doors, and the company's ENERGY STAR® partner

status speaks volumes about the degree of this commitment. Simonton windows are widely recognized as among the most energy-efficient products in the industry. Indeed, that performance makes Simonton's product line eligible for a range of Federal tax credits and other rebates.



## Simonton Windows Manufacturing: A Green Operation

It's no secret that consumers want to buy green products, but often just offering green windows and doors is not enough. The products have to be manufactured using environmentally conscious manufacturing processes, as well. In a plant engineered for energy-efficient operations, Simonton and its manufacturing partner, SimEx, recycle and reuse all excess vinyl that comes from their fabrication processes. This top-quality, post-industrial vinyl is reground and recycled for reuse in Simonton's window frames, or sold to other extruders for reuse, typically in pipe manufacturing. Additionally, process water is re-circulated via a "closed loop" water treatment system, largely eliminating waste-water discharge. Simonton not only runs a clean shop, they run a safe shop, too. SimEx has gone 1,175 consecutive days (as of August 2010) without a lost-time injury.

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