



Biobased Products Can Play a Major Role in Stimulus Weatherization Projects

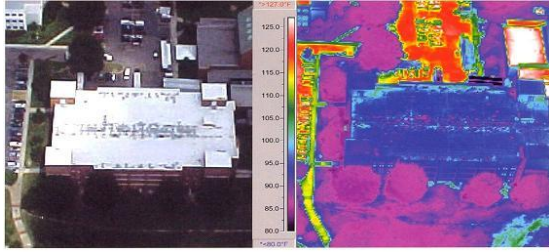
The economic stimulus package announced by the Obama Administration seeks to "weatherize 75 percent of the federal buildings." Likewise, many state and local governments as well as private citizens want to make their buildings more energy efficient. Soy biobased products, from insulation to various building exterior coatings, are readily available and proven to perform well for these efforts. They offer the benefits of being cost effective, energy efficient, environmentally friendly and play a role in reducing the nation's dependence on foreign oil.

ROOFING

Take for example heating/cooling loss through roofs. Infrared photos dramatically demonstrate the significant effects of urban heat islands in cities. These green roofing systems can combine both plantings of vegetation and roof coatings. One such coating is soy-based roof material ELMS®, manufactured by [Green Products](#), which can be used in combination with vegetation or by itself.



Officials at Chicago's famed Shedd Aquarium estimate that using three different soy-based products on their 36 acres of roofing systems will save the institution nearly \$220,000 in heating and cooling costs over 20 years.



Infrared photos dramatically demonstrate the significant effects of urban heat islands on buildings. Soy biobased products are saving thousands of dollars in heating and cooling costs on buildings.

Chicago's famed Shedd Aquarium uses three different ELMS products on its 36 acres of various roofing systems. Officials there estimate that over 20 years the institution will save nearly \$220,000 in heating and cooling costs - that amounts to about \$11,000 a year.

Shedd also used another soy biobased exterior coating from the same family of products to protect its famous terra cotta exteriors from deterioration due to Chicago's harsh climate.

Other Buildings that have used ELMS roof material

Federal Buildings

- Federal Court Houses
 - Trenton, NJ
 - Keaton Federal Building Rochester, NY
- VA Hospitals
 - Wilkes Barre, PA
 - Fayetteville, NC
- US Customs Department Philadelphia, PA
- GSA Office Chicago, IL
- Federal Prisons
 - Fort Dix, NJ
- Social Security Administration Woodlawn, MD
- Government Print Office Washington, DC
- Department of Defense
 - Navy Seal Training Alameda, CA
 - Naval Facilities Command Gulfport, MS

State, County and Local Buildings

- Wilmington, DE Housing Authority
- Media Court House (PA)

- School Districts
 - Christina (PA)
 - Brandywine (PA)

INSULATION

Another product that is helping government agencies, businesses and residents to "weatherize" buildings is soy-based spray foam insulation. The insulation seals a structure's thermal envelope, making it more energy efficient, healthier, more comfortable and durable than traditionally insulated homes.



Spencer Municipal Utilities in Spencer, Iowa has seen a 50 percent reduction in energy costs since Iowa Spray Foam Insulators installed soy-based insulation in their head-end room.

Product manufacturer [BioBased Technologies®](#) estimates that when paired with other responsible building components, BioBased Insulation® can reduce monthly heating and cooling bills by up to 50 percent. The company conducted a case study of two Social Security buildings located in similar climate zones to compare the energy usage and to determine the effectiveness of soy-based insulation compared to fiberglass insulation. They found that the building insulated with BioBased Insulation® used 28 percent less energy per square foot than the building insulated with fiberglass, even though the fiberglass-insulated building was 1,600 square feet smaller. During the coldest months of the year, the BioBased®-insulated building was even more efficient, using 45 percent less energy than the fiberglass-insulated building. During the months February, March and April, the larger,

BioBased®-insulated building used less kilowatts per hour than the smaller, fiberglass building, peaking at 74 percent more efficient during the month of March.

REAL LIFE EXAMPLES

Molly McCabe, a Bainbridge Island, Wash. resident and owner of **A Kitchen That Works**, a sustainable kitchen and bath design firm, completely deconstructed her 2,000-square foot modular home in 2006. She recycled it and built it back up using sustainable design principals and materials including BioBased Insulation®. McCabe had the product sprayed on all of the exterior and plumbing walls and says that the investment has "paid for itself" already. Last winter, when temperatures dropped to an unusually cold 27 degrees and 15 inches of snow covered the island, she lost power to her home. After over seven hours without heat, the temperature inside only fell one degree because of the effectiveness of the building envelope which included soy-based insulation. In addition to the energy efficiency



Molly McCabe redesigned her Bainbridge Island, Wash. home using sustainable design principals and materials including BioBased Insulation®.

qualities, its positive impact on indoor sound quality was an unexpected, added bonus. When the home audio system was hooked up and Ave Maria was played, McCabe says it nearly rendered her to tears because the sound was so beautiful, despite having hardwood floors and car decking for the ceiling treatment.

Stamats Communications, Inc., a multi-faceted media company based in Cedar Rapids, Iowa, was hard-hit by flooding in June 2008. They had to gut their 32,000-square foot office building down to the studs after the floods. According to Senior Controller Rich Hanson, "It provided us with an ideal opportunity to really tighten up a building that was originally built back in the 1930s." He explained that employees often complained about drafts near outside walls and many used space heaters in the winter. Using soy-based spray foam insulation has eliminated the draft issue and they have actually been able to lower the heat and eliminate space heaters. Hanson said the product is helping them to achieve LEED certification, which they expect this summer, and the fact it is made from a homegrown product (soybeans) is an added bonus.

Dan Thies, owner of **OPN Architects**, also in Cedar Rapids, insulated his home with soy-based spray foam. He envisions a day when the product will become the "industry standard" because of the potential for energy savings and the fact that it can help companies achieve LEED certification, not to mention that it's made in America.

Another architect who sees the potential of soy-biobased products and has a deep interest in sustainable design is Kevin Monson, president of Neumann Monson architects in Iowa City, Iowa. He used soy-based spray foam insulation in the **Integrated DNA Technology** Building in Coralville, Iowa. The two-story building is an office, research and manufacturing facility and the insulation was brought in as a retrofit to fix an insulation problem. According to Monson, his firm looks for "anything we can do to make buildings more earth friendly and reduce dependence on petroleum products. Being from Iowa, using a product made from soybeans is a real natural for us." The soy insulation is "a great product that's locally available, greener and more sustainable – it's a win, win and we're very excited about it." His firm plans to use the insulation in future projects because it creates a "tighter envelope for buildings, meaning that less energy is lost."



Spencer Municipal Utilities, the utility company for the City of Spencer, Iowa is another example of success with soy-based insulation manufactured by [Demilec](#) and installed by Iowa Spray Foam Insulators of Carroll, Iowa. Don Baxter, Water & Construction Manager, explained that before the soy-based insulation was sprayed, the air conditioning in their second story head-end room (where communications equipment is housed) couldn't keep up. Now the air conditioning has no trouble keeping the room cool and he estimates that energy costs have been cut by 50 percent. Another one of their head-end rooms (a fiber optic center) now maintains a consistent temperature of 62 degrees all the time - without heat or air conditioning. Additionally, Spencer Utilities has five steel 12x20 foot buildings that house the wells used for the public water supply. Before they installed the soy-based insulation they had to run heat in the buildings all the time to prevent freezing. Now they are able to go without heat all winter long and rely on the heat from the pumps alone to keep the

buildings warm enough.

Finally, under the leadership of Mayor Dan Coody, the [City of Fayetteville, Ark.](#), has also made great strides in improving energy efficiency through the use of soy-based insulation. Two city fire stations are insulated with BioBased® Insulation and they plan to use it in future projects as well.

Read more about [Weatherization and the American Recovery and Reinvestment Act.](#)

Read more about [Stimulus Funding for Alternative Fuels and Vehicles Through Clean Cities.](#)