Massive CoreStates Center Arena Under Construction in Philadelphia

By Gregory J. Lepore

Faced with Unit Masonry, Glass and Gleaming Metal Panels with Energy-Saving Insulation Tucked Inside Its Cavity-Wall Masonry, This Construction Project Is a Design for the 21st Century

Steel work for Philadelphia’s new CoreStates Center sports arena rises 140 feet high—almost 30 feet higher than its sister stadium, the CoreStates Spectrum. Construction contractor L. F. Driscoll of Bala Cynwyd, Pa., is scheduled to complete it for the 1996-97 sports season. It will replace the Spectrum as the new home of the Philadelphia Flyers hockey team, the Philadelphia 76ers basketball team and other sports events, like the U.S. Figure Skating Nationals, already scheduled for January 1998.

Ed Snider, owner of Spectator, parent company of the two CoreStates arenas (and the Flyers), says the Center will be “one of the finest arenas in the world. It will not be quite as intimate as the old Spectrum, but it will be much more, providing amenities and pleasures to the sports spectators.”

The adjacent 27-year-old Spectrum, which is one of the most heavily booked arenas in the nation, will continue to host concerts, circuses and other entertainment. It also may add some new sporting events, like indoor soccer and other college and pro sports.

Both arenas will stand side by side in the 60-acre CoreStates complex in South Philadelphia. The gleaming CoreStates Center, currently under construction, and brick-faced Spectrum will provide a combined total of 40,000 seats. This boomer capacity will put the city in a strong position to bid for events like the Republican or Democratic National Convention in the year 2000, national championships (the NCAA Final Four is a possibility) and playoff contests.

Construction Moving Along

With a September 1996 opening proposed, construction is proceeding apace—and there’s a good deal still to be done. Rodrigo Rodriguez, estimator and project manager for Lepore/Mark, masonry contractors on the job, is proud of the assignment. “It’s a lot of work,” he says. “We’ll be busy, and that’s good news.” After moving slowly during completion of various preliminary steps, “working space has opened up. We are increasing our crew and the work will go much faster,” Rodriguez predicts.

The center was designed by architects from the “sports wing” of Ellerbe Becket in Kansas City, Mo., nationally known for major facilities of this kind. The design utilizes giant glass walls (a total 32,000 square feet of glass), metal panels and masonry, including cavity wall construction between the masonry facing and the masonry backup construction. Approximately 100,000 square feet of Foamular® extruded polystyrene insulation is being supplied by UC Industries, Inc. of...
Parsippany, N.J., a subsidiary of Owens-Coming. Four towers, one in each corner, will feature masonry veneer with brick backup. The base of the building is masonry.

**Well-Insulated Cavity Walls**

From the bricklayer’s point of view, cavity wall construction is a logical evolution from venerable, solid stone or masonry buildings with foot-thick walls. No one can afford construction like that today, and it’s not necessary. Cavity wall not only looks just as good as solid, but also has a number of advantages. The exterior wall is a relatively thin masonry or stone veneer. Its lower mass costs less and imposes less loading on the building.

Conservation of energy, which means avoiding heat loss and infiltration of air, is an important part of today’s exterior design consideration. Cavity wall construction with a four-inch veneer, properly sheathed, flashed and fitted with extruded polystyrene insulation boards, can provide better insulation value-with less air infiltration-than a foot of masonry.

When Lepore built the original Spectrum in 1967, the oil embargoes of the 1970s had not yet made energy conservation an everyday concept. There was little consideration given to the need for cavity wall insulation. Today, modern building design recognizes the thermal value of insulation in the cavity wall.

At the new CoreStates Center, wall cavities are fitted with two-inch thick extruded polystyrene
insulation board (R value = 5.0 per inch of thickness at 75 degrees Fahrenheit). Inclement exterior weather conditions will not affect the comfort of spectators inside the building and heating and air conditioning of the building will be efficient and more cost effective.

Moistureproof Insulation Is Key

One essential consideration in successful cavity wall design is moisture-resistant insulation. The cavity wall concept accepts the fact that moisture infiltration will occur. Moisture penetrating the facing materials are designed to trickle down inside the cavity, puddle at horizontal surfaces that are also flashed areas, and then drain away harmlessly through weepholes.

Foamular takes care of this because its dense, closely packed extruded polystyrene cells offer exceptional moisture resistance. And it saves energy by retarding heat transmission and its high resistance to moisture absorption assures long-lasting R-value, even in the presence of dampness. The rigid foam is also lightweight, durable and impact-resistant.

Insulation Placement

Project Manager Rodriguez is strong on logistics. The materials-ordering process is a critical one, he says. “You make sure you prepare your workers in the field so they don’t have to scratch their heads and think; they can be actually producing. You give them all the tools and nec-

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necessary materials and instructions so they can continue to produce efficiently. You make sure to get the materials there on time.”

Not a Bad Seat in the House

CoreStates Center’s unique oval design provides interior sightlines second to none. They will be no obstructed views from any seat in the facility. And that’s a 21,000-seat total for 76ers basketball games and concerts, where the whole floor can be used; 10,500 seats for Flyers hockey games.

Though nearly twice as large as the next-door Spectrum arena (about 750,000 square feet vs. 410,000 square feet), the $210 million center will have only about 3,000 more seats. That’s to provide the “much more” that owner Ed Snider is planning. At the new center, more space and attention are being lavished on premium services: more private entrances, more custom-built private and contained seating, roomy lounges, dedicated food services.

Of the four spectator levels, two are devoted to premium seating. Arrangements include two superbox sections for 84 patrons each, 10 club boxes (up to 150 people), 26 balcony suites for 12, and 100 luxury suites with 12 to 14 seats. Most of the suites are already spoken for, at prices said to range from $75,000 to $135,000 a year.

The CoreStates Center, building on 27 years of stadium expertise since the more spartan Spectrum was constructed, offers many fan-friendly conveniences. Among them: 30 concession stands on the two general-seating levels, and over twice the number of restroom facilities and ladies’ lounges found at the Spectrum.

One of the essential materials he’s providing is the pink Foamular board—about 100,000 square feet of 2-inch material.

“I’ve always liked the exterior cavity wall system because it avoids problems with water penetration,” Rodriguez says. He adds that “it’s smart to go with boards that are 16 inches high, or at least score to 16 inches, because they complement the masonry coursing and the anchor tie system. Anchor ties are an important part of masonry cavity wall construction because they secure the unit masonry facing to the building.

While there are many variations of unit masonry, anchor tieback systems, the concept in use at CoreStates Center is an adjustable “hook” (the veneer anchor) and “eye” (the backup CMU receiver) system spaced 16 inches on center. “Eyes” (or the female ends of the masonry anchor ties) are coursed into the backup CMU and have ends that project from the face of the backup CMU (blockwork). As the unit masonry facing over the backup CMU progresses, masons insert 16-inch-insulation boards between these projecting “eyes,” Rodriguez says. “The unit masonry veneer anchor ties has ‘hooks’ that physically engage the ‘eyes’ or receivers. The vertically extended legs of the hooks actually hold the insulation in place and allow for vertical adjustability.”

About the Author

Gregory J. Lepore is president of Dan Lepore & Sons Company, Philadelphia. The company is a masonry contractor with a national reputation. Major projects for the firm include the Philip Hart Senate Office Building in Washington, D.C., restoration work at New York City’s Waldorf-Astoria Hotel, Liberty Place I and II, Bell Atlantic Headquarters, Blue Cross Tower and the Pennsylvania Convention Center and the Marriott Convention Center Hotel.