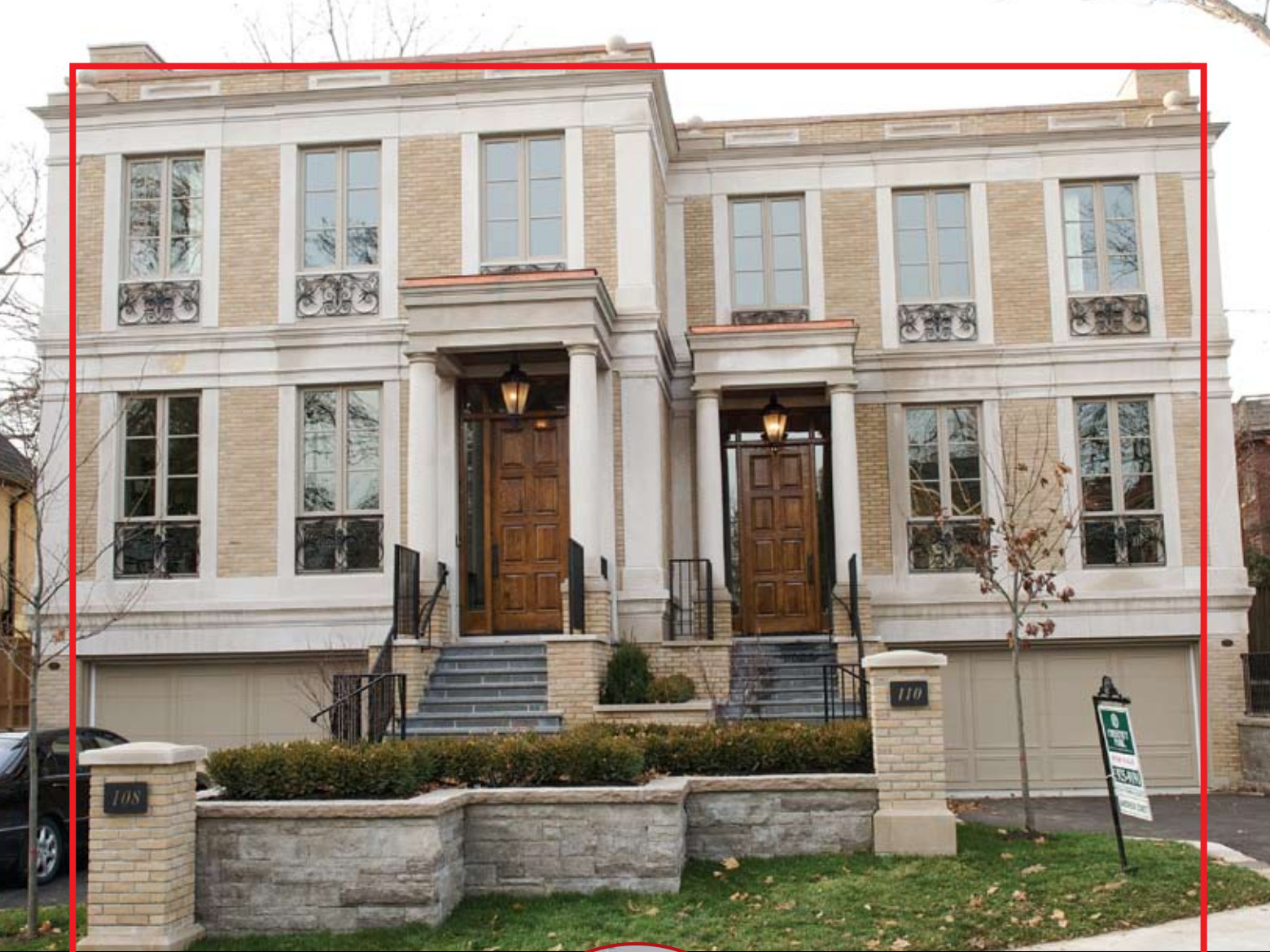


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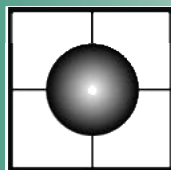


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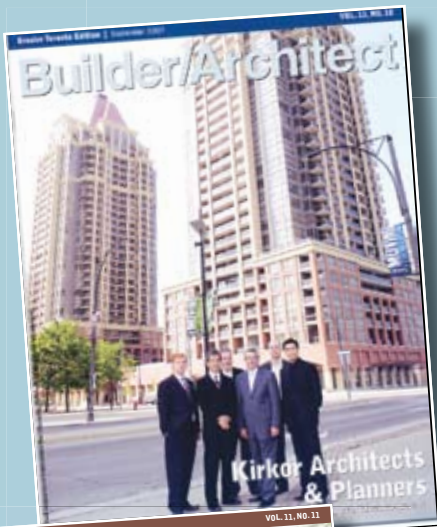
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Barbini Developments — Where Luxury Meets Green



LUXURY BUILDING AT ITS BEST

It is my distinct pleasure to feature Barbini Developments' finest work to date: 108 and 110 Poplar Plains Road townhomes. Amedeo Barbini has been delivering fine craftsmanship, design excellence and outstanding execution on construction and interior detailing of new custom-home projects, extensive renovation programs and the development of new luxury homes for specific markets for over 30 years.

The South Hill Townes are Barbini Developments' latest masterpieces: a pair of three- to four-bedroom luxury homes that sit prominently on the South Hill escarpment with outstanding views. Classically designed, each home offers approximately 4,000 square feet of elegantly finished living space on three floors. From the street, they create a stunning façade of light brick with natural cut limestone and wrought iron appointments. Inside, royal finishings including 11-foot ceilings, a salon with a fireplace, a generous dining room as well as an inviting family room spanning the full width of the house with a fireplace, breakfast area and a gourmet Barbini kitchen. Natural light floods the second floor from a dramatic 12'x6' specialty glass skylight feature that crowns the ceiling and pours light through to the main floor.

But there's more to the home than the eye can see. Conceived as a luxury offering, these townhomes were also designed to incorporate the most practical and desirable elements of green building today. The construction of these houses features the highest-quality materials and superior applications that contribute not only to meeting the Energy Star requirements, but also frequently exceeding these levels.

EXEMPLARY GREEN HOMES

The South Hill Townes are an outstanding example of green building with all the advantages of superior air quality, a healthier environment, as well as greater convenience for their owners. Their green design to levels above and beyond the Energy Star program standards provides better efficiencies and long-term cost benefits for owners. 108 and 110 Poplar Plains Road are registered in the Energy Star program.

The following features of the South Hill Townes set a new benchmark for green building:

AIR QUALITY MANAGEMENT

- Although the homes are sealed and insulated to levels above and beyond the Energy Star standards, superior air quality is achieved through the constant introduction of fresh air that provides for a complete change of air in the house up to twice a day.
- Air change is completed with a minimal loss of heat or cooling by the use of heat exchange systems including a heat recovery system (HRV) and energy recovery system.
- Bathroom fans run constantly on low speed, cycling air into a separate HRV, thus saving energy and keeping air fresh and flowing.

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- Insulation value of all exterior walls is R22 — Energy Star.
- Second-floor ceiling is approximately R82 above Energy Star; lower-level exterior walls is R12 — Energy Star.
- The garage is completely insulated using blue Styrofoam rigid insulation at exterior walls to the values of minimum R12 — above Energy Star.
- The garage ceiling is insulated using 11 inches of spray foam insulation approximately R28 above Energy Star.
- Insulation under heated lower-level concrete floor to values of R10 — Energy Star
- Foam insulation sprayed around all plumbing stacks and other penetrations through ceiling and roof — Energy Star.
- All penetrations to foundation walls are sleeved and foam sprayed to insulate — Energy Star.
- Exterior exhaust louvers are added and caulked — Energy Star.
- All interior outlets on exterior perimeter walls feature airtight electrical boxes or box covers — Energy Star.
- Fireplaces are all sealed combustion models with spark ignition system — Energy Star.
- Foam insulation sprayed into all spaces between windows and rough openings — Energy Star.
- Header wrap used on all header and rim boards — Energy Star.
- hole house wrapped in Tyvek or other equivalent air barrier — Energy Star.

WINDOW SYSTEMS

- Energy Star-labeled low-E argon squared windows designated for Zone C (arctic) climate — above Energy Star requirements for Zone B.

GREEN MECHANICAL FEATURES

- Quietside ES-labeled 92% high-efficiency dual-purpose water heater with 40-gallon preheat storage complete with recirculating pump (heat recovery ventilator) — Quietside.com
- EnerWorks ES-labeled two-panel

solar domestic hot water preheater complete with 60-gallon water heater — EnerWorks.com

- Lifebreath ES-labeled integrated hydronic air handler/HRV with ECM motor and point exhaust kit — Lifebreath.com
- Carrier ES-labeled 14 SEER 3-ton air source heat pump with Puron as refrigerant — Carrier.com model 38HDR
- Steam humidity system

GREEN PLUMBING FEATURES

- Drain water heat recovery system: a completely passive heat recovery unit to capture

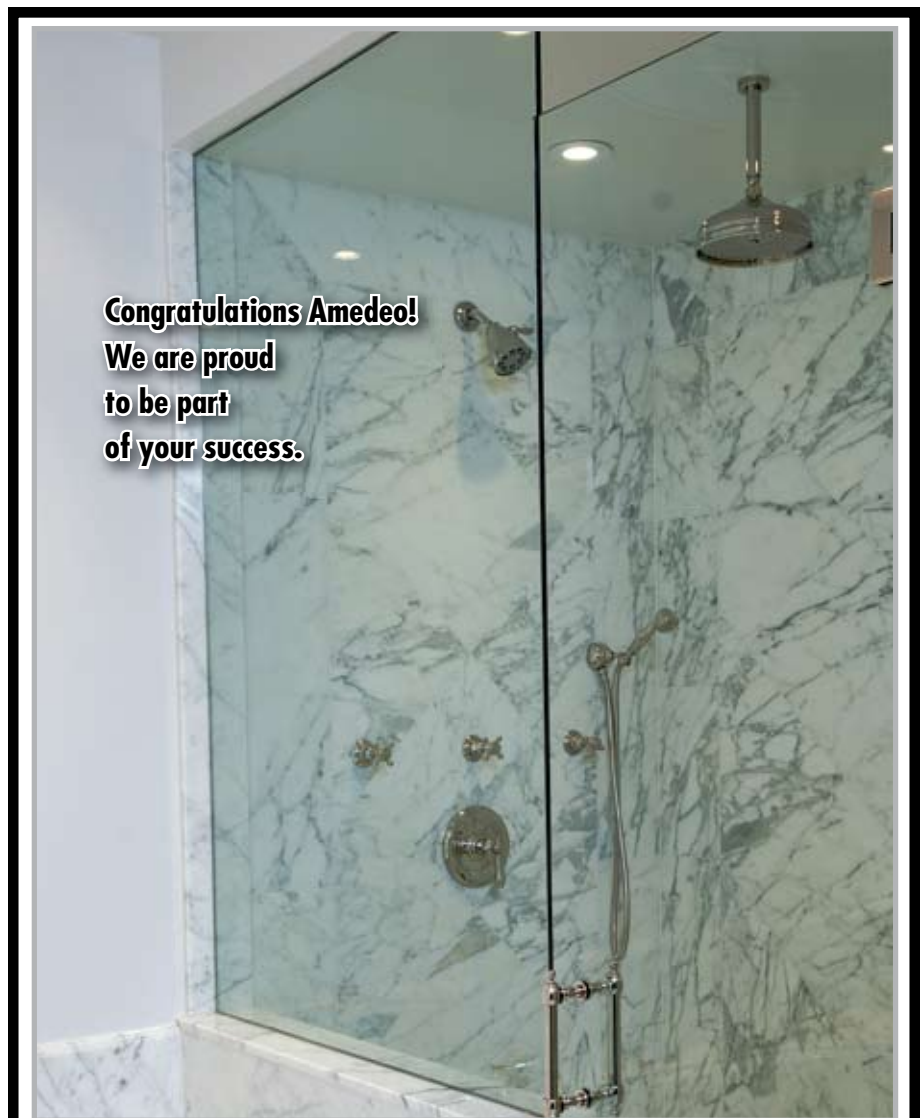
the heat from hot drainwater from showers or tubs — PowerPipe TM.renewability.com

The homes come with a full 10-year warranty or 15-year on all parts and labour in respect of mechanical systems equipment provided by Reliance Home Comfort.

I hope you enjoy reading Amedeo's story.

Until next time ...

Giulio Marinescu
Publisher



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Amedeo Barbini, President of Barbini Developments, in front of South Hill townhouses



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The Real Beauty Is Beneath the Skin

By Michael McKay

Amedeo Barbini is out to change the perception that high-end homes are inherently inefficient when it comes to heating, electrical use and water use. Beauty is often

seen as being high maintenance and the wealthy are perceived as having no real stake in diminishing their carbon footprint. His new townhomes, built at 108 and

110 Poplar Plains in the South Hill area of Toronto, are testaments to his commitment to underpinning beauty with real substance and giving luxury a solid green foundation. These homes are Energy Star rated and are strong arguments in favor of beauty being anything but skin deep.

Amedeo has been building luxury homes in the GTA for many years and, through study and consultation, has become a proponent of the green building trend, so much so that he is



putting his reputation on the line to build homes of distinction that leave a very small carbon footprint.

“People didn’t believe that creating a luxury product was in keeping with the Energy Star Home program. Luxury home dimensions were too big. There was too much of everything to be efficient,” says Amedeo. “With the Poplar Plains townhomes, I have proven that owners can have both efficiency and luxury and, what is more, both homes passed the Energy Star ‘blower test’ for nominal air leakage.”

These townhomes, sitting unobtrusively on a quiet corner of Poplar Plains Road, are equipped with the latest technologies to match the elaborate finishes that accent both the interior and exterior of the building. Both homes — one with a French provincial feel, the other with an English manor style — feature an elevator, a heated three-car garage, a beautiful crystal glass skylight in the foyer, dark granite kitchen countertops and energy-efficient appliances. The exteriors feature complete landscaping, hand-cut limestone walls and slate walkways. The discerning purchaser



can tell immediately that these townhomes were put together by craftsmen who took time and care to build to Amedeo’s specifications.

“Although the initial appeal of the buildings are their obvious attributes, which include limestone and brick exteriors, elaborate indoor paneling, beautiful functional kitchens, large bedrooms, beautifully appointed baths and large family and dining rooms, the real appeal of the homes are what’s going on behind the walls,” says Amedeo.

What you don’t see is what really makes these homes unique to the luxury home market. The walls feature R-22



PHOTOS BY GILBERT BENAMOU (G PHOTOGRAPHY)



PHOTOS BY GILBERT BENAOU (G PHOTOGRAPHY)



PHOTOS BY GILBERT BENAOU (G PHOTOGRAPHY)

insulation and are sealed to Energy Star specifications. This isn't as easy as it seems when you consider the size of the interior walls. The windows are "Zone C" rated, which means they would be effective in an arctic environment. The electric use is monitored by a Cent-O-Meter thermostat that calculates the electrical usage in kilowatt-hours and cost.

"The windows serve two purposes," says Amedeo. "Not only do they assist in the heating and cooling of the home, they also play an important role in lighting the home. The size and amount of window space plays a tremendous role in lessening the demand for lighting and consequently



PHOTOS BY GILBERT BÉNAÏOU (G PHOTOGRAPHY)

lessens the demand for electricity.”

The homes each feature six bathrooms, and therefore, water usage and heating becomes a major factor. Solar panels on the roof preheat the water on its way to a hot water tank and cut the need for natural gas heating tremendously. There is even a hot water recovery system that captures the heat from draining hot water to help preheat the water entering the home. The fixtures in each bathroom and the kitchen are low flow so that every water detail is dedicated to conservation. But, the bathrooms are anything but conservative. The bathrooms feature heated floors, handcrafted cabinetry and imported Italian marble.

“Even with the size of these homes and the number of amenities they feature, they should outperform homes that are much smaller with fewer accessories,” says Amedeo.

The HVAC system features a heat recovery ventilator that collects heat that normally leaves the home and then recycles it. The same system brings in fresh air every 12-16 hours.

“People don’t realize how important a fresh air system is health wise,” says Amedeo. “Having the old air moved out of the 4,000-square-foot home and replaced with fresh air makes the home not only efficient, but [also] much healthier.”

The homes also features some interior surprises that make them extremely inviting for those interested in communication systems. Each room is wired with speakers and a control panel that dictates the music selection and volume control. A room downstairs serves as



PHOTOS BY GILBERT BENAMOU (G PHOTOGRAPHY)



PHOTOS BY GILBERT BENAMOU (G PHOTOGRAPHY)

a hub where the home entertainment system is accessed. Another surprise is the dedicated window breakage monitors that sit unobtrusively in the corner of the rooms. These monitors are programmed to react to the sound of windows breaking and sound an alarm if one is tampered with. A home security system with cameras in strategic places allows the homeowner to monitor the home from any television set. But the real gem for the person who likes to entertain is the sound system that runs into almost all the rooms.

“You can change the music playing in one room over what is playing in another with a choice of radio station or an iPod system,” says Amedeo.

The bedrooms and living room are also prewired to accommodate large-screen TVs that would fit perfectly over the gas fireplace mantels.

We often equate luxury with wastefulness; after all, the rich can afford to be unaware of their carbon footprint. Amedeo begs to differ. He feels that all home builders should be embracing the green-building solution — especially the builders of luxury homes, as they have a greater potential to create a larger carbon footprint.

“It’s everyone’s responsibility to participate in building homes that are as environmentally friendly as possible,” says Amedeo. “What it really comes down to is, building green is basically just building a better-quality home. It doesn’t matter if it’s a mansion or a suburban tract home.”



To find out more about Amedeo Barbini, go to www.amedeobarbini.com. ■

Frank MacPhee Is New President of Durham Region Home Builders Association

Frank MacPhee of Tribute Communities is the new President of the Durham Region Home Builders' Association (DRHBA).

"It is a great honour to serve as the 55th President of the Durham Region Home Builders' Association," said Mr. MacPhee at the President's Ball, November 29, at Tosca Banquet Centre in Whitby. "I am grateful to the board, the executive and to our membership for their confidence in me to lead our association through the next year."

Mr. MacPhee told the 200 guests that the home building industry continually faces challenges and issues, and this year it will face even more with the uncertain economy.

"With the numerous issues facing our industry, we will continue to ask our local politicians to challenge the changes that make it more difficult to build and which ultimately result in increased costs to the new-home buyers," he explained. "After all, keeping houses affordable will allow many more families to fulfill their dream of home ownership and call Durham region their home."

He added, "We want to continue to encourage municipal governments to use our association as a 'consulting firm' in the planning of building-related policies. We want to keep on top of all these issues and all the other issues that may be coming our way in Durham region."

During the President's Ball, the association recognized two members for their outstanding contribution to the association. Jennifer Hurd of Reliance Home Comfort was honored with the President's Star Award for her volunteer services and dedication; and Wayne Clarke of Valiant Property Management was recognized for his expertise monitoring and fighting local development charges.



New President Frank MacPhee of Tribute Communities presents outgoing president Scott Jeffery of Jeffery Homes with a plaque.

The DRHBA also named its new board for 2008-2009. They are Scott Jeffery, Jeffery Homes, immediate past president; Rebecca Evans, Midhaven Homes, First Vice President; Jeff Goldman, Durham Homes, Second Vice President; Phyllis Dupuis, treasurer; Donna Donaldson, Executive Officer. Directors: Kathy Chateauvert, Colours & Concepts; Wayne Clarke, Valiant Property Management; Bill Collier, Royal Bank; Brian Couperthwaite; Brookfield Homes; Emidio DiPalo, Don & Son; Mike DiPalo, Millwork Home Centre; Victor Fiume, Durham Homes; Heather Hreljac, Metroland Durham Region Media Group; Jennifer Hurd, Reliance Home Comfort; John Lucyk, Lucyk Renovations; Narci Mastroianni, Don & Son Building Supplies; Joe Messina, Highmark Homes; Neil Saunders, Enbridge; Rick Siblock, The Sernas Group; Steve Snider, Steve Snider Construction; Marianne Tracey, DG Biddle & Associates; Peter Watson, Tranquility Home Comfort. Presidential appointees: Fiona Empke, Walker, Head; and Peter Saturno, Midhaven Homes.

At the event, Brian Saunders of Dufferin Concrete was the lucky winner of vacation vouchers sponsored by Metroland Durham Region Media Group.

The DRHBA would like to thank all its event sponsors that evening, including

RBC Royal Bank Real Estate Markets, Velcan Forest Products, Jeffery Homes, Tribute Communities, Appliance Canada, MOEN, Home Lumber Inc., Reliance Home Comfort, Metroland, Sandy Cook Marketing & Design and Mackie. It would also like to thank its 2008 corporate sponsors Rogers, TD Canada Trust, RBC Royal Bank, Millwork Home Centre, Enbridge, Reliance Home Comfort, Colours & Concepts, Direct Energy, The Brick, Metroland, CIBC, Homes Publishing Group and Casa Bella Windows.

A special thank you to the President's Ball committee of Jennifer Hurd, Kathy Chateauvert and Donna Donaldson.

Mr. MacPhee was raised in Sydney, Nova Scotia, and attended St. Mary's University in Halifax. His summers were spent building custom homes with his uncle, where he found his passion for the industry. He moved to Ontario in 1988 and was in awe over the sheer volume of construction in the province. He quickly landed a job working on a small site in north Whitby with Brandy Lane Homes and was hired later that year by Tribute Communities.

Tribute Communities has created many award-winning communities and has built more than 25,000 homes throughout the greater metropolitan area. Tribute Communities was founded by President Al Libfeld and CEO Howard Sokolowski, who continue to be actively involved in the company's day-to-day operations.

Founded in 1953, the Durham Region Home Builders' Association represents approximately 160 member companies representing more than 4,500 employees who share a common interest, concern and a genuine passion for the home building industry and for their customers. ■

A Penny Saved Is a Penny Earned

“A penny saved is a penny earned” is an age old adage that Amedeo Barbini’s clients are familiar with; after all, they are among the most affluent in Toronto.

When Amedeo set out to build his first Energy Star homes, he looked to Larry Brydon of Reliance Home Comfort for advice on selecting his mechanical systems, to not only meet the requirements of the Energy Star program, but also to meet the expectations of his discerning clientele.

Different clients have different priorities in today’s luxury home marketplace. They can afford to spend the money on the latest technologies, but do they really need to? Some look to first cost and return on investment; others look at carbon footprint and lifecycle durability. In selecting the system, we asked ourselves what is “smart” and worked from there.

Smart means not wasting money, and today, energy is money. You don’t “pour money down the drain” and you shouldn’t pour energy down it either. That’s where the Powerpipe drainwater heat recovery system comes in, recovering as much as 40% of the hot water energy from showers and running taps.

The heat recovery ventilators installed in the house — one integrated into the Lifebreath air handler and the other a



Venmar unit serving the bathrooms — recovers the warm air from the exhaust as it brings in the fresh outside air. “Smart” variable speed motors reduce amp draw in the air handlers fan, so running continuous does not mean running up your energy bill.

“Smart meters” are coming in 2010, so shifting to off-peak electricity is another smart move. The houses have Carrier air to air heat pumps instead of ordinary air conditioning. Set on a setback timer, they supply efficient electric heating during the off peak in shoulder months, switching to the gas boiler during peak hours

and when the temperature drops below the heat pump’s efficient operating range.

Add Enerworks solar hot water heating as the “hedge fund,” reducing exposure to energy price fluctuation while reducing the home’s carbon

footprint. With a rebate from Natural Resources Canada through their partnership with Reliance Home Comfort, the economics have greatly improved.

How smart is all that? The Cent-a-Meter in-home energy display tells you, providing real-time electrical energy consumption and cost so you know just how much you are using. After all, “You can’t manage what you can’t measure.”

And, as Amedeo’s clients point out, the smart investor “invests in appreciating assets and rents the depreciating ones.” The high-efficiency boiler is rented from Reliance Home Comfort.

A penny saved may be a penny earned, but a peak kilowatt conserved is 3 kilowatts of coal-fired generation saved ... There is the “smart green.”

Larry Brydon is a Senior Account Executive with Reliance Home Comfort and is a member of the BILD board of directors. Reliance Home Comfort provides rental and service for residential water heaters and sales, rental, service and maintenance for heating and air-conditioning equipment, as well as heat recovery system rental and service. For more information, go to www.reliancehomecomfort.com. ■





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Benefits of Modular: A Common Sense Way to Be Green

By Tom Brudzinski

Green building has become a new standard for successful residential development, and as this standard has emerged, modular home building has ridden on its coattails. This is because, since its inception in the 1920s, modular home building has developed a reputation for efficient use of materials, time and labor. Now, when buyers, builders and architects are looking for the very best ways to create green buildings, the common sense benefits of modular home building have been brought to the forefront.

WHY MODULAR IS GREEN

The essence of green building is 1) to be constructed in the most efficient manner; 2) to use products and techniques that maximize the health and comfort of its occupants; and 3) to minimize the cost to operate that facility through efficient use of important resources, such as energy and water.

It would be difficult to argue against using any of these principles in the building world. Yet, while many builders tout their green-building prowess, not all deliver green in the completed home. This gap

Since modular homes are built from the inside out, the crafts people who work on the homes can ensure there are no holes in the access panels, the vents, the sill plates, the window openings and the chases before applying exterior sheathing.



between promise and reality has come to be known as “green washing.”

Modular-home building, on the other hand, has inherently green virtues that directly address all of those principles, which allows modular companies such as



In an indoor facility, materials, building processes, crafts skills and end-product are measured for the highest quality assurance every day. Materials also are protected from moisture that could increase the chances of mold, mildew and material warping.

Haven Custom Homes to provide builders, architects and homeowners a distinct green-building advantage.

Modular practices and techniques also are highly compatible with the goals and provisions of the major independent verification programs such as LEED for Homes, the National Association of Home Builders Green Building program and EarthCraft House. Such programs use third-party inspections and tests to verify that a home is not only efficiently designed, but that it is also actually built the way it’s designed and will perform as outlined.

But just how does the modular method specifically translate into green? One major way is that the nature of this way of constructing means homes are built in an indoor facility where the building process, the materials and craftspeople are protected from inclement conditions and kept under close watch and control. Protection

from the weather significantly reduces the chances of mold, mildew and material warping and deterioration. And the level of planning and direct coordination between trades that occurs in the production facility not only maximizes efficiency, it also simplifies customization.

Modular-home building also helps preserve the site on which the home will be built. When 55% to 80% of the construction of the home is accomplished off site (in the production facility), less clearing of land is required for work areas. Therefore, mature trees and plantings are more likely to be preserved. As far as efficiency, the work on the actual site only takes a fraction of the time compared to conventional construction.

But modular is green for other reasons as well. The modular process results in a tighter building envelope that prevents outdoor air from bringing dust and airborne pollutants into the home. The skilled

While there are many ways to achieve green certification standards, modular-home building gives buyers, builders and architects a new way of looking at green.





Modular building results in a healthy, energy-efficient home built in less time and with less waste than traditional construction methods.

craftspeople who work on the homes in the controlled production environment ensure that penetrations in sheathing, access panels, vents, sill plates, window openings and chases are all well sealed before the walls are fully enclosed. The best modular builders also ensure that the adhesives, paints, sealants and varnishes used do not emit harmful volatile organic compounds. All of these modular-building practices result in a substantially higher quality of indoor air as well as a healthier living environment for homeowners.

Another inherent green benefit of modular-home building is energy efficiency. A home's energy efficiency comes from a variety of factors, including the envelope sealing, insulation and the use of efficient appliances. It also comes from critical details like the sealing of joints, use of sill seal gaskets between the foundation and the walls, extending drywall over the top plate, and use of products that won't grow

Modular-home building preserves the site on which the home will rest, so mature trees are more likely to be preserved, as modules can be hoisted over tree canopies and placed on the foundation.



mold in damp areas such as behind tubs and showers. Everything except choice of appliance can be controlled during modular-building processes, and the result is a home that is quieter, more comfortable and less expensive to heat and cool. What's more, these practices make the modular home stronger.

Modular buildings also have a distinct advantage in the green-building certification programs because they are sealed tighter than most traditional homes, materials are more efficiently used, the home site is respected and all of this is easier to certify and prove. These advantages are directly recognized by awarding points specifically for using modular construction.

It is important that home buyers work with builders/architects to choose a green program and practices best suited to the home, the region, the home site and the budget involved. But while there are many ways to pursue green building, going modular gives buyers, builders and architects a direct, common sense and efficient way to achieve the goal of a healthy, energy-efficient home, built in less time and with less waste than traditional construction methods. And that reality involves no green wash at all!

Tom Brudzinski is Director of ToME, LLC, a planning/design consultancy specializing in green-home building. Brudzinski is a consultant

for Haven Custom Homes. For more than 30 years, Haven Custom Homes has provided off-site construction through three indoor production facilities that allow the builder to serve markets throughout the East Coast. For more information, go to www.HavenHomes.com or call (410) 694-0098. ■



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The Time for Solar Has Arrived

By John Gardener and Kathleen Barnard

For several years, the housing market has been in a state of disarray with builder bankruptcies, mortgage fallout and the economy nearing or in recession — not to mention the severe spike in electricity costs. As a result, study after study has been conducted to pinpoint the full potential buying power of the consumer in order to help builders in the time-honored business of providing homes to the nation's consumers a better target of who is buying.

Meanwhile, consumers are looking for products that address the reality of increasing energy costs as well as concerns about the environment. Housing is certainly among the areas they are considering, as witnessed by growth

in green building in the residential sector.

That interest includes developing standards by which consumers can measure the efficiency of their homes, including national efforts such as the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) certification, which has expanded into home

building applications, as well as state and local incentive programs.



Solar panels today are easy to install and not the cumbersome eyesores.

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For all of these reasons, solar energy is moving towards becoming an option consumers want and builders are considering, instead of a trend concentrated in certain areas of the country and among small groups of homeowners.

According to a May 2007 study conducted for Sharp Electronics, 87% of Americans now feel that home builders should offer solar power as an option for all new homes.

Builders are responding at an amazing rate.

“Builders are becoming increasingly aware that the home buyers are changing their way of thinking about their homes,” says Chris Boyer, Chief Technology Officer for Standard Renewable Energy, which provides energy efficiency and renewable-energy solutions. “In the past, home buyers wanted to know how

The Reasons for Solar

Why are mainstream builders going solar?

- Product differentiation/competitive advantage
- Increased revenue per unit
- Marketing and public relations opportunities
- Establishes position as technology leader
- Emphasis on energy efficiency
- Environmental concerns
- It's the right thing to do

much a home would cost them. Now, they want to know how much it will cost them to operate the home each and every month. And they want to know how they can lower those costs. In other words, they want their homes to run efficiently.”

One reason solar is catching on as a solution is that the ugly panels of yesteryear are becoming a thing of the past. Some

manufacturers are even producing panels that look like roof skylights, making them not only safe and reliable, but also aesthetically pleasing.

Also, consumers today value any energy-efficiency improvements built into the home as much as they once valued the inclusion of granite countertops or other upgrades.

According to a report issued by the U.S. Department of Energy in 2007, “Consumers are much more likely to purchase a solar system from the builder as the home is being built because they view the installation during the construction stage as much simpler and safer in terms of the roof warranty.”

Perhaps the area of the home where harvesting that solar has caught on fastest is solar-thermal water heating appliances, which provide a clean, cost-effective

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solution for residential water heating and can reduce carbon dioxide emissions by 40% to 50%.

The process for installing is simple. For hot water systems, for example, the sun's energy is harnessed through solar collector panels, transferred through a heat exchanger to a storage tank and then available to provide hot water for household use. In the case of hot water, the existing hot water heater provides an auxiliary heating source and the renewable solar-heated water meets the primary demand. Meanwhile, the homeowners get an annual average energy savings of up to 40% for a full year of operation. For seasonal, off-grid installations, that energy savings can run up to 100%.

But solar thermal technology provides much more than economic benefits. It is an ideal environmental solution because

it provides easy access to green energy. Because of this, solar can earn a significant number of LEED or other conservation points while addressing consumers' conscience about green.


Solar powers much more today than hot water. But solar water heating is an ideal approach for homeowners that want to be "solarized" but don't have the available budgets or roof areas for bigger systems. The installation is quick and seamless to the occupants of existing homes, and on new construction, installation can be easily and inexpensively integrated into the standard water heating system.

Builders who embrace such innovative, cost-effective, environmentally responsible solutions as solar water heating will have great appeal to the environmentally conscious homeowner. Because water heating accounts for 20% of a home's



energy needs and produces about 2 tons of carbon dioxide emissions annually, solar hot water appliances are sure to be a welcome addition to homes — and one of the best ways to work towards LEED certification and other standards.

With the kind of challenges that face the building industry today, that can be a significant incentive for looking into solar.

John C. Gardner is sales engineer of Standard Renewable Energy, a provider of energy efficiency and renewable-energy solutions. He is a professional engineer in the State of Texas and a member of the American Solar Energy Society, American Wind Energy Association, the Houston Renewable Energy Group and a board member of the Texas Solar Energy Society. Kathleen Barnard is Marketing Manager of EnerWorks Inc., a manufacturer of solar water heating solutions. ■



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IAQ: Contractors Tap Holistic, Healthy Living for Expansion

By Adam Schuster

According to surveys quoted in Energy Star literature, consumers are willing to pay as much as \$5,000 more for a home with an advanced indoor air quality (IAQ) system. As a building professional, that means it's important to be aware of the types of systems available to improve air quality. Being familiar with the basics will allow you to maximize construction plans, create a healthy indoor environment and brand your company as an expert in holistic home design.

A GROWING CONCERN

Studies from the Environmental Protection Agency suggest that one in three

people who purchase a home have someone in the family with allergies or asthma. Families dealing with such conditions are very likely to be interested in a home built with IAQ in mind.

However, it is not just those families that are aware today of the factors that affect better breathing air. As the media raises awareness of the benefits of green building and a healthy indoor environment, more people expect home builders and architects to assist them in designing a healthy home.

Proper IAQ has been shown to:

- lessen symptoms in allergy/asthma sufferers;



A HEPA filter removes almost all of the very small particles that can get into the lungs and wreak havoc on health.



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- prevent mold from growing;
- increase the ability to perform mental tasks requiring concentration, calculation or memory; and
- control radon, a naturally occurring, tasteless, colorless and odorless gas that is the second leading cause of lung cancer.

Though we used to think of air pollution as something that occurred outdoors in metropolitan areas, a 1999 Environmental Protection Agency Indoor Environments Division report that revealed indoor levels of air pollutants can be two to five times higher on average, rising up to 100 times higher in more extreme situations than the levels outside. Ironically, one of the reasons is that today's homes are built airtight in an attempt to reduce air leaks and energy consumption. But lack of proper circulation coupled with a surprising number of indoor pollutants from materials used inside the home can lead to an unhealthy indoor environment.

As a builder, you can minimize indoor pollutant sources by carefully selecting environmentally friendly building materials, including those without the volatile organic compounds that have received so much attention today. But you can also minimize pollutions by working with an HVAC contractor to ensure proper installation of an appropriate heating and cooling system.

MAXIMIZING CONSTRUCTION PLANS

When designing a home, consider using an energy recovery or heat recovery ventilator to negate the effects of building airtight. These mechanical systems use fans to maintain a low-velocity flow of fresh air inside the house, while exhausting stale indoor air to the outside. As with any ventilation product, the fresh air intake should be located away from the driveway or laundry and furnace vents, and there should be supply and return ducts in each living area and bedroom. Ducting should be as short and as straight as possible, and you should also use high-quality materials and construction in that ducting.



A contractor shows a new homeowner how to program her new tankless water heater.

Another design element you should consider in looking at IAQ is to have a properly ventilated utility room separate from the living areas. Using direct vent appliances, such as a direct-vent tankless water heater, also promotes a healthy indoor atmosphere as well as helping the home qualify for Energy Star's Indoor Air Package program, which offers guidelines to help builders meet growing consumer demand for healthy indoor environments.

You should also consider radon-resistant construction techniques because they are not only cost efficient for homeowners while protecting occupants from this gas, they are also consistent with energy-efficient building guidelines. Such techniques include a gas-permeable layer topped with plastic sheeting, and caulking and sealing all openings in the foundation. In addition to controlling radon, these building practices improve indoor air by controlling moisture in the home.

PUTTING THE PIECES TOGETHER

Adding IAQ products to a home can be like assembling a puzzle. Not every home will have the same indoor environment needs. Some basic IAQ equipment includes:

- **Electronic air cleaners** — Electronic air cleaners charge airborne particles and then trap them in a collection section. They are available in portable or whole-house cleaners.

- **Media filters** — Three levels of air-cleaning methods are used in media filters: straining, interception and diffusion. In the first stage, straining, the larger particles are not allowed to pass through the filters. Smaller particles that make it through the straining stage collide with air molecules, causing diffusion. This causes the particles to be intercepted by the fibers inside the filter. Clean air then exits the filter and circulates through the house.
- **High-efficiency particulate arresting filters (HEPA)** — A HEPA filter removes 99.97% of particles smaller than 0.3 microns in diameter. These small particles pass more easily through the lungs and into the bloodstream, increasing the risk of illness.
- **Ultra violet (UV) lights** — Installed within the supply duct, UV lights effectively eliminate mold and mildew within the system.
- **Humidifiers and dehumidifiers** — Humidifiers add moisture to the air, while dehumidifiers remove excess moisture. Proper moisture control contributes to IAQ, while excessive moisture may contribute to mold growth.
- **IAQ monitors** — IAQ monitors measure the quality of the indoor environment you've built. These portable devices monitor temperature, humidity, pollutants and other factors to provide an overall picture of air quality and comfort.

Another critical step in this whole process, however, is to develop a partnership with a reputable, reliable and knowledgeable HVAC contractor. If you do not already work with a dependable IAQ professional, look for a member of the Indoor Air Quality Association or one who is certified by the American Indoor Air Quality Council.

Adam Schuster is the Manager of Rheem product marketing and development. For more information about IAQ or to find a qualified contractor in your area, please visit www.rheemac.com. ■

ZONE CONTROL



The MyTemp temperature control and energy management system from Home Comfort Zones delivers improved comfort and potential energy savings by providing room-by-room temperature control for residential forced-air HVAC systems. It saves energy by conditioning occupied rooms only as much as needed and conserves by reducing conditioning in unoccupied rooms. The system is unique because it monitors the temperature in every room and individually controls the airflow to every vent. The energy-savings features of the MyTemp system provide control tools for homeowners to reduce their heating and cooling energy consumption by up to 40%.

For information, go to www.homecomfortzones.com.

QUIET VENTILATION



Panasonic Home and Environment Company announced availability of its next generation WhisperWarm ventilation fans. These two new models, both of which can heat and

help improve indoor air quality, are more compact, lightweight and quieter than their predecessors. In addition to providing warmth and air ventilation, the WhisperWarm FV-11VHL2 is available with a light and night light feature. WhisperWarm FV-11VH2 is available without lights. Both models feature a new grille design to complement any home's decor, require easy installation and feature a totally enclosed condenser motor that keeps the system clean and quiet for the life of the fan.

For information, go to www.panasonic.com/ventfans.

WIRELESS TEMP CONTROL

Honeywell introduced a wireless platform engineered specifically for HVAC, featuring a Portable Comfort Control, the first handheld device that not only senses and allows homeowners to adjust for that room's temperature, but also provides information on outdoor conditions to help them make informed decisions that could



positively impact overall energy use. The new wireless comfort and zoning products use the Honeywell FocusPRO, and imbeds RedLINK Wireless Technology, whose reliability is stronger than wire with internal self-checking safeguards, tested and proven in homes up to 6,500 square feet with multiple levels. The new system makes it possible to easily zone a home without running thermostat wires to virtually

eliminate bidding risks and reduce messes needing patching or repair. The Wireless Portable Comfort and Zoning Systems are available in programmable and nonprogrammable installation kits.

For information, go to www.forwardthinking.honeywell.com.

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NEW WATER-HEATING METHOD



A new line of Rheem-Ruud indirect water heaters provides customers who use hydronic heating with a highly durable and cost-efficient option for obtaining hot water for showers, bathing, clothes washing and other domestic uses. Hot water from a boiler is circulated through a coil inside the indirect water heater, transferring heat to water stored in its tank to meet domestic hot-water needs. Constructed of heavy-gauge steel and lined with 2 inches of non-CFC foam insulation, the indirect water heater reduces standby heat

loss and maximizes energy efficiency. Five sizes are available — 30, 38, 45, 75 and 110 gallons — to meet both residential and commercial needs. Equipped with factory-installed brass drain valves, the entire STID Indirect Water Heater Series is tested in accordance with GAMA (Gas Appliance Manufacturers Association) Indirect-Fired Water Heating Standard IWH-TS-1 — March 2003.

For information, go to www.rheem.com.

NEW COLLABORATION



In a collaboration announced between Bosch home appliances and Bosch Thermotechnology Corp. (tankless water heaters), builders now have more access to the company's line of energy-efficient products. The BSH builder sales team will promote home appliances and tankless water heaters together — Bosch as the green appliances of choice, and tankless water heaters as an energy- and space-saving hot

water system. Offering a complete lineup of ECO solutions, Bosch is the two-time recipient of the Department of Energy's prestigious 2007 and 2008 Excellence in Energy Star Promotion Award, as well as the 2007 Annual Flex Your Power Award. By collaborating with

tankless water heaters, the company said it is providing the builder community a value-engineered package.

For information, go to www.boschappliances.com.

MOISTURE/MOLD RESISTANCE



In response to the growing demand for building products that protect homes from moisture and mold, CertainTeed Gypsum has added two new finishing products that complement its innovative ProRoc Gypsum Board with M2Tech. ProRoc Moisture and Mold Resistant Setting Compound with M2Tech and Mold-X10 Mold Resistant Mesh Tape create an ideal finishing system for interior walls in both residential and commercial applications.

Through independent testing, the M2Tech platform achieved the highest rating possible according to the ASTM D3273, the industry's benchmark test for mold resistance. The ProRoc Moisture and Mold Resistant Setting Compound with M2Tech is specially formulated for use in all stages of finishing, including filling joints, embedding fiberglass mesh joint tape and concealing joints, fasteners and trim accessories.

For information, go to www.certainteed.com. ■

Correction

The October issue incorrectly credited some photos in the Country Green Homes feature. Several of these images were provided by Pollard Windows Inc.

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