

Making Way For the New

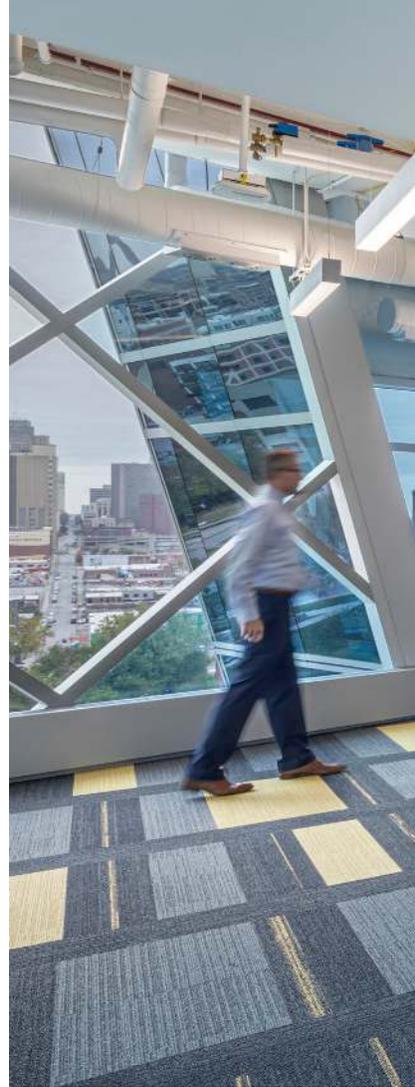
New Children's Mercy Research Institute
Combines Science and Architecture



BSA

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After six years of visioning, three years of designing and planning, and 32 months of construction, Kansas City, Mo., is now preparing to welcome an iconic addition to its landscape. Children's Mercy Research Institute (CMRI), one of only 31 exclusively pediatrics-focused research facilities in the United States, is a nearly 400,000-sq-ft, 9-story structure. Its presence is a testament to the importance of translational medicine: research aimed at determining the relevance of pediatric diseases through novel discoveries, bringing this research expeditiously from lab to patient and back again.

Science Based Design

Clinicians, scientists, nurses, psychologists, research assistants, study coordinators, sociologists, mathematicians, pharmacogenomists, genomic informaticians and others will inhabit the new pediatric research institute. "We are all working toward a common goal of discovering the cures, treatments and

devices that will help the kids who are in our care," says CMRI Senior Director of Research Development Kieran Pemberton, Ph.D. "We wanted to move away from the old-style, closed-off research laboratory concept. The new design is focused on collaboration," he adds. "Ideas will be shared, and discussions will take place between groups throughout the labs and in all of the collaboration spaces."

The contemporary, all-glass facade of CMRI readily identifies the new research institute from the traditional brick-and-mortar design of the existing hospital and surrounding medical centers. BSA LifeStructures Director of Architecture Jacqueline Foy, LEED AP, says that the very design of the building—both exterior and interior—communicates the forward-thinking nature of the collaborative research that will take place within. "The curvature of the building's exterior contributes to the illusion of a DNA helix spire," she explains. "The full-height monumental staircase connects the entry level to the top of the building and every floor in between. The



building's north and south facade designs each show a literal DNA pattern, a rare mutation."

Wind Considerations

BSA commissioned a wind study based upon guidance from structural engineer BDC and MEP engineer Brack & Associates. Foy says, "The building's unique design and shape led to this project-specific wind study. The research tower's shape has become sensitive to wind pressures and the harmonic response of the structure to these wind pressures. This is particularly true at the iconic stair tower and the fly-by curtain wall." Foy adds that the wind study also contributed to efficiency, sustainability and economy in the design of the structure's curtain wall framing. Relatedly, the design and construction were reviewed to allow for the safe and efficient dispersal of building exhausts to ensure that there will be no ingestion of exhausts into fresh air intakes or concentrations in public spaces.

ABOVE | The carpet pattern on each floor has an artistic interpretation of DNA sequencing in different color schemes. This assists with clear wayfinding throughout the building.

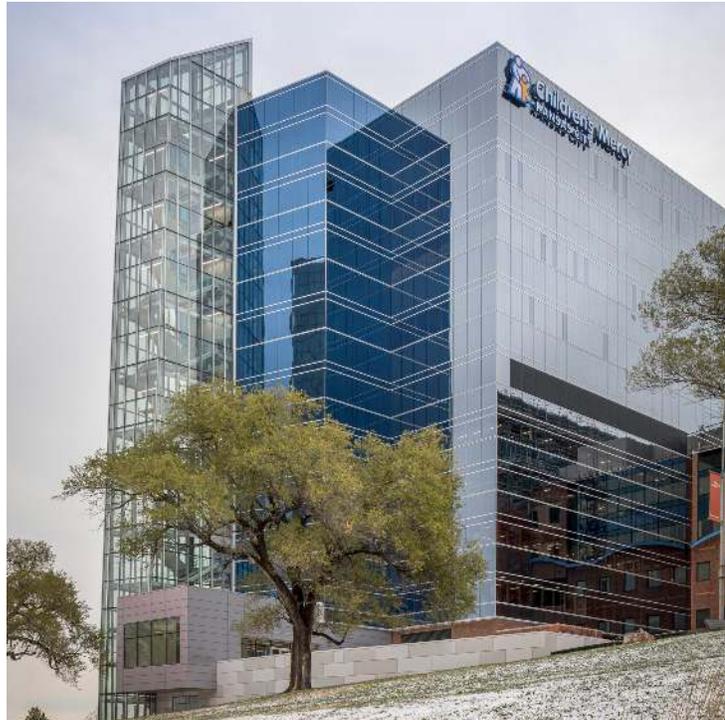
BELOW | An actual DNA sequence from four patients is incorporated into the exterior lighting design of the building. The sequence represents a DNA mutation discovered by Children's Mercy.



Energy-Conscious Design

The structure's glass curtain wall system has been designed to conserve energy use. Foy says, "It was especially important to consider energy impacts at the monumental stair. Without the ability to have clear-vision glass, the structure of the stair would be lost, and the connection to the institute's purpose would not be on display. However, ignoring the energy requirements would mean no one would ever use this space. Working alongside partners that understood the importance of balancing energy efficiency with aesthetics allowed for the true vision of the building—and specifically the monumental stair—to be realized." The curtain wall system is 12 in. in depth primarily to accommodate additional insulation. It is notably thicker than standard commercial curtain wall systems that measure 7-10 in. deep.

The ultimate aim of Children's Mercy Research Institute is to accelerate the time and lower the corresponding cost that currently exists in transitioning from pediatric research to treatment. This new facility is a significant step in this direction.



ABOVE RIGHT | Throughout the building, investigators are immersed in light that filters through the DNA code designed into the building's facade.

BELOW RIGHT | The stairs within represent the movement of a double-stranded DNA helix rotating on its axis.

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