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DESIGN AND RENOVATION
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energy the home will use during its lifetime. Statistics differ, and all requisite numbers are not available, but on average, a typical code-built house will use 10 times more energy to heat, cool, and operate its various systems for 40 years than the amount used to build it.

Architect Katrin Klingenberg, a Passivhaus consultant with PHIUS, Passive House Institute US in Urbana, IL notes, "A Passive House can become a net-zero house with the addition of a very small renewable-energy system. It's all about the envelope. A Passive House is set carefully on the site to maximize solar gain, but solar orientation goes only so far toward achieving the Passive House Institute's performance requirements. A well-insulated envelope that's virtually airtight is the real news here. Building thick walls, incorporating airtight drywall techniques, and carefully detailing house wrap are a few ways builders and designers achieve these goals. Mechanical ventilation is a must, of course, as are triple-pane windows."

"Passive Houses, the Americanization of Passivhaus, employ an immense quantity of insulation, as much as 16" of rigid foam, between the ground and the slab," Alex said. "We have all the right tools, design and engineering experience to cope with this. Roof systems, are typically framed with I-joists, but because of their air-permeability, 'pink' fiberglass batts are seldom used. Our experience suggests dense-pack fiberglass and cellulose, and polystyrene and spray-foam insulations. We've used Icynene foam on past projects, but we may also use bio-based foam insulation should it be needed."

Alex's commitment is clear. He is quickly rising to the surface as a leader in the Green building community. He knows the technology and he's already considered an expert in the field. When you consider a renovation, or even a new home, make Alex and his team at The Alexander Group your first call. You'll be glad you did!

Excellence in architectural craftsmanship and remodeling

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The Alexander Group **GAZETTE** DESIGN AND RENOVATION

Volume 10 No. 2, Summer 2010

Great design, thoughtful execution,
total integrity for more than 30 years!

Call us for your:

- dream kitchen
- luxurious bathroom
- spacious, elegant addition
- energy efficient, high performance green solutions



Two CotY awards garnered by LEED Gold home

The Alexander Group won two 2009 CotY (Contractor of the Year) Awards. Both awards were in a home that was featured in the last newsletter; more photos can be seen at AlexanderGroup.net.

The categories are:
Green Remodeling Entire House Award: Finalist
Residential Universal Design Award: Grand

[2009 LEED Gold Certified Barnes Residence](#)



In search of a greener world: Germany leads the way



Solar Info Center, Freiburg, Germany



Green roof over Solar Center: Energy plus building; it creates more energy than it uses



Photovoltaic panels on Green Roof Passivhaus



Multi-family Passivhaus, Freiburg

Alex Dean is committed to building green. With a goal of learning why Germany is a recognized leader in this arena, Alex recently traveled to Freiburg in the Breisgau region—once a medieval city and leveled by the Second World War—to see firsthand the greenest city in Europe, possibly in the world. In this brave utopian vision of sustainable living, Alex experienced eco-housing, car-free streets and socially conscious neighbors who made this German city a shining example of sustainability first hand.

“The solutions are relatively inexpensive” Alex said. “A house built to the Passivhaus standard costs approximately 10% more than a standard house, yet can yield 80-90% savings in energy.

“The Alexander Group is embracing the Passivhaus, a rigorous, but voluntary standard which results in ultra-low energy buildings that require little energy for space heating and cooling at every opportunity. Passivhaus design is not the attachment or supplement of architecture, but an integrated design and engineering process. Although mostly applied to new buildings, I’m excited that we can incorporate it into our trademark remodels and renovations.”

Contrarians of a different sort may not hold truck with Alex’s vision for Montgomery County, but then, they don’t know the imitable Mr. Dean either.

“I want to build and renovate homes which rely on proper solar orientation, an all house envelope that is airtight, one with lots of insulation, mechanical ventilation, and one that reuses heat to cool and warm the home,” Alex explained. “I want to design and build passive homes that keep energy use low, yet be homes that are pleasing to the eye and are kind to the wallet. I think utility bills should be calculable in terms of loose change rather than dollars. I’m committed to a friendlier and more economically responsible world, and that begins with the homes we build and renovate.”

An article by Jefferson Kolle in *Fine Home Building Magazine* explains Passivhaus stan-

dard, versus other American codes:

“Unlike other programs that have multiple criteria for certification, the Passive House focuses on just three things: air infiltration, Btu consumption, and Kwh usage. The new energy-efficiency section of the International Residential Code (IRC) deals only with air infiltration, and the government’s Energy Star program, while stricter than the IRC, is still a long way from the Passive House standard.”

Kolle goes on to explain the Passivhaus in simple terms:

“Air infiltration: The Passive House standard for air infiltration can be no greater than 0.6 air changes per hour (ACH) at 50 pascals, a force per unit area, which means the house is virtually airtight. The IRC’s current energy code requires 7 ACH at 50 pascals. Energy Star requires less than 5 or 6 ACH, depending on the climate zone.

“Btu consumption: The annual energy use for heating and cooling cannot exceed 4755 btu per sq. ft. annually. The average new home built to current code consumes nearly 10 times that amount. Energy Star has requirements for appliances and mechanical systems that can still amount to nearly eight times the Passive House requisite.

“Energy usage: The maximum total energy use of the house, which includes heating, cooling, and electricity, cannot exceed 11.1 kwh per sq. ft. While there are no specific energy use standards for code-built and Energy Star homes, estimates put their usage around 30 Kwh and 20 Kwh, respectively.”

A point not commonly known, but a Passivhaus, or a home configured closely to the Passivhaus standard, is also a healthier home. It wasn’t all that long ago the Alexander Group was commissioned to re-purpose an existing home to meet the needs of its inhabitants. You may recall the Oxen Hill renovation taken on to support a family with a special needs child, which won two CotY Awards (see page 1 and the last newsletter). This house is registered in the LEED for Homes Program and is projected and certified Gold. LEED for Homes is the only green building certification process that has independent third party verification. This home is one of the first registered in the Washington DC area.

The Alexander Group team members have all received extensive green building training from both NARI, the National Association of the Remodeling Industry, and USGBC, United States Green Building Council (LEED). Alex is a Green Certified Professional GCP (NARI) and he and Brian Stone hold the designation LEED for Homes AP. Alex has been a supporter of energy efficiency and energy independence since the mid 1970s.

Passivhaus advocates say, rather than getting hung up on the amount of energy it takes to build or renovate a home, look at how much

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President
Alex Dean,
CR, CGR, CGP, GCP
LEED AP Homes

Construction Mgr.
Steve Mayberry

Design Consultant
Brian Stone
LEED AP Homes

Carpenter
Joe Norville

Office Manager
Angie Ahmed

Members of:
NARI DC Chapter

Montgomery Co.
Builders Association

Better Business Bureau

Recent Awards:
2009 LEED Gold Certified
Barnes Residence

2009 Finalist, NAHB
Green Home Award
Program - Green
Remodeling Project

2008 Master Design
Gold Award

2007 NARI
CotY Awards (2)
2007 Master Design

2007 Montgomery
Co. Builders Assoc.
Awards (2)

2006 NARI Regional
CotY Award

2006 Chrysalis

2005 Montgomery
Co. Builders Assoc.

1993 - 2004
Multiple Awards