Grün *auf* Deutsch

Germany mission highlights green building, new directions in eco-friendly development

By John Imes

Innovative technology, "green building" practices and new directions in environmentally friendly development were examined by a Wisconsin delegation to Germany.

The 108-year-old Baufritz is a firm of architects who are at the forefront of green design for family residences in Germany. Note the greenhouse canopy built into the roof of this Baufritz design.

Leaders representing companies, building associations, environmental groups and government were on hand to explore how German companies are improving environmental performance while boosting productivity and cutting costs. Our key objective was to learn about German strategies to encourage and expand green building, development and infrastructure.

Here are some examples we saw in Germany

Innovative housing development
Featured developments included mixed-use shops and houses, public green space and environmentally orientated construction. The Solarsiedlund (Solar Village) in Freiburg, Germany is Europe's most modern solar housing project, which features "energy-surplus houses" that actually generate more energy than the residents consume. Also in Freiburg, a sister city to Madison, is the Vauban development, which features low-energy homes, extensive solar collectors, co-generation of heat and power, plus an efficient tramline and convenient car-sharing program that reduces the number of private cars by 40 to 50 percent.

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High quality, low-impact, eco-friendly homes

Baufritz, a 108-year-old German company, incorporates passive solar design, heavily insulated walls, triple-glaze doors and windows, non-toxic paints and finishes, and other green-building features into each of the 240 modular homes it builds annually.

The homes use integrated climatic design concepts including proper orientation, south glazing, thermal mass, summer shading and heat recovery ventilation to reduce heating bills to only $150 per year. Hot water solar and photovoltaic electricity systems are also installed to reduce impacts from energy production and to take advantage of generous federal subsidies.

Other low-maintenance and durability features include self-cleaning windows which have a special film to facilitate cleaning by rain water and a paint and coating system for exterior siding that never needs repainting.

The healthy, streamlined interiors offer efficient floorplans, attractive built-ins, lots of natural daylighting, and feature non-toxic materials and finishes to achieve superior indoor air quality. Extensive decks and balconies extend the living area and create sunny, wind-sheltered outdoor spaces.

The company also offers a compact modular greywater treatment system called AquaCycle, which cleanses the wastewater from cooking, dishwashing and bathing and reuses it for toilet flushing, laundry, landscaping and similar purposes where drinking water is not needed. The company estimates that an average household of four to five people could save up to 25,000 gallons of water each year. By taping into greywater sources, consumers can save significantly on water and sewer bills and reduce the demand on fresh water resources.

Finally, Baufritz's award-winning and seamless concern for the environment extends to their manufacturing operations with their comprehensive resource reduction, reuse and recycling initiatives, waste heat utilization, and maximum daylighting.

Green infrastructure

German cities and developers are increasingly turning to green roofs, porous pavement, drainage swales, rain gardens and other green infrastructure to minimize, absorb and cleanse stormwater runoff. Defined as basically any roof substantially covered with vegetation, green roofs can retain one or more inches of rainfall, reduce heating and cooling costs up to 50 percent, double a roof's life, and contribute to a quieter, healthier, more sustainable urban environment. The Vauban development combines green roofs, rain water cisterns, porous pavement, and community gardens with playgrounds for children and other public places to foster social interaction. In Nurnberg, a city of about 200,000 people, more than 40 companies install green roofs and related green infrastructure projects. The use of green infrastructure has far-reaching potential for helping Wisconsin address sewer overflows and stormwater runoff.

Left to right: John Imes, Jenna Kunde, Executive Director for WasteCap Wisconsin, and Jurgen Hartwig from Freiburg Futour examine a green roof in downtown Freiburg, Germany.

New directions in eco-friendly development

What sets Germany apart is its "can-do" attitude and demonstrated ability to set environmental goals, provide flexibility and offers incentives for homeowners, builders and developers to build greener homes and eco-friendly developments.

Similarly, Wisconsin's new Green Tier law could leverage greater cooperation from builders, remodelers and developers by encouraging them to try something different to achieve environmental and economic development goals.

There is a better way to achieve superior environmental results and more productive development. By learning from German successes and encouraging our own builders, developers, policymakers and other stakeholders to rethink traditional approaches to development, we can go in a new "greener" direction — one that results in less waste, lower costs and healthier communities.

For more information about the trip to Germany, including videos and presentations, please visit www.greentierwi.info.

Green-it-yourself resources

- Baufritz homes at www.baufritz.de (available in German only)
- SunClean self-cleaning windows at www.ppgsunclean.com
- AquaCycle modular greywater treatment system at www.pontos-aquacycle.com
- Solar Region Freiburg at www.solarregion.freiburg.de and www.solarsiedlung.de
- Vauban model development at www.vauban.de/info/abstract.html
- Design Coalition specializes in eco-friendly design and integrated climatic design approaches, 2088 Atwood Ave., 608-248-8846, www.designcoalition.org
- Greenroofs at www.greenroofs.com
- Solar technology and renewable energy at www.wifocusonenergy.com
- Use the Green Built Home™ program and online resources. The Green Built Home Checklist has over 220 ideas to save money, protect our natural resources and improve your family's health, safety and comfort. A Green Remodeling Checklist will be available in early 2005. To learn more about Green Built Home visit www.greenbuilthome.org ■