



## The Shape of Innovation: InsulBloc® solves design challenge for award-winning education project

High-performance NCFI Spray Foam insulation enables  
“model for high schools of the future”

### PROBLEM

Duane Harver, the lead architect behind the innovative new King's Fork High School in the City of Suffolk, VA, had a problem.

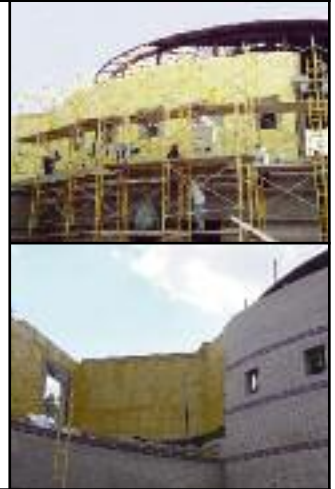
His concept sought to create an optimal learning environment for teachers and students, and was drawing rave reviews for how it capitalized on the most modern, advanced research into educational ecology.

Harver's design made extensive use of curved exterior walls, which meant that conventional rigid, flat insulation systems simply wouldn't work. Building an uninsulated school was obviously not an option, and nobody wanted to abandon such a superb concept.

### SOLUTION

Harver turned to Ayers Insulation, a Virginia Beach-based contractor, for a solution. Ayers recommended the use of NCFI Polyurethanes' InsulBloc spray polyurethane foam (SPF) insulation. InsulBloc, developed expressly for masonry cavity wall insulation and damp-proofing applications, is a high-performance, high-density closed-cell system that provides a highly efficient air barrier and vapor diffusion retarder. InsulBloc assures higher actual R-values per unit thickness than can be achieved with any other type of commercially available insulation.

Most importantly for Harver's project, SPF can be applied to any design shape. This not only assured the success of the King's Fork project – it also frees architects, contractors and specifiers everywhere from restrictive concerns about innovation and shape in their designs.



### RESULTS

Thanks to Ayers and NCFI, the King's Fork High School project was a success on many fronts.

Suffolk Public Schools and its students are now learning in an outstanding new facility. The National School Boards Association and Virginia School Boards Association both recognized the project, with one awarding body calling it “an educational and architectural model for high schools of the future.”

Ayers Insulation earned a prestigious national award for the project, as well. In January 2006, the Spray Polyurethane Foam Alliance (SPFA) awarded Ayers second place for Best Commercial Insulation Application at its Annual Industry Contractor Awards national convention in Tucson, AZ.

Frank Hughes, who managed the InsulBloc application on the King's Fork project, was gratified by the recognition, saying that “the new King's Fork High School isn't just a beautiful facility, it's an important one. We're honored that we were able to help the school system and architects find a solution to a critical challenge. InsulBloc was ideally suited to this task, and we're finding that more and more people are beginning to understand the benefits of spray foam insulation technology.”

NCFI Polyurethanes President Swanson Snow said the company was proud to have contributed to such a worthy project. “Ayers Insulation is an outstanding company, and Frank Hughes has been in the polyurethane foam business for over a quarter of a century. Suffolk Public Schools is clearly looking to the future as they think about educating their children, and we're glad that our product was able to help them in the process of building this outstanding school.”

Harver, who's also Vice President of Norfolk, VA-based Rodriguez Ripley Maddux Motley, describes King's Fork as a state-of-the art facility that represents the most modern thinking in high school design. “We worked closely with Suffolk Public Schools to develop a learning environment built around a decentralized, flexible ‘grade house’ concept. This school will serve the community well for years to come, and we're thankful to Ayers Insulation and NCFI Polyurethanes for their contributions through an innovative product.”



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## About NCFI InsulBloc®

InsulBloc, a Seamless Insulation, Air Barrier and Dampproofing system for masonry walls from NCFI Polyurethanes, is an ideal technology for builders, architects and other specifiers in the commercial construction industry, affording unprecedented design and performance benefits from the drawing board through the life of the facility.

**Design.** Since InsulBloc is a spray application, it's infinitely adaptable. This means it conforms to any shape and reaches into the deepest corners, affording architects the freedom to design without worrying about how their visions can actually be executed.

**Efficiency.** InsulBloc outperforms every other insulation system on the market, providing operational energy (and cost) savings of up to 40 percent. The spray application bridges and seals construction gaps/cracks and joints forming an insulation membrane that boards just cannot match.

**Green.** In addition to its dramatic energy savings, InsulBloc results from environmentally friendly chemical and production processes and is entirely non-toxic once applied. NCFI Polyurethanes was awarded the 2004 Stratospheric Ozone Protection Award, an international award from the EPA for their work in developing these environmentally friendly systems.

**Comfort.** InsulBloc is seamless, providing a highly efficient air barrier, eliminating drafts and repelling dust and pollen. It is a damp-proofer which blocks unpleasant and harmful moisture intrusion. And it also serves as an effective noise damper, keeping ambient noise outside where it belongs.

## Technical

InsulBloc is a 2.0 lb/cu ft density, closed-cell spray polyurethane foam (SPF) that provides higher R-value per unit thickness than can be achieved with any other type of commercially available insulation. SPF is produced when two chemicals, polyol and an isocyanate, are mixed together in the presence of catalysts and other additives using a specially engineered spray applicator system. Applied by trained applicators, the chemical reacts, expands and cures in-place, forming a seamless insulating and dampproofing membrane. Masons then install the brick facing. An air gap between the brick and spray foam allows the foam to function as a seamless drainage plane.

## About NCFI

From the carpet you walk on, to the warmth of your home in winter, to the sofa you and your family watch television on, NCFI Polyurethanes has been working hard since 1963 to make your world a more comfortable, secure, affordable place to be. In fact, our products touch millions of lives each day – we're the company responsible for so much of the comfort, safety, and convenience that you take for granted. But even if you aren't aware of us, rest assured that we're very aware of you, and we're constantly working to make life easier and better for you and your family.



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