Green is viewed as good for healing at the new Children’s Hospital of Pittsburgh, scheduled to open in May of 2009. The use of environmentally friendly systems and materials is a top priority for the hospital’s management and the architectural firm Astorino, of Pittsburgh.

But the colors and design of the nine-story, 900,000-square-foot Hospital Building—the Clinical Services Building—are intended to convey something more to the patient and visitor than a single-minded attention to health-care excellence or environmental awareness. The architects, employing groundbreaking research methods in an effort to foster a vibrant healing environment, have sought to create a dynamic health-care center that serves a “transformational” role in pediatric care.

In keeping with these aspirations, Astorino and the hospital’s leadership are employing paint and coatings materials that reflect sustainability, and aesthetic and health/environment priorities. Thus, vibrant, rich color goes in step with low-emitting, high-performance interior paint and coating materials and highly durable exterior coatings. Significant exterior paint and coatings used include factory- and field-applied finishes based on fluoropolymer resins, and zero-VOC (volatile organic compound) paints for major portions of the building interior. The products are supplied by PPG Industries Inc.

The hospital is seeking a LEED Silver designation for the complex’s 10-story, 300,000-square-foot John G. Rangos Jr. Research Center, and a LEED Certified designation for the Clinical Services Building from the U.S. Green Building Council.

In all, the hospital complex encompasses nine buildings on a 10-acre site, with 1.5 million square feet of usable space. The centerpiece of the hospital campus is the Hospital Building, which houses inpatient and ambulatory patient services and patient diagnostic and testing services. The building was designed as a distinctive city landmark, Astorino says, visible from various vantage points around the city.

In addition to the focus on performance and eco-friendliness in materials, the hospital design features significant natural interior lighting, reduced pavement surfaces, extensive “greening” of parking areas, and a rooftop Healing Garden. The availability of bike racks and showers encourages employees to commute by means of pollution-free “alternative transportation.” The project also con-
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lounges for family and staff to recharge their batteries, and a “Healing Garden” to tap into the restorative powers of nature for patients and their families—different interpretations of the “energy” metaphor. The patient need for personal space led to the inclusion of more private rooms, room separations, and fabrics and colors deemed more “homelike,” in response to the underlying need for “control.”

The research results actually dictated a specific palette of colors, with bright, yet soft, shades used in both the interior and exterior of the building, reflecting the key metaphor of “connection” and the corresponding dimension of “escape” through color. The colors run a wide range, with shades such as Grass Green, Robin’s Egg Blue, and Sunshine Yellow reflecting the diversity of emotional needs—from stimulation to the goal of relieving stress. Softer, calming shades of the palette are planned for the Intensive Care Unit and the chapel, with more revitalizing, spring-like feel and the exuberance and brilliance of a summer day.

The coatings component

PPG, based in Pittsburgh, participated in the hospital project with a set of paint, coating, and glass products marketed under the company’s EcoLogical Building Solutions™ umbrella.

The products include two types of fluoropolymer-based coatings for building exteriors—Coraflon® and Duranar® factory-applied finishes. The coatings were applied to metal storefronts, sunshades, and panels that are elements of the curtain wall. Colors chosen include vibrant yellows, greens, and various shades of blue.

The Duranar coatings are based on polyvinylidene fluoride (PVDF) resin chemistry. The Coraflon finishes are based on a different type of fluoropolymer chemistry and can be used to produce brighter, cleaner colors in a wider gloss range, PPG says. The resin chemistry is called FEVE, for fluoroethylene vinyl ether.

The factory-applied fluoropolymer coatings are used on coil or extrusions, and typically are part of a two-coat system of corrosion-resistant primer and fluoropolymer topcoat. Some colors include a clearcoat over pigmented coats in a three-coat system. The coatings are based on resins that are 70% fluoropolymer, and are characterized by a high degree of resistance to chalking, fading, chipping, and peeling. PPG says the products meet or exceed AAMA 620/621 of the American Architectural Manufacturers Association and the performance requirements of AAMA 2605-05, voluntary specification, performance requirements and test procedures for superior-performing organic coatings on aluminum extrusions and panels.

For the Children’s Hospital project, the Duranar coatings color selections included Arctic White, Bonnie Bell Blue, and Haze Blue. The Coraflon color selections were AZC Yellow, vibrant, bolder (translation: energizing) colors in playrooms and waiting areas.

Astorino says design elements that distinguish the facility communicate the dynamic, vibrant, and alive impression of the facility. This is conveyed in particular by the main “Transformation Corridor” encountered upon entering the hospital. The corridor is conceived as an expression of the evolution of healing, represented by design elements that suggest the four seasons. The walkway begins with tones, patterns, textures, and materials that evoke autumn, then progresses through the winter, spring, and summer stages—first cooler, then on to a
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Parrot Green, Process Blue, and Flemish Blue. Fluoropolymer coatings supplied by The Valspar Corp.—from the company’s Fluropon® Premiere product line—were used for two colors specified by Astorino for curtain-wall extrusions and panels on the hospital exterior: an orange and a purple. Valspar says the Fluropon Premiere colors make use of bright pigments to produce more intense and vibrant colors than the company’s standard line of Fluropon coatings.

John Sysko, project architect with Astorino, says the guiding principle for the project exterior “was to impart a colorful, imaginative, and playful building image.” Also important to the context in which the hospital was to be built was “a reduction of the overall building mass that was mandated to reconcile the large institution to the smaller neighborhood scale.” Thus, specifications called for a variety of bright, long-lasting, durable colors.

“The selection of architectural coatings was critical in attaining the desired exterior aesthetic,” he says.

In addition to decorative and protective paint and coatings on the building exterior and interior, Astorino specified reflective roof coatings and add-in pigments to architectural precast and cast-in-place concrete.

Most interior walls of the hospital were painted with PPG’s Pure Performance®, a zero-VOC, 100% acrylic, waterborne product characterized by very low odor. The product is offered in flat, eggshell, semigloss, and primer grades, has received the Green Seal® Class A certification for environmental standards, and has been certified by the Master Painters Institute (MPI) as a top-quality paint, the company says. The product is reported to offer strong hiding properties and a high degree of adhesion, washability, and mold and mildew resistance.

Sandy Wasik, Astorino interior designer, said the use of paint and coatings for the hospital interior reflected a primary concept of “transformation.”

“Every individual entering Children’s Hospital expects to go through some sort of transformation,” Wasik says. “It’s not necessarily about transforming from sick to well, because that’s not always the outcome, but about moving from an unbalanced state to a balanced state. The hospital is to be child/family friendly, secure, and energizing. This is to be achieved by providing a colorful, functional, playful, low-stress atmosphere. Proper interior planning is essential, but the aesthetics affect the outcome tremendously.

Wasik also said the “green” aspect of the building “was very important to the owner, architect, and users of the facility.”