

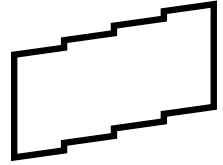


TOGETHER, WE

# ENHANCE EXPERIENCE & EMPOWER PEOPLE

THE CULTURE OF PEDIATRICS





# CHILDREN DON'T ARRIVE IN HEALTHCARE SPACES ALONE.

**04** FACETS OF PEDIATRIC HEALTH **16** HOW WE HELP **24** CASE STUDIES

Embracing the whole child means surrounding them (and their adults) in support. More than treating illness, pediatric healthcare systems work to build well-being for children and families. This means considering four interconnected facets that impact the experience they have when they come through your doors. Across campus, building, and space types, these four facets can help ease the journey, uplift the spirit, connect to nature, and remove barriers to good health.

# FACETS OF PEDIATRIC HEALTH

New diagnostic and treatment technologies continue to positively change health outcomes for kids even as unprecedented factors impact their physical and mental well-being and development. When it comes to creating healthcare spaces for children (and their adults) there are four facets every pediatric health system should consider:

1. Access to Health
2. Building Well-being
3. Empathetic Environments
4. The Journey





## **ACCESS TO HEALTH**

- Convenience
- Close to home
- Health equity
- Accessibility
- Telehealth

## **EMPATHETIC ENVIRONMENTS**

- Positive distractions
- Alleviating anxiety
- Sensory needs
- Emotional conversations

## **BUILDING WELL-BEING**

- Biophilia and other aspects of salutogenesis
- Connection between health & sustainability

## **THE JOURNEY**

- Arrival, orientation, transition
- Intuitive wayfinding
- On/off pathways
- Space hierarchy
- Waiting time should not be wasted time

## ACCESS TO HEALTH

Access, education, trust, digital literacy, and environmental factors can impact health equity for children. Leveraging data, research, and community engagement, health systems can help every child attain his or her full health potential.

Convenience helps lower a barrier. Access to urgent care and ambulatory centers help kids get the treatment they need close to home. Co-locating specialties (including things like social and legal resources) can help further support families. Providing flexible clinics that can be used by multiple departments (dermatology one day, allergy the next) help expand services at a single site. Utilizing a system of clinical prototypes—adaptable to site, community, staff, and patient needs—can help health systems meet their goals for growth, standardization, equity, and brand experience. Access to family accommodations during long-term hospital stays helps keep families close during a sick child's most vulnerable time.

The pandemic helped normalize telehealth. As telehealth evolves, it increasingly offers opportunities to learn and collaborate with global experts.



*Thoughtfully incorporating opportunities for telehealth in your facilities helps give patients access to global experts.*



*Children don't walk into healthcare spaces alone. Space to accommodate parents and family is important.*



*A lowered desk helps a child feel confident and in control during an often overwhelming process.*

## BUILDING WELL-BEING

As organizations dedicated to improving children's health, it's critical for pediatric health systems to view their facilities as partners in their mission to generate good health.

Designing salutogenic (health-generating) environments means considering five aspects that help decrease stress and give people the resources they need to be resilient.

- 
- **I Understand:** Sense of Coherence
  - **I Restore:** Relaxation Response
  - **I Can:** Self-efficacy
  - **I Relate:** Biophilia
  - **I Shelter:** Prospect & Refuge
- 

These five aspects are important because each of these experiences decreases patient stress and replenishes the resources available to cope with their illness. For each element of healthcare spaces we ask how the space can foster these salutogenic experiences and provide the resources a patient needs to heal. These elements often take physical form in elements like gardens, landscaped views, daylight, and easily navigable environments.

Using sustainable, resilient design strategies can positively impact children's health at an individual, community, and global level. Such strategies address electrification, air quality, opportunities for movement, and biophilic design elements like shapes, forms, textiles, and lighting that evoke the natural world. They can include simplifying material palettes to reduce potential chemicals of concern or selecting materials that eliminate the use of hazardous substances in their production.



## EMPATHETIC ENVIRONMENTS

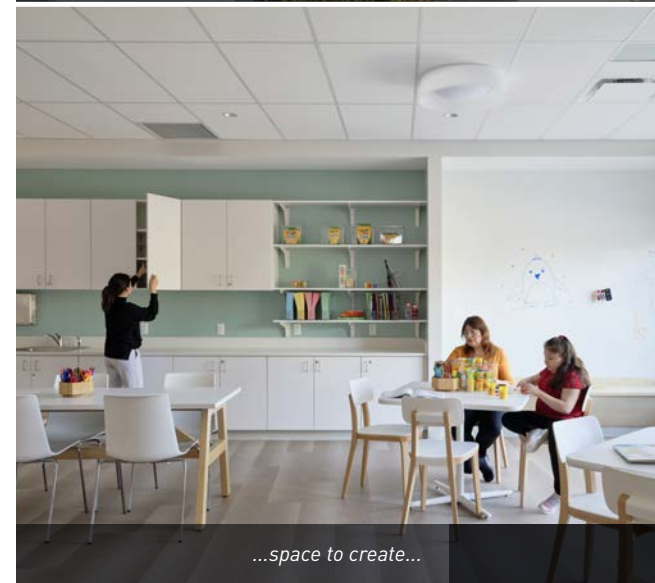
Heightened emotions accompany children and families into healthcare settings. Some of the most hopeful, and fearful, conversations of a patient's life take place in these spaces, so it's important to anticipate the range of physical and emotional needs people will have in these environments.

Anticipating a moment of joy can change the trajectory of a child's healthcare experience. This can mean providing opportunities and amenities for children and families to safely explore, play, connect to nature, and experience moments of wonder. When designing a space, consider neurodivergency and the range of sensory needs children have. These include sight and touch as well as self-soothing behaviors like pacing or rocking. Anticipating these needs can help kids feel calm and comfortable and ready to engage with their healthcare teams.

While new medical discoveries, advancements, and innovations continue to positively impact children's health, there will inevitably be bad days, bereavement, and emotional healing within pediatric healthcare spaces. Setbacks happen and it's critical that architecture and design be used to craft spaces where bad news can be received and processed.



*Different spaces can address different respite needs like, a breath of fresh air...*



*...space to create...*



*...and space to relax and reflect.*

## THE JOURNEY

Self-efficacy (“I can”) is a critical part of enhancing confidence and well-being. The ability to navigate facilities as people arrive, orient, and transition to their destinations helps restore a sense of control. Small wins—like clearly seeing a help desk or finding the elevator—can deliver dopamine boosts that uplift people on their journey to checkups and procedures.

Families making their way to appointments may have children in strollers or wheelchairs. They may have an IV pole. They may speak a different language. Understanding and addressing these needs helps eliminate stress. Strategic use of architectural and design cues like hierarchy, wayfinding, color, lighting, and graphics help families intuitively find where they need to go.

The process for receiving care should be thoughtfully considered so the experience feels less scary. This can mean separating pathways for patients and providers and strategically placing medical equipment in treatment and exam rooms. Creating zones within care rooms for staff to work makes interactions easier and more efficient. Pediatric patients often visit multiple specialties. Keeping exam room layouts consistent across facilities helps create continuity and a sense of familiarity for pediatric patients.



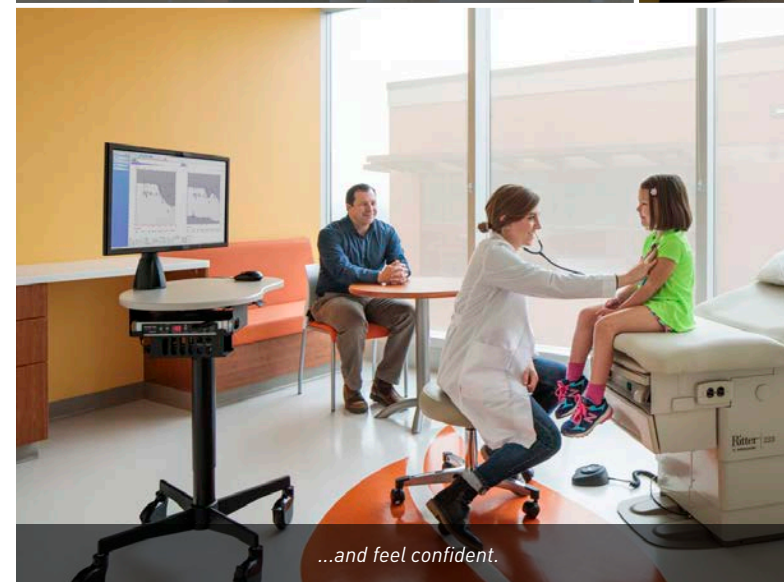
*A child's ability to self-navigate through a healthcare facility is empowering and can instill confidence during a vulnerable time.*



*I can find my way...*



*...make my own choices...*



*...and feel confident.*

**“I can” is  
powerful  
medicine.**



# HOW WE HELP

There's nothing worse than an elegant solution to the wrong problem. Using an empathetic approach, a proven engagement process, and evidence-based design, we deploy a broad spectrum of lenses to every design challenge.

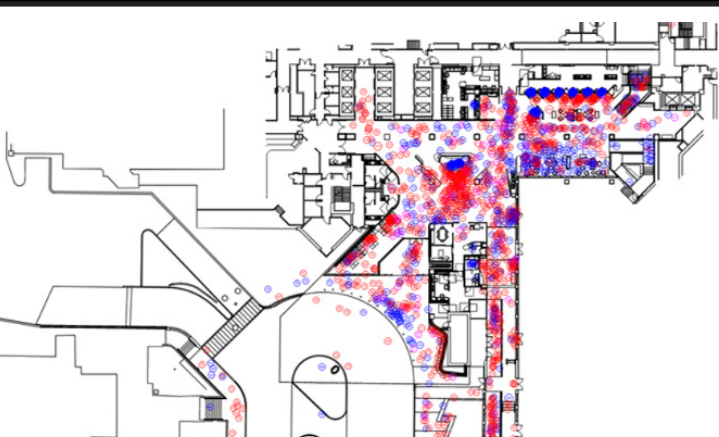
1. Research
2. Accurate Data
3. Sustainability, Well-being, & Resilience
4. Computational Design & Fabrication
5. Environmental Graphic Design



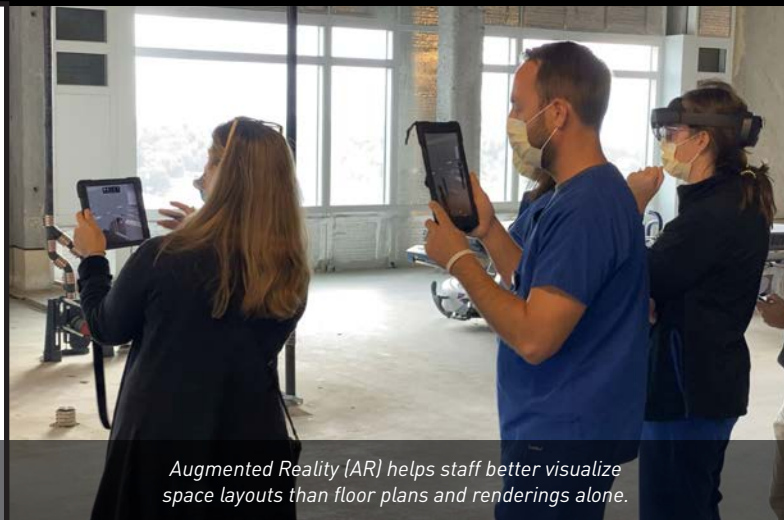
## HOW WE HELP

# RESEARCH

We form research partnerships directly with our clients and closely collaborate to track hypotheses. We are committed to research deliverables and our agility leads to results being delivered within a month of research being completed.



Heat mapping helps research teams determine pedestrian and vehicular traffic at hospital arrival zones.



Augmented Reality (AR) helps staff better visualize space layouts than floor plans and renderings alone.



SHAN JIANG  
DIRECTOR OF RESEARCH  
PH.D



KIRSTEN MILLER  
AIA, EDAC



ANGELA MAZZI  
FAIA, FACHA, EDAC



ZAHRA DANESHVAR  
EDAC

Our Director of Research helps set up a consistent framework and consults on methodologies.

Our research team, made up of medical planners, interior designers, and project architects, is embedded in every project. Our evidence-based approach permeates everything we do and allows us to build on what we learn from project to project.

Our research capabilities include:

- Preoccupancy studies including shadowing, observations, interviews, focus groups, and surveys
- Lean design strategies
- Literature reviews and trend analyses
- Research Sprints around existing data to leverage real-time research input as we make design decisions
- Use of data from GBBN's previous research and longitudinal studies
- Prototyping
- AR/VR testing of design concepts
- Space Syntax Analysis to study how spatial layouts influence human behavior, movement, and social interactions.
- Post-Occupancy Evaluations

Notable research experience includes:

- Two EDRA Certificate of Research Excellence (CORE) awards for our research studies
- Thirteen research studies currently underway, including five Post Occupancy Evaluations
- Collaborating on research studies with:



HOW WE HELP

## ACCURATE DATA

Unlocking data hidden within your facilities can reveal operational efficiencies, potential revenue streams, and equipment life expectancy.

Our In4mation division helps you unlock and understand your space management data so you can:

- **Mitigate risk** by defining heavy traffic areas to prioritize cleaning routines, automating facility requests and tracking inventory of critical supplies that may have a habit of walking away or being thrown away too soon.
- **Improve process** by linking maintenance and repair to work orders and building drawings. You can see what was done when (and who did it) and how often the same “fix” is being made so you can retire the underperforming equipment in your equipment inventory.
- **Reduce costs** by preventing unplanned equipment fails during critical periods through scheduled maintenance. The right digital tool enhances your ability to optimize equipment use. It also improves labor efficiency by reducing travel time through a comprehensive list of safety supplies, tools, parts, and travel routes for each inspection.

HOW WE HELP

## SUSTAINABILITY, WELL-BEING, & RESILIENCE

We strive for site-specific, regional approaches to design informed by research, rigorous analysis, and local conditions. Our in-house experts in energy modeling, efficient building envelope systems, and biophilia, as well as experts in Passive House, WELL, Fitwel, and LEED certification work closely with clients to make sustainability, wellness, and resilience decisions early when they can have the most impact.



HOW WE HELP

## COMPUTATIONAL DESIGN & FABRICATION

Working with manufacturers, fabricators, and builders to understand the processes that shape the material realization of our designs, we identify unexpected opportunities to create compelling projects that surpass our clients' expectations. Our computational design and digital fabrication program enables us to make more efficient use of materials, reduce waste and discover savings. We can quickly iterate design options in response to client concerns, and produce more reliable cost estimates by accounting for material and installation costs from the start of the process.



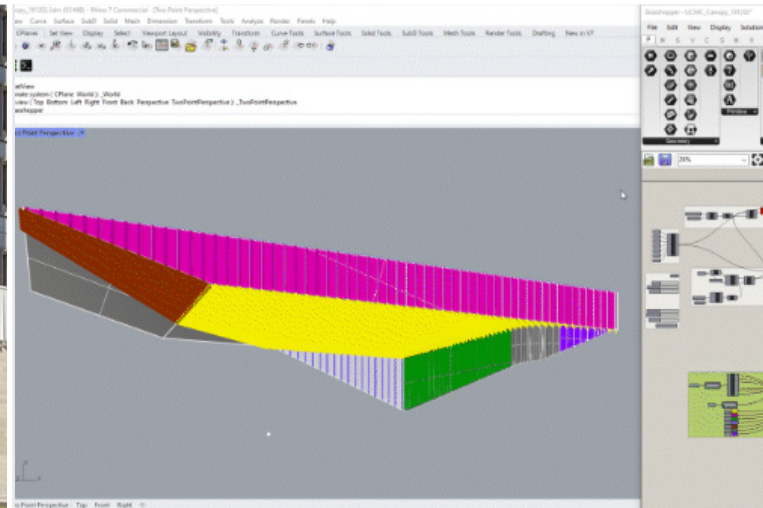
LEARN MORE HERE ABOUT HOW  
WE USE DIGITAL TOOLS LIKE  
AUGMENTED REALITY

HOW WE HELP

## ENVIRONMENTAL GRAPHIC DESIGN

Successful and seamless brand integration happens at the beginning of a project. Combining imagery, wayfinding, and storytelling with architecture and interior design does more than help people find their way around, it helps them feel at home. Experiential design—through graphics, signage, bold statements, and subtle details—helps connect people to their surroundings in powerful and memorable ways.

Holistic donor recognition solutions, surfaced early, allow potential donors to understand where they can positively impact the quality of care and the environment. We support clients' capital campaigns through renderings and narratives and by providing virtual tours so potential donors can experience the space during the design process.



# CASE STUDIES

From clinical to outdoor spaces and everything in between, we work with clients to enhance how children (and their adults) experience pediatric care.

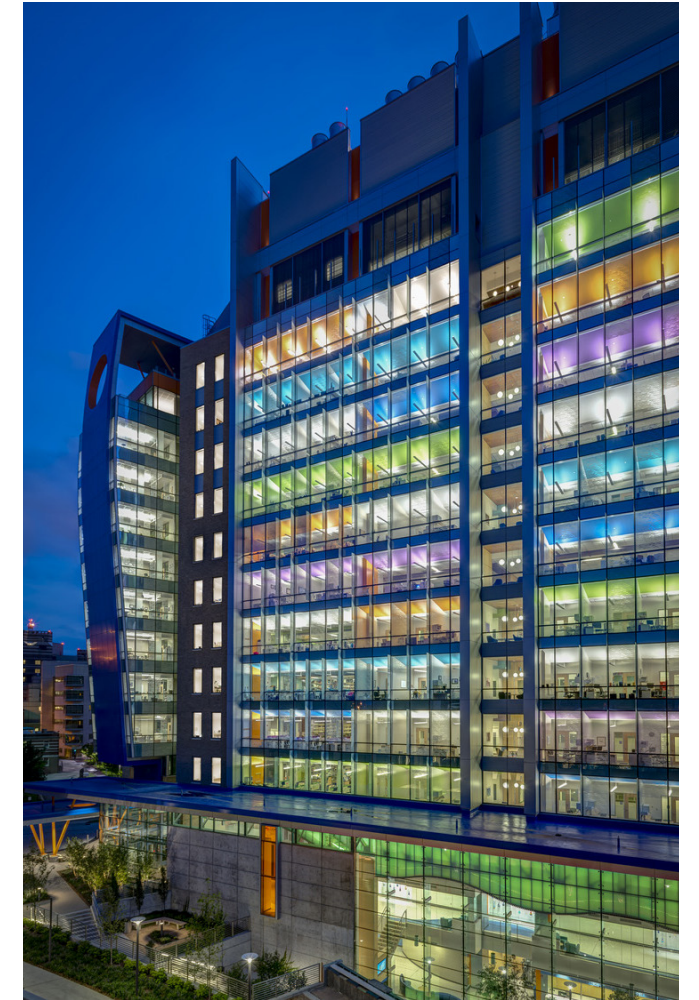


## Cincinnati Children's Hospital Medical Center

### OVERVIEW

Ranked #1 in the nation by *U.S. News and World Report*, Cincinnati Children's is a world leader in pediatric health. For over 30 years they have turned to us for masterplanning and design solutions to help them grow and achieve their goals.

From their very first research tower to their Clinical Sciences Pavilion, we've helped researchers at Cincinnati Children's shorten the distance between a medical breakthrough and a patient's bedside.



Why does Cincinnati Children's turn to us again and again? Because by understanding their history, we are agile and creative partners in designing their future.



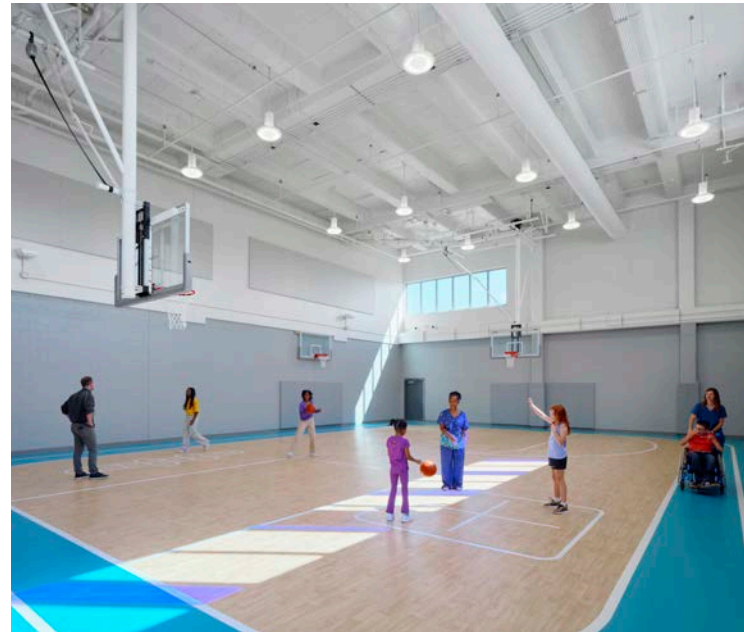
We've partnered with Cincinnati Children's to ensure inpatient and outpatient clinics—like those for their Pediatric Heart Institute or Cancer and Blood Diseases Institute—set a benchmark for quality of care.

Across their main campus, we've worked with Cincinnati Children's to ease the patient journey with an environment that is world class—from their main concourse, to their emergency departments, to unique spaces that help speed healing.

Cincinnati Children's Hospital  
Medical Center

## WILLIAM K. SCHUBERT M.D. MENTAL HEALTH CENTER

Modern life bombards us with stressors. Coping with them can be particularly hard for children and adolescents, especially those with pre-existing behavioral health issues. When kids and teens need services to help manage a mental illness or life crisis, they need a supportive behavioral health setting.



"The building is a beacon of hope."  
—Dr. Tracy Glauser, Associate Director of  
Cincinnati Children's Research Foundation

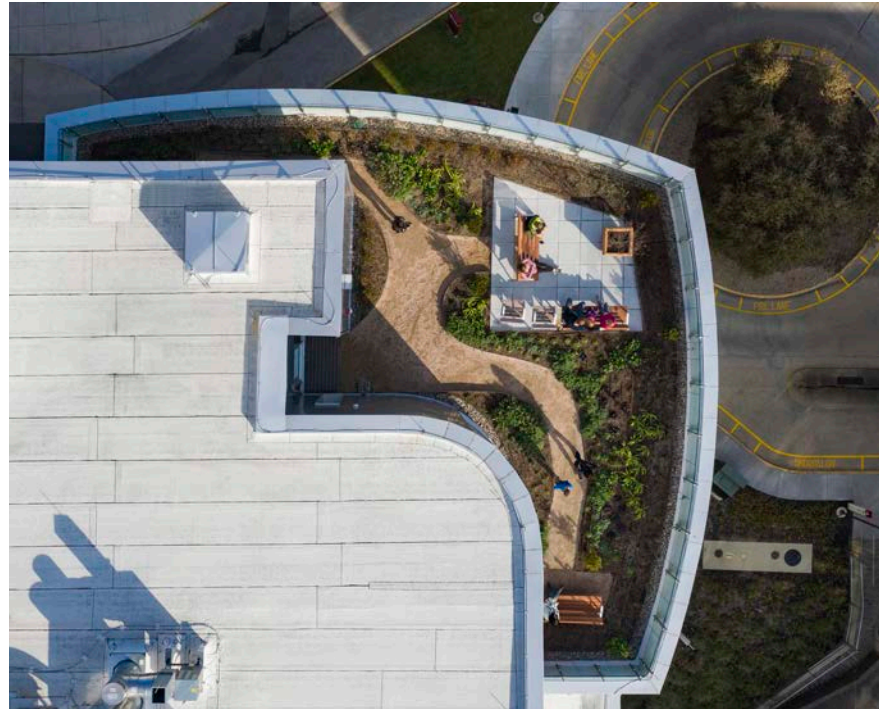
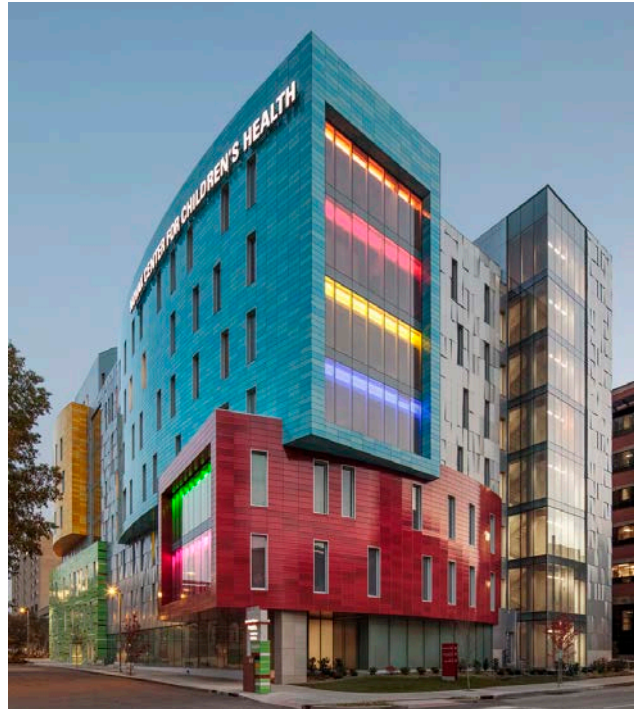
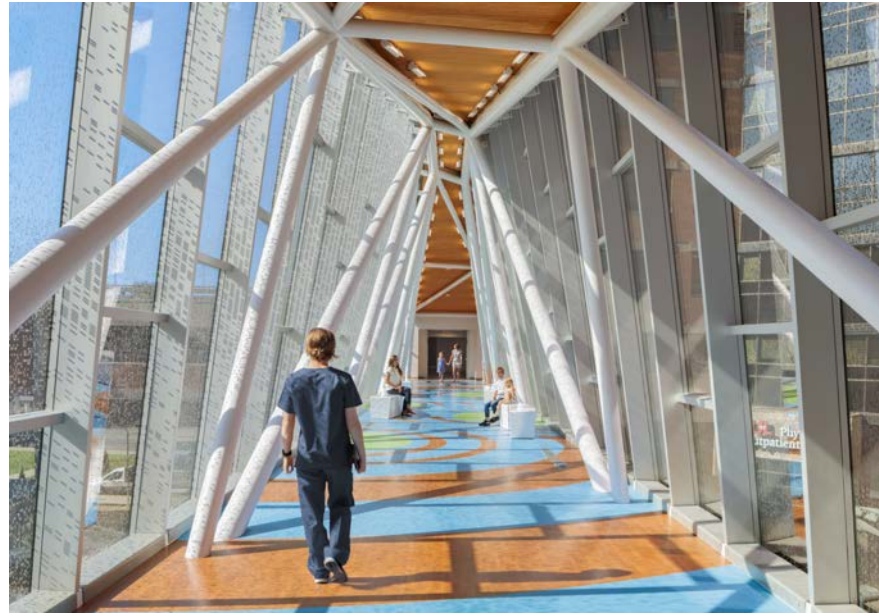


We worked with Cincinnati Children's to re-think the collection of therapeutic settings known as milieu. These are the spaces where patients spend most of their time, participating in group therapy, guided activities, free choice time, and other activities. The building's design was influenced by the location and variety of milieu spaces on the units within the building and their role as shared resources and destinations. The design emphasizes meaningful environments that mimic moving through one's day, like changing classes at school. Patient spaces throughout the interior incorporate positive distractions and allow for different behaviors, such as pacing, rocking, or self-expression. Built-in benches and nooks allow patients to comfortably occupy a room's edges. The new building features a Family Resource Center and a café to allow more opportunities for families to support their child or adolescent during treatment.

# Norton Healthcare NOVAK CENTER FOR CHILDREN'S HEALTH

Patients at the Novak Center for Children's Health often visit several specialties—neurology, hematology, ophthalmology—in a day; consolidating services eases the burden on families who previously had to crisscross the campus.

Co-locating specialists makes it easy for doctors, nurses, medical residents, and other professionals to seamlessly collaborate within and across disciplines. Designed for children without looking childish, the Novak Center takes cues from the region's indigenous plants and animals, and from kids themselves. The exterior's soft, colorful curves represent how a child might draw the building.



Designed for children without being childish by evoking a child's sense of curiosity, exploration, and discovery.

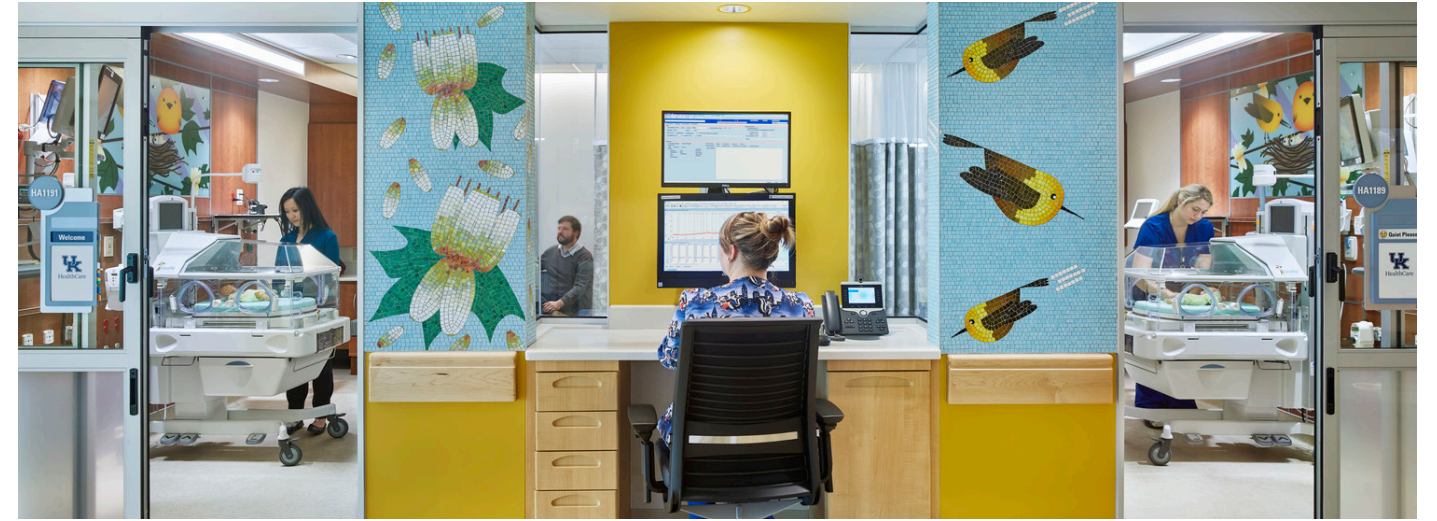
Large glass windows reveal people and activity inside the Novak Center's community spaces, making the building seem less mysterious and more welcoming to young patients.

The vivid terracotta cladding on the exterior rain screen is colorfast and requires no mortar or sealants, reducing maintenance. The rain screen system allows air to flow in and out of the wall cavity, reducing the radiant heat load on the façade. The bright panels have a third less embodied carbon than other materials, reducing carbon dioxide emissions. An HVAC system of active chilled beams moves air throughout the building efficiently and sustainably.



## UK Healthcare NEONATAL INTENSIVE CARE UNIT

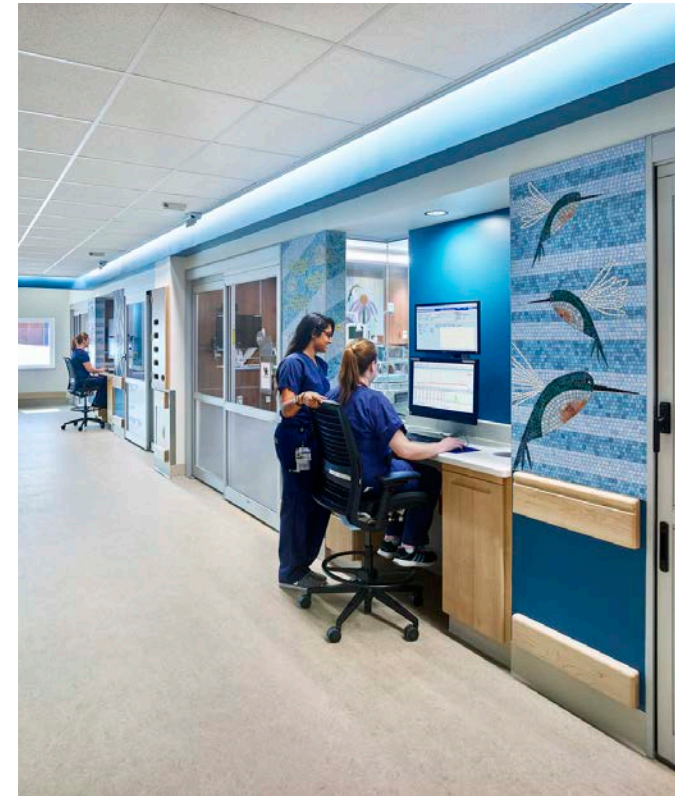
Babies in the Neonatal Intensive Care Unit (NICU) at Kentucky Children's Hospital are at the center of a highly specialized care environment, one that is also emotionally intense for their families and the nurses who ensure their survival through round-the-clock care. Private rooms provide controlled care environments— including circadian rhythm lighting and noise reduction—tailored for each patient's needs. Private rooms are also a sanctuary for parents who may stay in the unit for weeks.



We collaborated closely with UK's nurses and specialists on the design of the patient room headwalls; the rail system builds in flexibility so additional equipment can be added as necessary. From taped floors and foam walls to a full-fledged prototype built in the university's nursing college to train future staff, an evolving series of mockups helped focus and refine the room design. Mocking up the patient rooms also helped the nursing staff visualize and adapt to new ways of working together in neighborhoods of private rooms versus the open bays they were used to.

Room lighting and temperatures are controllable; sliding glass doors capture borrowed daylight from skylights and exterior windows in each community corridor. Efficient design means every piece of equipment from scales to breast pumps has a dedicated home inside each room.

Our multidisciplinary research study with UK on single room NICUs sheds new light on how medical teams communicate with each other.



## WHERE WE PUBLISH

- *New York Times*
- AIA AAH Journal
- Healthcare Design Magazine
- HERD (Health Environments Research & Design) Journal
- ENR
- BD+C
- Architect Newspaper
- Medical Construction & Design
- Modern Healthcare
- Healthcare Facilities Management/ACHA Featured Section

## WHERE WE SPEAK

- Healthcare Design
- ASHE PDC
- HC Facilities Symposium
- Gravens Conference
- Association of Community Cancer Centers
- Spectrum News
- EDRA
- TEDx
- SXSW
- ACHE
- CHD Healthcare Interior Design Podcast
- NeoCon
- Cleveland Clinic Patient Experience Summit
- Design & Health World Congress
- Human Factors and Ergonomics Symposium
- Swiss Center for Design and Health Symposium

## OUR LEADERSHIP ROLES

- Pediatric Environments Network (PEN)
- Building Environments Network (BEN)
- ACHA
- EDAC
- SG2
- HCD Advisory Board

## OUR RECOGNITIONS

- Angela Mazzi - AIA Gold Medal Award (2024); Healthcare Design Magazine's HCD 10 Winners: Architect of the Year (2022)
- Brooke Behnfeldt - Interior Designer of the Year (2019)

## OUR CLIENTS



Healthcare projects  
have been the recipient of

# NATIONAL, STATE & LOCAL DESIGN AWARDS

BD+C

# Giants400

TOP ARCHITECTURE FIRMS LIST

# OVER \$5 BILLION

HEALTHCARE  
CONSTRUCTION



ENHANCE & EMPOWER