

100 100 0 1000 0
EXECUTIVE SUMMARY3  SCOPE OF WORK AND BUDGET4
EDUCATIONAL ENVIRONMENT7 PHYSICAL ENVIRONMENT18
SUSTAINABILITY & WELLNESS25 RESULTS OF THE PROCESS & PROJECT 27

# HANDS-ON LEARNING AND CAREER-FOCUSED PATHWAYS

# NOT ALL STUDENTS LEARN BEST IN A TRADITIONAL CLASSROOM. MANY STUDENTS LEARN BETTER BY DOING.

These truths are accepted today, but many learning spaces and curricula still fail to reflect that. Schools throughout history have often been built for a traditional lecturing model, which has all too often been the prevailing method of instruction. Today's educators work hard to innovate within these restrictive environments, yet some students are still inevitably hard to reach.

#### FINDING INSPIRATION FROM PARTNER FACILITIES

The design team worked with the Board of Education, school community, and broader Waterloo community to create a solution that met the following stakeholder goals:

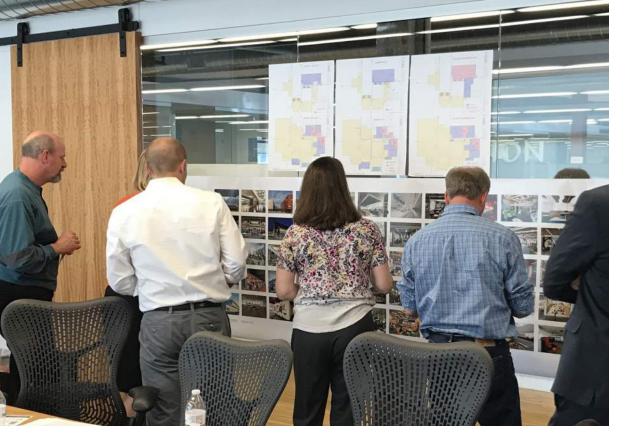
- -Provide space that allowed new career-based pathways to support the diverse set of needs of district students
- -Insert program into under-utilized and undesirable existing district facility to provide a new, positive visual identity for career-based programming
- -Connect local industry and school community through hands-on programs and spaces that engage and train future local workforce
- -Program and design spaces that support unknown future needs as the local economy evolves

#### CONTINUED ENROLLMENT INCREASES

Today, the WCC is flourishing, with enrollment increasing each year. Students from area schools have the ability to explore career opportunities, earn college credit, and support local business partners along the way. The program has been so successful for the district that plans for a new building are underway to further support the program. The new, modern Waterloo Career Center is a visual beacon for students and the community, with a wide range of educational and career opportunities available.







## FILLING A GAP IN THE CEDAR VALLEY REGION

#### UNIQUE COMMUNITY WITH VARIED NEEDS

Waterloo is a diverse community compared to greater lowa — ethnicity, culturally, and socio-economically. The ninth largest city in the state, Waterloo grew steadily in population until the 1990s, after which it declined and now holds steady at approximately 67,000 residents. The Blackhawk County seat and major metro of the Cedar Valley Region of Northeast lowa, Waterloo is a hub for government, advanced manufacturing, healthcare, education, and retail for the region. Major brands located in Waterloo include John Deere, Tyson Foods, ConAgra Grocer Products, Bertch Cabinets, and more.

# DRIVEN BY COMMUNITY SUPPORT AND PASSIONATE SCHOOL BOARD

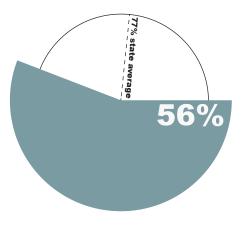
Waterloo's two 9-12 high schools (West and East) had historically fallen well below the state average in post-secondary readiness, with a small number

of students attending two and four year institutions and many graduating without a plan. Through an extensive community engagement process, the design team and district Building Facilities Committee met with local unions, manufacturing companies, and health care institutions to understand the needs of community industry. From these sessions, a vision for a new career-based facility that fostered exploration and training for high school students while supporting the future of the local economy was formed. The basis of the Career and Technical Education Pathways (CTE) program run at the WCC is a close working relationships with local business to teach skills that they need in future graduates.

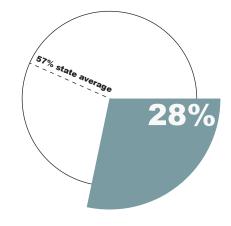
As the vision for the program became clear, there were still many unanswered questions about the specifics. What programs would come to fruition by opening day? What programs were 10 years out? This uncertainty pushing the design team to imagine

### POST SECONDARY READINESS

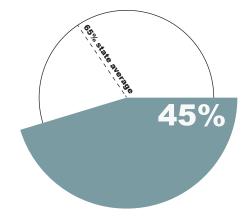
#### 9-12 STUDENT POPULATION



#### **ENGLISH LANGUAGE LEARNERS (ELL)**



#### FREE REDUCED LUNCH POPULATION (FRL)



# "THIS CAREER CENTER AND THE HANDS-ON TECHNICAL CAREER EDUCATION IS TRANSFORMATIONAL." Governor Kim Reynolds



as many flexible and adaptable spaces as possible with the only known being that changes to programs were inevitable.

The enthusiastic Building Facilities Committee, community and passionate district leadership rose to the challenges of the unknowns. The design team was able to work with the committee closely and collaboratively throughout the project's development to ensure the outcome fit the needs of future students. The importance of this program to the district and its significance in the community as a whole lent excitement and a sense of purpose to the entire process.

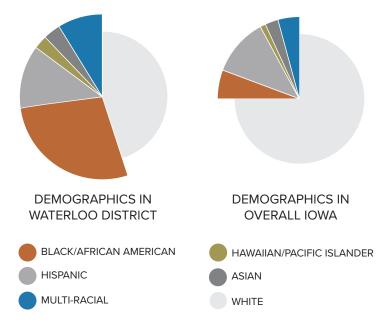
#### A NEW WAY TO THINK ABOUT EDUCATION

The added value for students in the ability to pursue a wide variety of career paths as early as high school cannot be overstated. The flexible, innovative approach to learning represented by the Waterloo Career Center makes education more inclusive, accessible, and meaningful to area students,

accommodating a variety of learning styles and career interests.

At the Waterloo Career Center's grand opening in October 2019, many prominent figures in lowan politics were present and took the opportunity to speak about the impact of the new building. lowa governor, Kim Reynolds, spoke about how the program would support state-wide initiatives, such as Future Ready lowa, which aims to ensure 70% of lowa workers have training or education beyond high school by 2025.

## WATERLOO BY THE NUMBERS





## VISION DEFINED BY SEVEN PROJECT DRIVERS

The core of Waterloo Schools' mission for the Career Center and CTE program is for "students to have the ability to explore in a career field, help them with what they want to be, and to have hand-on experience opportunities." To support this, the design team identified seven "project drivers" to guide the design of the Waterloo Career Center: Engagement, Adaptability, Identity, Align, Heart, Experience, and Waterloo. Before even beginning the design, these drivers were developed to guide decision making. The drivers emerged from a combination of what the design team heard from the planning committee and experience with past educational facilities; each driver represents a unique goal and focus-point that informed the design as it progressed.



#### WATERLOO

Be distinctly and uniquely Waterloo. The facility should convey a bold and powerful statement that projects a presence and vision about what education is, does and how it serves the diverse past and future of young adults in the Cedar Valley.



#### **ENGAGEMENT**

The space enables and promotes a spectrum of innovation and engagement from individual to collaborative opportunities for teaching and learning. Live to learn.



#### HEART

Give the program a heart that binds the programs and the district's two high schools together encouraging multidisciplinary teaching and learning opportunities. Provide Learning on display through the use of transparency between spaces.



#### **IDENTITY**

Planning should provide identity to the Career Center and Middle School that are publicly visible, cohesive but differentiated.



#### **ADAPTABILITY**

Spaces should be adaptable to meet a variety of future needs for learners, educators and industry partners in diverse and unique ways.



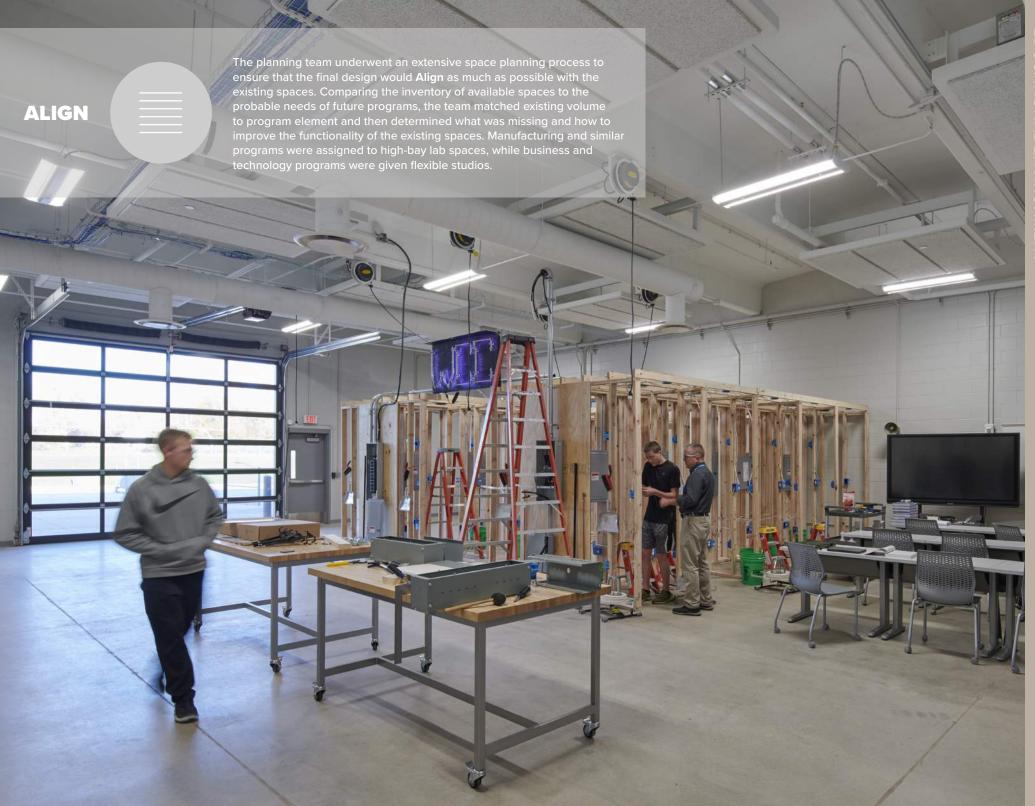
#### ALIGN

Planning should align types of spaces available in the building with appropriate curriculum and cost, maximizing value in the existing building while planning for future growth.



#### **EXPERIENCE**

Provide spaces that challenge the perception of what school is, looks like and feels like. Unique environments should offer experiences that attract the best staff and students to challenge not just what is learned but how it is learned.











The entire CTE program is centered around the re-imagination of what high school can look like and the WCC provides a distinct **Experience** for students. The building puts them in a different frame of mind, giving them the freedom to think more openly about what it means to learn and to explore their different interests. The transparency of the spaces allows students to see the happenings of other programs and draw inspiration from their classmates' work. The visually open spaces are different from what students expect of a high school; as students spend more time in the WCC, they can discover the potential of the different spaces what happens in other programs.

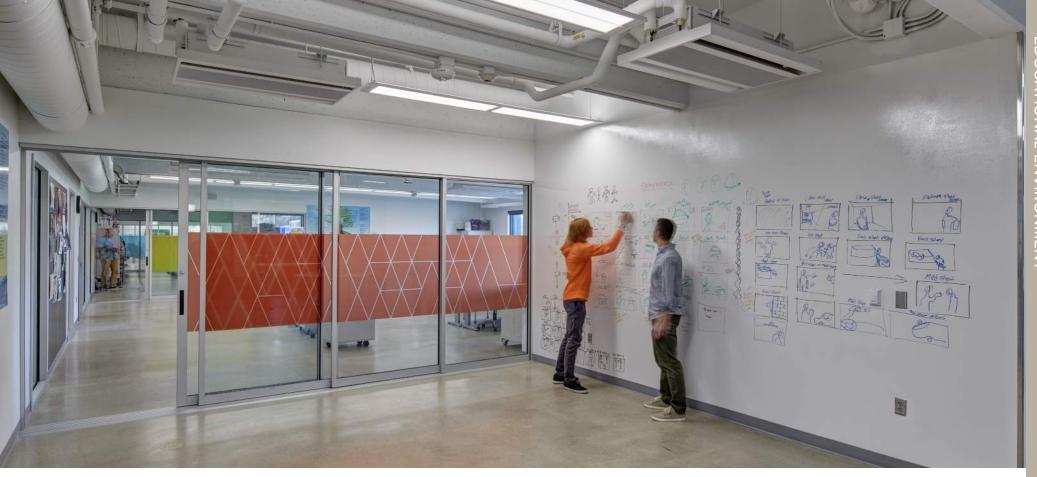


**IDENTITY** 



The new canopy and main entrance to the WCC were designed to be an identifier for the program, as well as a welcome to the surrounding community. The scale and rectilinear form of the new addition maintain its cohesion with the existing building, as well as a similar - yet modernized - color palette for the exterior materials. Simultaneously, the light and the bright pops of color throughout the design, visible even from the exterior through the expansive glass wall at the entrance, give the WCC a separate **Identity** from the rest of the existing building. This unique identity gives the students a special sense of place and marks the experience as distinct from that of a typical high school. The transparency and openness of the spaces are a visual signal to students, instructors, and visitors alike of the modern 21st century approach to teaching and learning the building supports.





## OFFERING NEW OPPORTUNITIES FOR GROWTH WITH ADAPTABILITY & FLEXIBILITY

# FLEXIBLE DESIGN SUPPORTS A VARIETY OF LEARNING & TEACHING STYLES

The multitude of different types of spaces to support the individual programs' needs is a testament to the district's commitment to inclusion and empowerment of students and instructors. The WCC is anything but a one-size-fits-all approach to education. The variety in CTE program offerings speaks to the amount of different teaching and learning styles the WCC spaces can accommodate. The flexibility and adaptability inherent in the design make this variety possible. Even if needs change in the future, the building is designed to continue meeting those needs. Flexible, open classroom spaces of varying sizes feature movable furniture that allows for lectures, group work, debates and discussions, or individual study. Small group rooms support team meetings and brainstorming sessions, as well as interactive presentations. High bay labs are home

to the manufacturing and maker spaces, while the upstairs studios are ideal for small project scale and tech-based learning. The WCC even includes a specialized space for hands-on Culinary training.

# OPEN CONCEPT OFFERS ADAPTABILITY & FLEXIBILITY

Creating openness in the existing building was a challenge, going from the closed-off, individual rooms of a traditional, school building to the open concept spaces of a 21st century learning environment. The flexibility of teaching styles that's possible in an open classroom with movable furniture, for example, ensures that a larger population of students is better-served by their education. But the WCC has more than just open classrooms, of course. The classrooms and labs come in different sizes and many can be combined with neighboring spaces as well. Sliding glass

walls and operable garage doors give the option to open up or close off spaces.

Beyond the school day, the WCC supports community functions as well. The public is welcomed into the space, whether it's utilizing the outdoor covered patio during events at the adjacent stadium or a class reunion in the multipurpose space catered by the Culinary kitchen.

The teaching and learning spaces were designed to be non-specialized, to spatially provide a blank slate for each program's instructors and allow them to determine what they need for their individual methods. This ensures that the district will be fitting a space to a program, rather than trying to fit a program into a space - an important distinction that avoids compromising any of the programs by virtue of not supporting them with the physical space and features they need to be successful.

#### **EXPERIENCE**

Physical and visual connections between lab spaces provides meaningful inter-disciplinary connections.



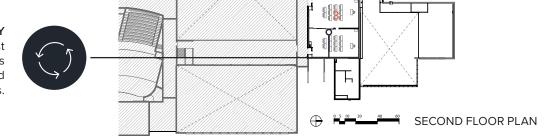
#### **ENGAGEMENT**

Individual to group collaborative teaching spaces.

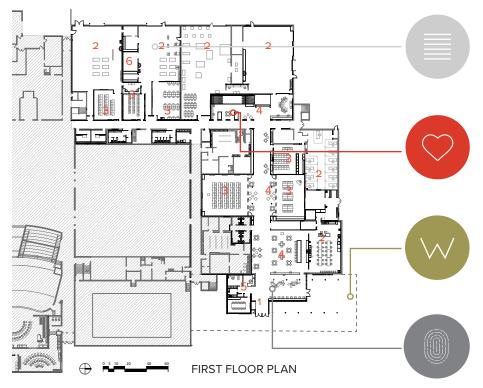


#### **ADAPTABILITY**

Movable partitions to adjust room sizes to meet the needs or learners, educators, and industry partners.



- 1 ENTRY
- 2 LABS
- **3** SHARED STUDIOS
- 4 SHARED CO-WORKING AREAS
- **5** ADMINISTRATION
- **6** BUILDING SUPPORT



#### **ALIGN**

Re-purposing existing high-bay spaces as heavy lab space brings together program spaces in a low-cost way.

#### **HEART**

Central stair that connects the floors, gathers students and links to a variety of learning spaces.

#### **WATERLOO**

Gathering Space at the front door adjacent to the shared district stadium welcomes the Waterloo community in.

#### **IDENTITY**

Unique materials and spaces at the front door set the stage that this is not "typical" school. "WE KNEW WE NEEDED SOMETHING DIFFERENT WITH THIS PROJECT. WE WERE DEVELOPING A NEW IDEA AND NEEDED A FIRM TO GET US THERE. THE DESIGN TEAM ENABLED US TO THINK OUTSIDE THE BOX AND CREATE SOMETHING UNIQUE-ALLOWING US TO BE PART OF THE PROCESS WHILE GUIDING AND LISTENING ALONG THE WAY. IT WAS AN AMAZING COLLABORATIVE AND CREATIVE PROCESS THAT WAS DELIVERED!"

Shanlee McNally, Board President







# BLEND OF ELEMENTS DRAWS YOU INSIDE

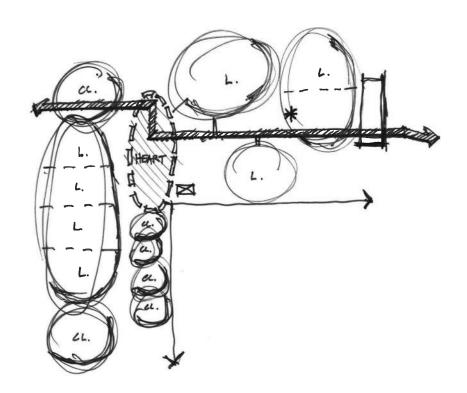
Chosen for its prominent location upon entering the site, the addition to the Waterloo Career Center is clad in weathered steel panels with an exposed steel structure. The main entrance brings you up a new concrete stair with weathered steel signage, to arrive beneath an expansive canopy, held high on slender steel columns. The scale of the entrance and its naturaltoned materials match those of the existing school building, but its modern lines, bright interior, and wide glass facade set it apart as a unique and special destination.

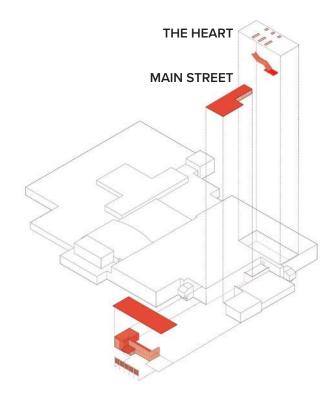
The wood underside of the canopy pulls you inside the building, where it continues down the Main Street in the form of a wood ceiling. The weathered steel featured on the exterior is a recurring motif inside as well, lining the front office and accenting the design throughout. The main multipurpose space took the place of the building's old gym, retaining its high ceilings but given new life with colorful wall coverings, playful furniture, and a swath of natural daylight from the front glass curtainwall. At night, the effect is reversed, with the Career Center emitting light from within and shining like a jewel.

The natural light continues along the corridor, a true breath of fresh air compared to the dark, low-ceilinged original structure. A major goal of the project was to introduce as much daylight as possible and infuse the spaces with natural light.

# WARM ENTRY PULLS STUDENTS, STAFF, AND VISITORS TO NATURALLY LIT SPACE







#### **INSERT & EXTEND**

Following the path of this daylight leads from the entrance directly to the **Heart** space and stair, moving up through the two-story space to more classrooms and studios above. The construction of the stair and opening involved significant structural coordination to create a hole in the structural floor.

The upper floor consists of flexible classroom and studio spaces, with plenty of glass and colorful accents to keep it as visually bright and open as possible. The studio spaces are separated by sliding glass walls allowing opportunities for collaboration or more space as program needs change. The classrooms, as well, have the option to be combined or separate as required for groups of different sizes.

# MULTI-PURPOSE SPACE AVAILABLE FOR COMMUNITY USE

The addition was located for visibility and to serve as a key indicator of entry from a major traffic artery; it was intentionally designed to have an open and welcoming appearance, to indicate that it's a space for the community in addition to the students. The Career Center is also directly adjacent to the school's stadium, allowing the

public to utilize the covered outdoor patio during events. The WCC's bright, open multipurpose space just inside the entrance addition also hosts community events, which utilize the Culinary kitchen as well and occasionally even serve as practice for the students in that program.

# INSPIRING AND MOTIVATING THROUGH TRANSPARENCY

The concept of "Learning on Display" drove the design of the space in many ways. The connectivity and transparency throughout the space is an intentional move to promote connectivity and collaboration among the space's inhabitants. Students have the opportunity to observe other programs and see their classmates' work in a natural and informal way. The openness and connectivity have the added benefit of spreading the now-abundant daylight throughout the space, which promotes attention and improved mental health in both students and staff.

Sometimes schools are built defensively, ensuring the durability of the materials and furnishings instead of focusing on the experience of the space and the best

learning environment for students. What the School Board has found with the WCC is that students, and even staff, want to be in this part of the building specifically because of the environment. Furthermore, the students have a sense of ownership of the building and pride in their surroundings, meaning destructive behavior is much less of a concern than in a typical school; students want to take care of their space when it's nice to begin with. Students want to perform well and enroll in the program after being inspired by the space itself.

The opportunity for the students to earn college credit and get involved with prominent local business partners motivates young people to seriously consider - and get excited about - their futures. The investment of the school district in the CTE program and the WCC building in such a visible way shows their passion in the future of generations to come. At the project's grand opening, both state and local leaders emphasized the importance of the Waterloo Career Center as an educational model for the future.



#### **EXPERIENCE**

Unique materials, such as weather steel panels, and spaces at the front door set the stage that this is not "typical" school.



#### **HEART**

Exterior glazing highlights the activity in the building and puts learning on display to the visiting public. Vertical steel fins provide shading to the glazing.





#### **IDENTITY**

Small, jewel-box like addition provides new face and distinct identity to the building and program with a small footprint.



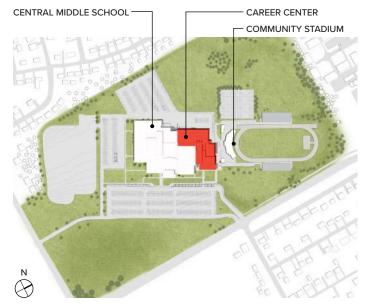
#### WATERLOO

Covered plaza and interior hospitality space serve as a front porch between the school and the community. Community gatherings and sporting events bring the public to the building.



#### **IDENTITY**

Connection to the stadium is reinforced by new signage and a pathway.



SITE PLAN

#### **HEART**

Glazing and overhead doors provide visual connections between lab and collaboration spaces.



#### **ADAPTABILITY**

Overhead doors connect lab spaces with adjacent shared co-working and collaboration nodes.



#### **ENGAGEMENT**

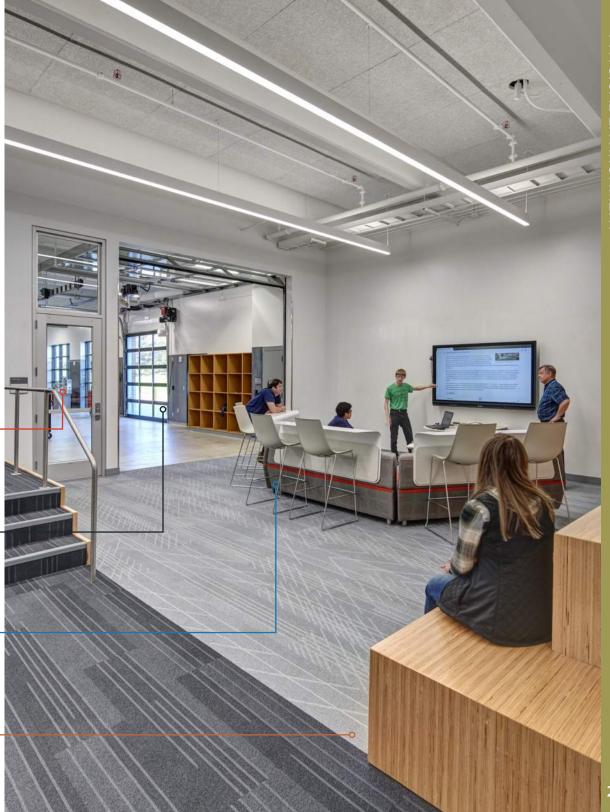
Multi-level furniture and presentation space allows for students to collaborate and present their ideas.



#### **EXPERIENCE**

Built-in benches allow for additional seating or heads down work while providing unique spaces not found in other district facilities.

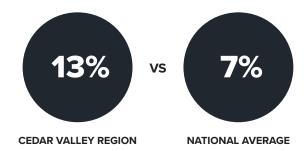




#### SITE SELECTION

For a successful connection with regional industries, the location of the Waterloo Career Center within the broader Cedar Valley was a critical decision. The existing Central Middle School that suffered from low residential density provided a unique solution centered in the heart of local industry and secondary education. This location also serves as a central point between Cedar Falls and Waterloo, maximizing its reach.

## PERCENTAGE OF EMPLOYMENT IN MANUFACTURING SECTOR



#### **CEDAR VALLEY REGION INDUSTRY CONTEXT**





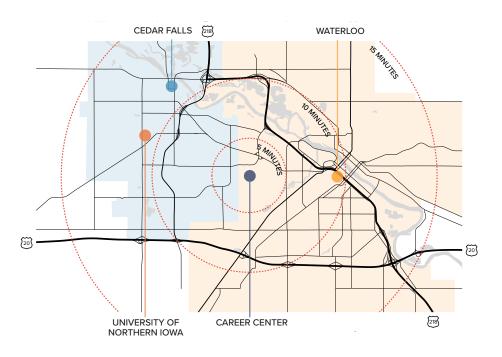
**SCHOOLING** 

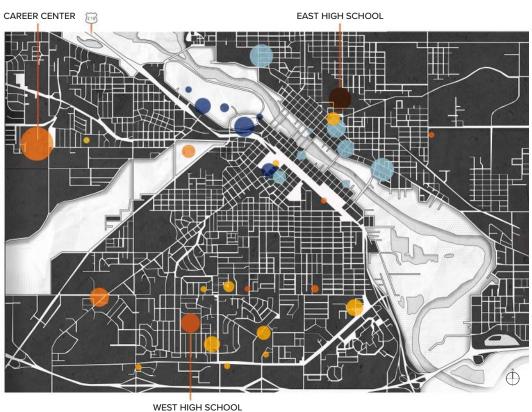
**MEDICAL** 





JOHN DEERE





# SUSTAINABLE APPROACH but not one that was met without challenges.

The district's commitment to re-imagining existing space was a first step towards a fiscally and environmentally responsible solution,

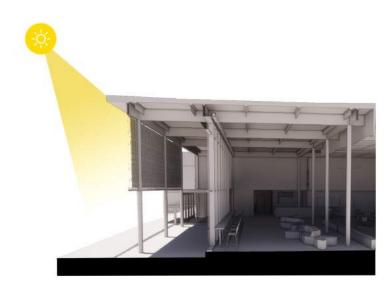
The existing building offered sufficient daylighting to approximately 1% of the floor plan, operated on inefficient mechanical systems, and had a leaking building envelope.

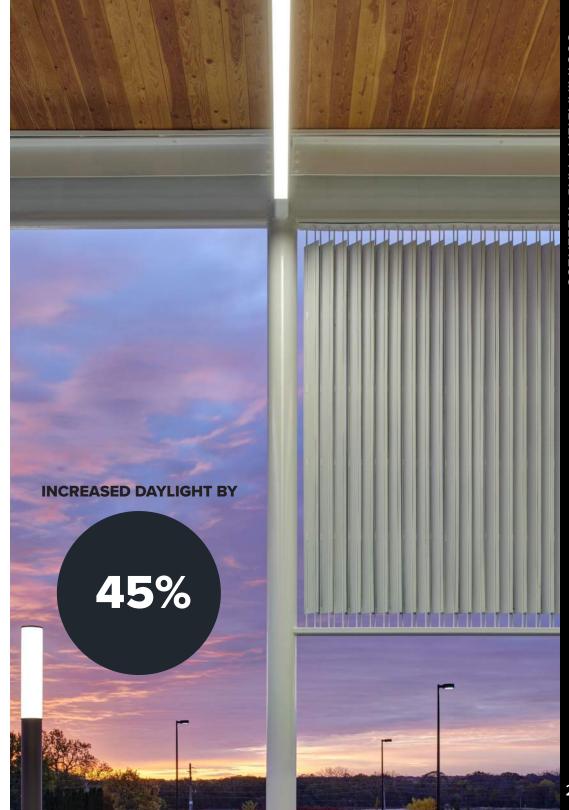
The project included life cycle cost analysis which led to the system selection of geothermal and chilled beams. This provided a longterm solution for the district which also met the challenges of the tight existing structure. Additionally, existing walls were insulated, new windows and skylights were inserted on the second level to bring daylight into these spaces. A bigger move of raising the roof along the Main Street spine to insert new clerestory windows transformed the dark interior corridor.

#### REVIEW OF DAYLIGHTING OFFERS THE BEST THROUGHOUT THE DAY

A steel fin veil was lightly applied to the steel structure of the addition and designed to permit infiltration of soft morning light into the main entry area while shielding the same area from harsh afternoon sun, while still porous enough to avoid constricting inward and outward views.







## UNLOCKING OPPORTUNITIES FOR YOUTH IN THE CEDAR VALLEY

# NEW FACILITY EXPANDS CAREER-FOCUSED PROGRAMMING

Assessing the completed project's performance against the project drivers, the Waterloo Career Center clearly achieves its objectives. The bold design and modern approach to teaching and learning creates a new **Experience** for students, encouraging them to engage their interests to jump-start their careers. The Career Center demonstrates school can be more than a traditional classroom and inspires students to take an active role in their futures.

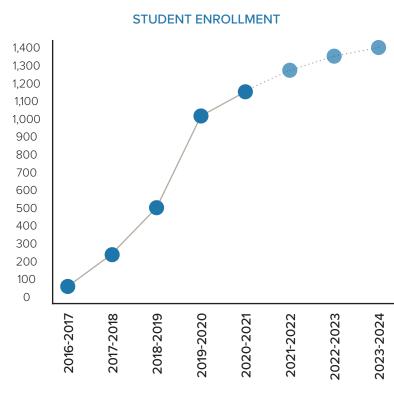
The planning process to **Align** with existing spaces and design for **Adaptability** resulted in an open, flexible plan that will function as well in the future as it does today. These flexible spaces provide opportunities for **Engagement** on an entire spectrum of learning, from individual to collaborative, depending on needs and preferences. The **Heart** of the design promotes connectivity in the physical space, and socially as well, providing a comfortable yet functional multi-purpose gathering space.

Both the interior and exterior of the WCC give it a distinct **Identity** from the existing building, drawing the community in and giving students a sense of pride, ownership, and agency. The significance to the community of Waterloo and the surrounding Cedar Valley of this innovative program, housed in a bright, modern beacon of a building, is a signal of growth, education, and investment in the region's future.

"Students are discovering it's a huge competitive advantage," noted Jeff Frost, Waterloo Schools' executive director of professional education, when talking about the ever-increasing enrollment. Whether students plan to continue their education after graduation or enter their chosen career, their experience of hands-on learning in the CTE program is preparing them. As of 2019, 16 businesses were partnered with WCC in various ways, with plans underway for adding more.

# EXPANDING OPPORTUNITIES FROM THE COMMUNITY TO NEIGHBORING DISTRICTS

As of 2019, students from the Waterloo area high schools, as well as neighboring Cedar Falls, Hudson, and Dike-New Hartford districts can







also enroll in the program. Students have also earned approximately \$1.5M worth of college credits from local community colleges.

All the programs set students up to earn career-related credentials or certifications that can help them get a job and/or further training after high school. The program has been so successful, there is discussion about an additional new building on the site to allow for future expansion. "What we're doing out there is really, really good for students," emphasizes Frost.

# ENERGIZING AND INSPIRING STUDENTS TO FOLLOW THEIR OWN PATHS

The new Waterloo Career Center provides high-quality educational spaces, a new space for community events, and an investment in education to help keep kids in school. When students realize there are options beyond the traditional classroom, when they get a chance to spend their school day working with their hands, it can inspire, energize and increase overall performance for students who otherwise may not thrive in a typical high school setting.

In addition, the CTE program may also help keep graduates in the area post-high school. Like many smaller cities, Waterloo experiences what's sometimes referred to as "brain drain," wherein the educated population, high school and college graduates, leaves for bigger cities to pursue advanced education and careers. With a program like CTE, the connection to local businesses and educational institutions has the potential to keep young people invested in their community.

U.S. Representative Abby Finkenauer said at the WCC's grand opening that it was a model for the state, with the potential to attract and bring people back to lowa. "If we have programs like these all across the state, this is how we keep folks here," she said. Senator Joni Ernst described it as "...really a positive impact for Waterloo," adding that "[when] individuals have that workforce training and that skill set, they really unlock that opportunity to succeed." On a local level, Hawkeye Community College President Todd Holcomb agreed that one of the major goals of the partnership is to address the lack of skilled workers in the state of lowa. "Waterloo Career Center and Hawkeye Community College will meet the needs and demands for workers in our state," promised Holcomb.

#### CAREER CENTER PROGRAM GROWS BEYOND ANTICIPATION

The creation of the Waterloo Career Center revitalized and modernized a tired, old building. It also gave a permanent home, and therefore new legitimacy, to the CTE program. With this boost of momentum, the program has continued to grow much faster than expected. The physical asset, the renovation and addition, made the program a priority, made it visible, and made it special. Ideally, it will become a model for other school districts, providing practical, hands-on learning opportunities to more students and increasing the skilled workforce across lowa.

