

T.C. HOWE DEVELOPMENT CENTER: PROJECT SUMMARY



PROJECT DATA

LOCATION: 4900 JULIAN AVE, INDIANAPOLIS, IN
CLIMATE: 5A
BUILDING SIZE: 105,235 SF, 2 STORIES
LOT SIZE: 27 ACRES
SITE EUI TARGET: 28.36
DESIGNED FOR: 250 STUDENTS, 50 FACULTY + STAFF



BALL STATE UNIVERSITY : EDUCATION DESIGN

SUMMARY

Team Inclusive Design Advocates (IDA) from Ball State University is redeveloping Thomas Carr Howe High School. T.C. Howe is an important historic symbol on the East Side of Indianapolis. However, for the last two years, it has been sitting vacant. After extensive research and inventory of the surrounding and greater Indianapolis areas, our team has identified a lack of inclusively designed schools focusing on students with disabilities and special educational needs. The need for specialization is apparent in the Indianapolis Public School District, which recorded that one in every six students has a disability. In response to the research, the team has designed a plan to redevelop the school as Thomas Carr Howe Development Center: a barrier-free and inclusive facility specifically designed for students with disabilities in the surrounding area.

The Thomas Carr Howe Development Center incorporates environmentally responsive and inclusive design strategies to create an innovative,

barrier-free, and resilient environment. The design surpasses minimum energy code requirements and incorporates passive strategies, on-site energy production, and resiliency to create a net-zero high-performance education facility. The school also exceeds minimum ADA code requirements, creating a space that allows for optimal usage by all. Logical spatial planning and wayfinding techniques are incorporated throughout to allow for simple and intuitive navigation. Each material and finish throughout the project has been chosen based on its resilient and experiential qualities. The facility is also designed to serve as a community resiliency hub in the case of a catastrophic event.

Based on programmatic needs, community response, and embodied environmental impacts, the Inclusive Design Advocates have decided to demolish some existing buildings. The remaining historical portion is complemented with a new, single-story addition to create an accessible facility.





ARCHITECTURE: Logical spatial planning, the incorporation of natural light, a central circulation level, and the addition of flex spaces to create an inclusive and barrier-free facility despite the use of a historic building.



ENGINEERING: Innovative technologies and systems to create a super-insulated, airtight construction to bring a piece of history back to life.



MARKET ANALYSIS: Identifying the need for inclusively designed education facilities within the greater Indianapolis area.



DURABILITY & RESILIENCE: Designed for gym to be a community resiliency hub and incorporates durable materials and finishes.



EMBODIED ENVIRONMENTAL IMPACT: carefully considers each material and system's embodied and operational carbon.



INTEGRATED PERFORMANCE: The new and existing buildings are integrated to create a unified system using stack ventilation, Trombe wall, PV as shading devices, daylighting strategies, and rainwater collection systems.



OCCUPANT EXPERIENCE: Use of strategic wayfinding, flex spaces, and carefully chosen materiality to create a highly adaptable space for students and faculty.



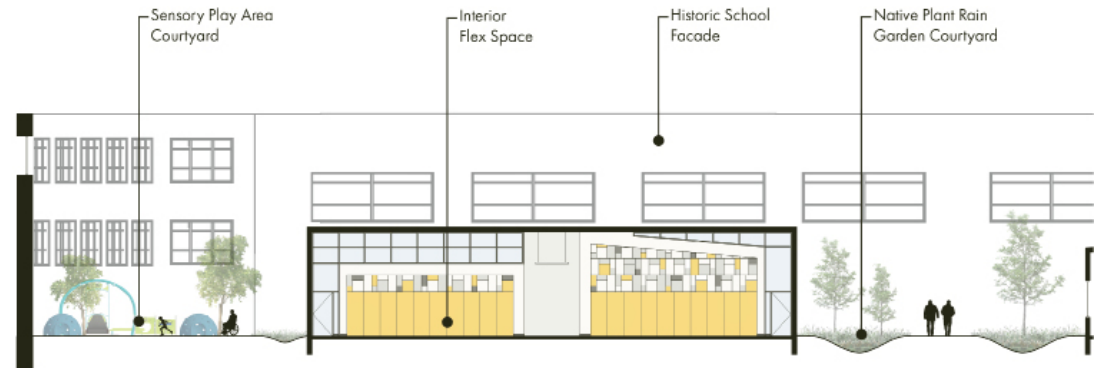
COMFORT & ENVIRONMENTAL QUALITY: Uses a variety of innovative systems and low-VOC materials to create a comfortable and healthy environment.



ENERGY PERFORMANCE: Designed to utilize various active and passive systems to create a net zero education facility and site.



PRESENTATION: Bringing awareness to the community on inclusive design and working with professionals to create a new way to design for any user in mind.



DESIGN STRATEGIES

The T.C. Howe Development Center addresses the inclusivity gap with k-12 students in the East Side of Indianapolis, IN. Inclusivity is achieved by ensuring spaces are adaptable to meet the varying needs of each student. Specific inclusive design strategies include the focus on barrier-free travel, implementation of way-finding techniques, use of flexible spaces, and surpassing code minimum ADA requirements. Movement is celebrated by introducing a statement ramp in the central atrium – the only vertical circulation area. The use of color, acoustics, and adequate signage for wayfinding allows for easy navigation. Implementing flexible spaces, operable partitions, and multi-use rooms allows for spatial adaptation as necessary. The introduction of large doorways and hallways, in addition to using a shallow slope ramp, surpassed minimum code ADA requirements and created an inclusive environment.

The Development Center is thoughtfully designed as a resiliency hub that serves the surrounding community. The resiliency hub provides a location for disaster preparedness and education, an

emergency center and gathering location, and a recovery hub for post-disaster relief. As mentioned, the design minimizes elevation change to maintain accessibility. The building is also resiliently designed through carefully selected materiality and finish choices based on durability, maintenance, and lifespan.

The new addition of the T.C. Howe Development Center utilizes CLT as the main exterior walls and roof structure. A system of glulam columns and beams supports the CLT panels. Implementing these systems provides a sustainable approach to structural design that seamlessly integrates into the building envelope while providing a consistent and appealing finish. The HVAC system utilizes the large site by incorporating a geothermal water source VRF heat pump and a dedicated outdoor air system (DOAS) with an energy recovery ventilator (ERV). These systems are powered by renewable energy via PV panels strategically placed on the facility's roof, façade and pergolas. In addition to active systems, the overall design includes implementing passive systems such as stack ventilation and thermal massing.