



# James Reese **CAREER & TECHNICAL CENTER**

Building Bridges from Classroom to Career

FORT BEND ISD  
SUGAR LAND, TEXAS





# TOC

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# EXECUTIVE SUMMARY

Fort Bend Independent School District strives to **inspire and equip all students to pursue futures beyond what they can imagine** – so when a districtwide facilities assessment revealed **a strong community desire for more career exploration opportunities for students as well as enhanced partnerships with local businesses**, the recommendation was made to construct a districtwide Career and Technical Education (CTE) Center.

Located at the gateway into the Telfair development—a master planned community 19 miles southwest of Houston, Texas, in the quickly growing city of Sugar Land—the **James Reese Career and Technology Center embodies Fort Bend Independent School District (FBISD)’s aspirations to provide the highest quality career and college technical education while acting as a community center for the educational, social, and economic needs** of Telfair and other communities within the district.



“We want students to graduate not only with entry-level qualifications for their industry, we want to give them the **skills to advance in their careers.**”

— FBISD VISIONING SESSION STAKEHOLDER



Several visioning and programming sessions with key stakeholders set the following course:

### STUDENT-CENTERED:

The CTE center's mission is first and foremost to **prepare all students for success and allow them to reach their full potential**. By focusing on the desired student experience, FBISD can create a CTE center that is geared towards students' specific needs and allows them to graduate with the skills they need to be hired and advance in their fields or attend the college or university of their choice.

### PROGRAM SYNERGY:

FBISD's goal is to **maximize collaboration and synergy between programs with complementary or related subjects**. By creating thoughtful adjacencies within the building and providing strategically located collaboration spaces and common resources, FBISD can provide a facility that encourages interaction between programs.

### COMMUNITY ENGAGEMENT:

The new CTE center will provide not only educational spaces, but also opportunities for FBISD to **engage in partnerships with the community and industry**. By creating a facility that includes flexible group spaces, and showcase areas—both inside and outside the building—FBISD can provide local and industry partners with both a training and event resource as well as a space to demonstrate their services.





# SCOPE OF WORK & BUDGET

Located on a 23-acre site within a suburban master planned community, the James Reese Career and Technical Center (CTC) is a two-story, 164,490 SF facility serving daily approximately 1,000 students from across FBISD. The new CTC provides classrooms, labs, and collaboration space to support multiple specialized programs and engage students of all ages across the district.

**LOCATION:**  
Sugar Land, Texas

**OCCUPANCY DATE:**  
August 2019

**GRADE LEVELS:**  
11th-12th

**COST:**  
\$49,948,316.50



- 1 EDUCATION
- 2 CREDIT UNION
- 3 COSMOTOLOGY

- 4 GRILL
- 5 TRANSPORTATION

- A MAIN ENTRY
- B EVENT ENTRY
- C STUDENT ENTRY

- BUS DRIVE
- PUBLIC / ENTERPRISE
- SERVICE
- STUDENTS



**01**

SCHOOL &  
COMMUNITY  
ENGAGEMENT

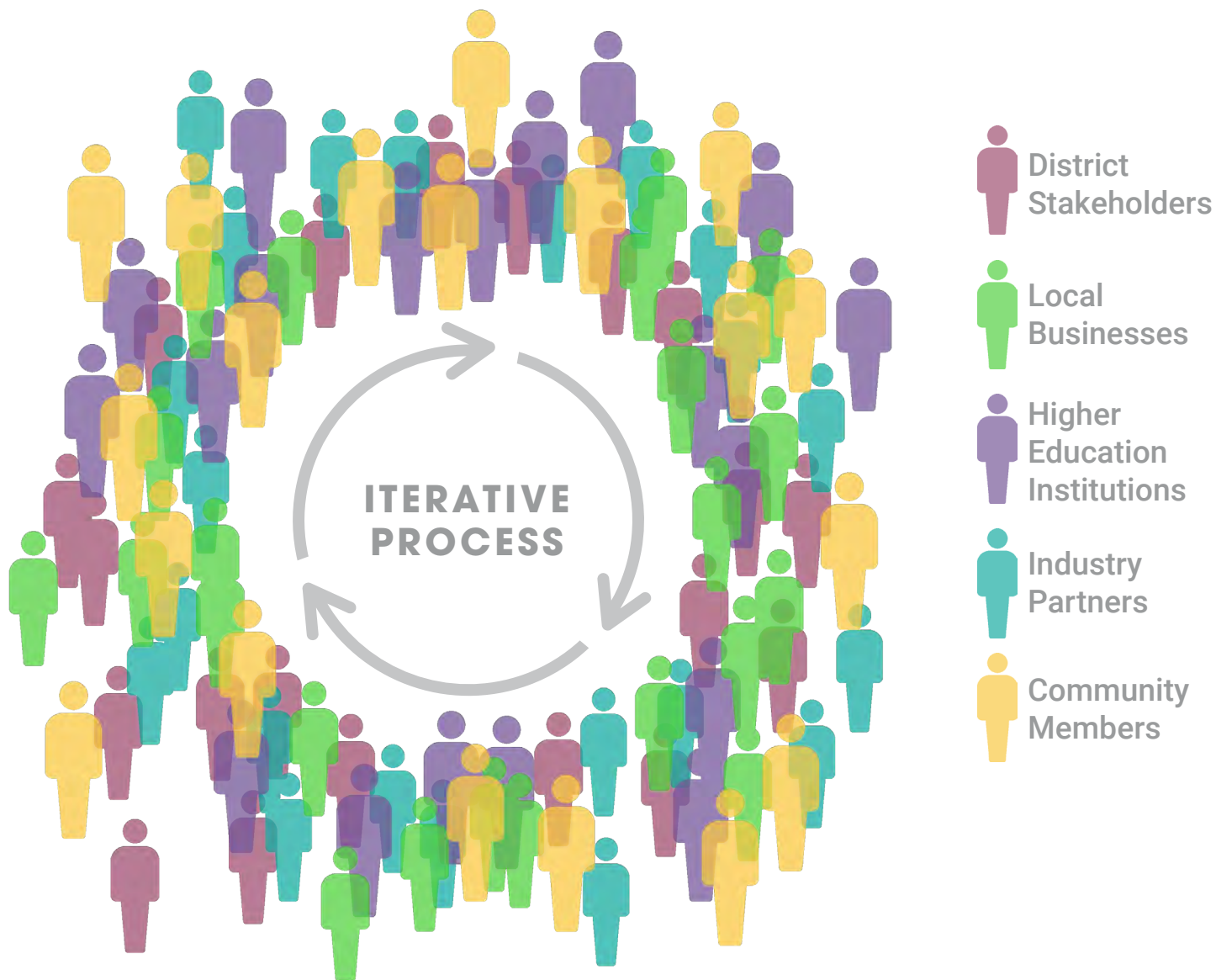




# STAKEHOLDERS

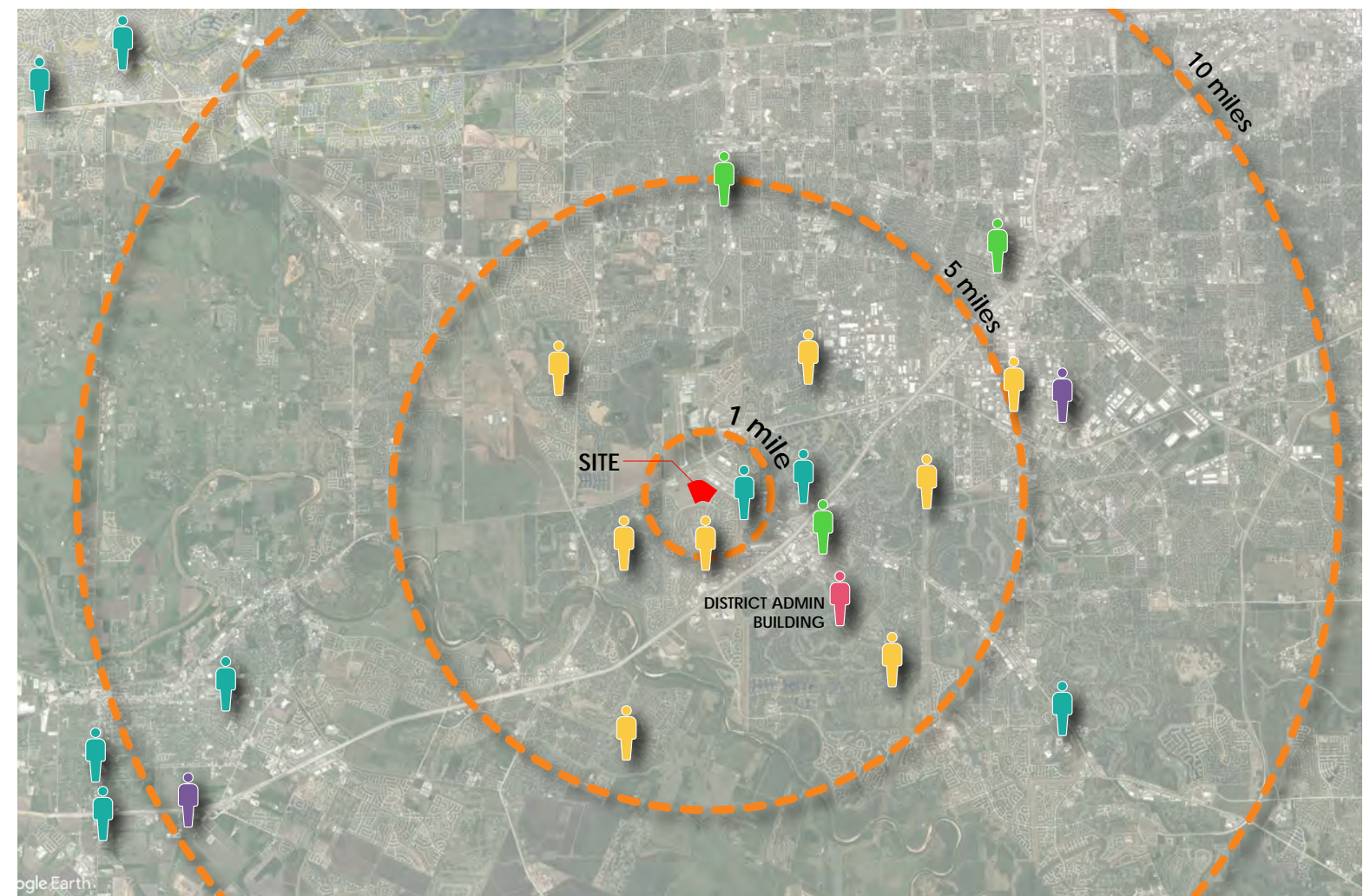
District stakeholders worked with local businesses, higher education institutions, industry partners, and community members to identify workforce gaps and needs, determine skill-specific training opportunities, and create an instructional program. The data helped to inform and pass the bond program.

The planning approach was an iterative process that repeated at each phase of the project. The design team first collected and synthesized input and then presented their findings and explained their design methodology to the stakeholders. This formed a feedback loop with the stakeholders to ensure their voices were heard and developed in each step.



# AVAILABLE ASSETS

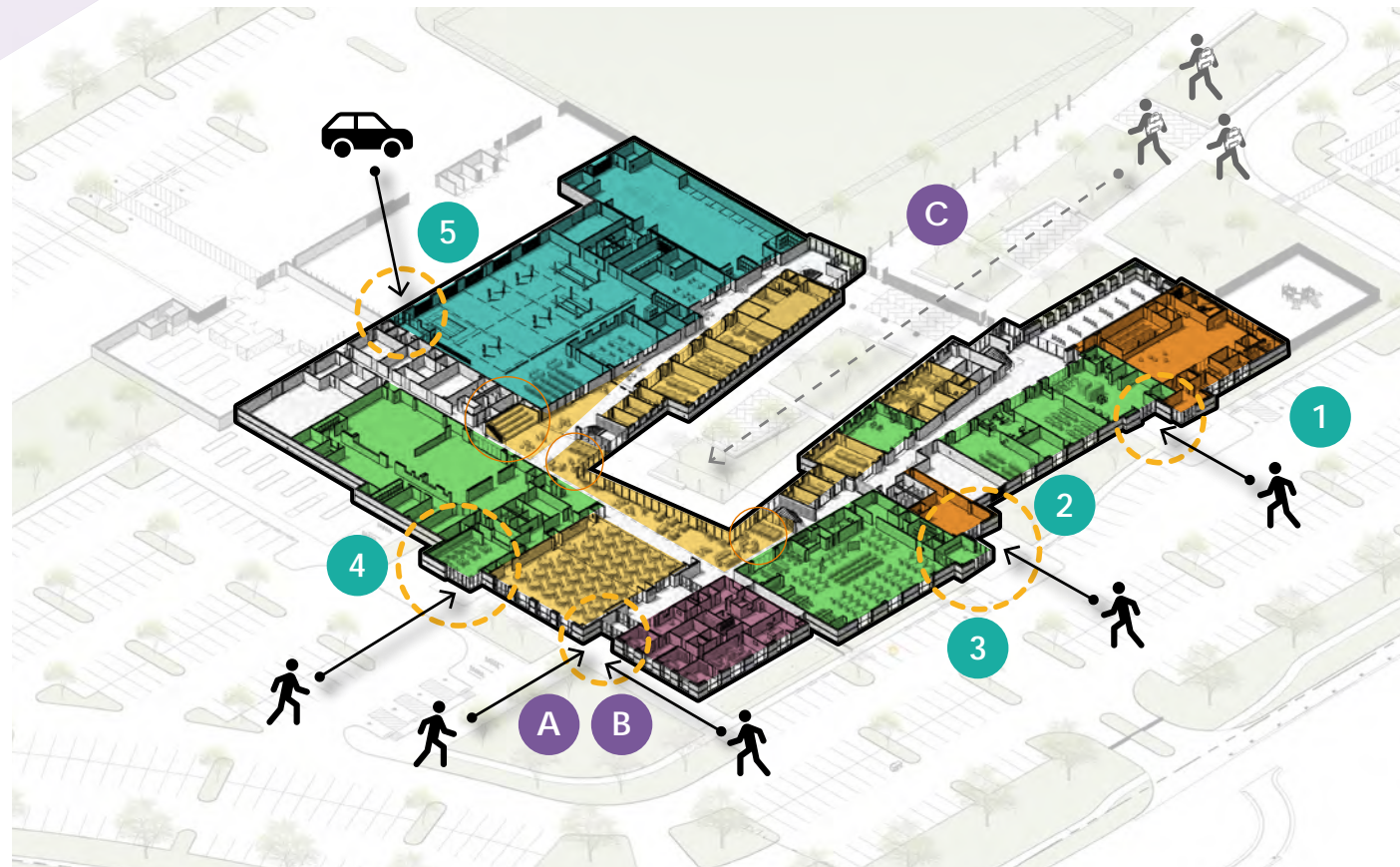
- **Great relationships with community and local businesses** provided a better understanding of the exact equipment and spaces needed to create a facility that parallels the workforce environment the students will enter upon graduation
- **The CTC sits on land previously purchased by the district and therefore did not require additional acreage for building.** Having a site located within a masterplanned community also provided multiple benefits:
  - » Simple and direct access paths from major roadways
  - » Located within the 100-year flood plain and did not require on-site water detention
  - » All major site utilities were already readily available
  - » Centralized location made it an ideal site to serve the entire county





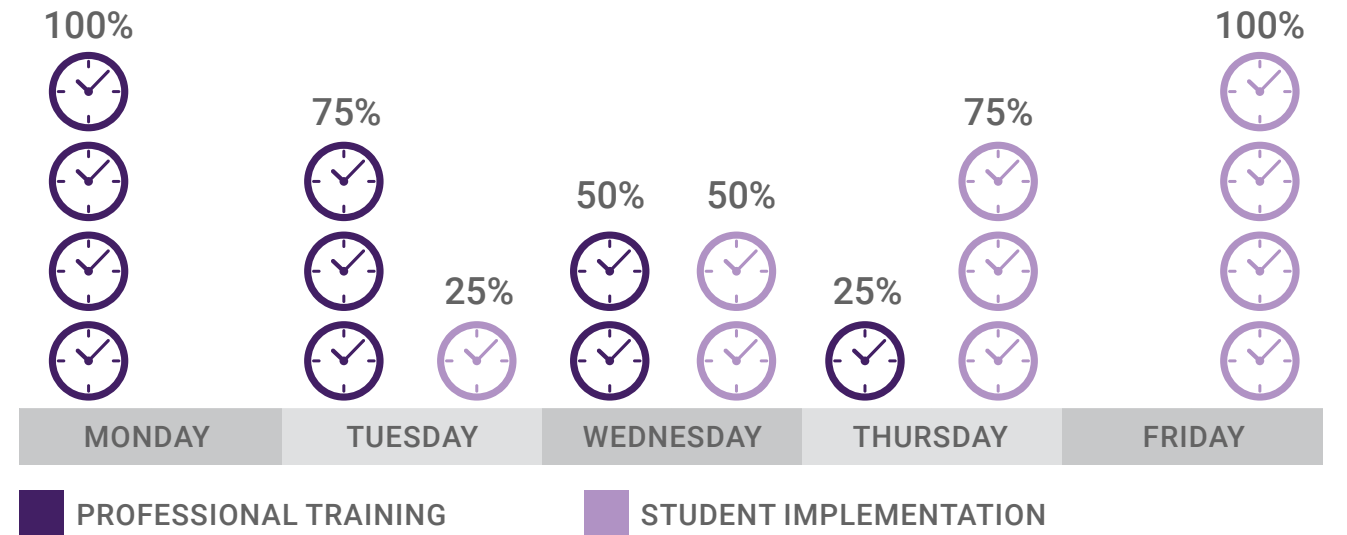
# OVERCOMING PROJECT CHALLENGES

The CTC's **enterprise storefronts** needed to be strategically placed on the exterior of the building to allow for easy visibility and safe community access while still allowing the building to function as an educational environment:



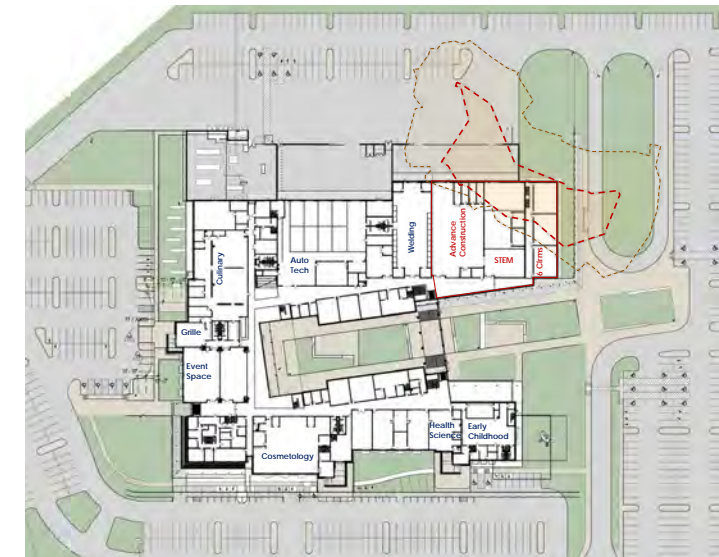
- 1 EDUCATION
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The design needed to accommodate **program synergy**—the true testament of the CTC's success—in a way that allowed education to be a truly interactive process (e.g., smooth transition from receiving professional culinary training to providing food service):



Design changes had to be made mid-construction due to the discovery of a gravesite:

## ORIGINAL SITE PLAN



## POST-DISCOVERY SITE PLAN





# VALUE OF THE PROCESS TO THE COMMUNITY

FBISD organized several opportunities to fully engage the community in the planning process to make sure that the CTE coursework was aligned with business and industry needs and to ensure that they were involving local workforce and programs. These opportunities included:

- **Inviting industry partners to a series of workshops** with the design team to evaluate the specialized needs of each program area
- **Touring CTE centers and reviewing other relevant 21st century environments** to gain a better understanding of current trends in academic building design
- **Discussing workforce trends** affecting future career options for graduates
- **Refining the academic program** to maximize educational benefits and community involvement

The workshop groups then reflected on these steps taken by the district and provided feedback forms. Critical highlights included:

- **Provide** learning activities using industry standard equipment to simulate realistic experiences that better prepare students
- **Teach** more than just the “component parts of the skill” and expose students to the business processes of their industries
- **Create** a variety of opportunities for community partners to support and promote synergy between programs



“As programs grow and internships opportunities increase with businesses, **Fort Bend will have the opportunity to fulfill employment needs with skilled students** from within our local community.”

— **CTE TEACHER**





02

EDUCATIONAL  
ENVIRONMENT



# EDUCATIONAL ENVIRONMENT

## PROGRAMMING

The James Reese CTC is a direct reflection of the district and community's commitment to providing a better future for their students. The district and stakeholders wanted to ensure that the students were not only given an opportunity to explore different career paths, but that this first-class facility would provide them with real world experience unlike any other. Through these advanced career programs students can receive college dual credit and certifications.

Our firm's unique planning process allowed for a wide variety of stakeholder perspectives to be heard through a three-step framework that was intentionally customized for the district to help create a successful CTE center project for the community and ensure that the students were "ready to hire" and enter the workforce after graduation. Through the planning process the stakeholder visioning group established the top four visioning goals for the facility programs.

“Empowering students with **life-long skills today** to become **industry leaders tomorrow.**”

– JAMES REESE CTC MISSION STATEMENT





# VISIONING GOALS

## VISIONING GOAL #1:

Upon graduating from the James Reese CTC, students will be...

ready for successful employment, adaptable thinkers and creative problem solvers, passionate lifelong learners, and productive and engaged members of the community.



## VISIONING GOAL #2:

Partnerships between the career programs are facilitated by providing a place to collaborate, with **all programs working together** to create events that combine subject areas.



## VISIONING GOAL #3:

The school is **heavily engaged with the community** by reaching out, inviting in, acting as a resource, and partnering with local community members.



## VISIONING GOAL #4:

The school **engages with the local business community** – building strong partnerships





# CAREER COMMUNITIES

The CTC is organized around four Career Communities. These areas allocate specific CTE programs near each other to promote cross-curricular collaboration between the students and faculty. The space adjacencies of these programs were evaluated by the team in terms of its function, proximity, and visibility. For example, certain programs had to be placed next to one another because of their function while others require visibility into other spaces or the outside.

## DESIGN & INNOVATION

The Design and Innovation community spaces support programs associated with manufacturing, building systems, energy, and engineering. Included in this Career Community are programs that can have collaborative projects around mathematics, industrial certifications, and large-scale construction.

### Design & Innovation Career Programs include:

- Automotive
- Advanced Construction (HVAC, Electrical, & Plumbing)
- STEM (Engineering & Robotics)
- Manufacturing (Welding)
- Agriculture & Natural Resources (Gas & Energy)



## AESTHETICS & WELLNESS

The Aesthetics & Wellness spaces support programs related to human services, health, and hospitality. Included in this Career Community are programs that can have collaborative projects around event production, tourism, and health and well-being experiences.

### Aesthetics & Wellness Career Programs include:

- Health Science
- Culinary Arts
- Cosmetology



## TECHNOLOGY & COMMUNICATION

The Technology & Communication spaces support more computer-based programs with specialized technology and data needs, including animation, sound engineering, video production, and computer software and hardware. Included in this Career Community are programs that can have collaborative projects around production and design of games, audio, and visual arts and production.

### Technology & Communication Career Programs include:

- Information Technology
- Arts/AV Communication

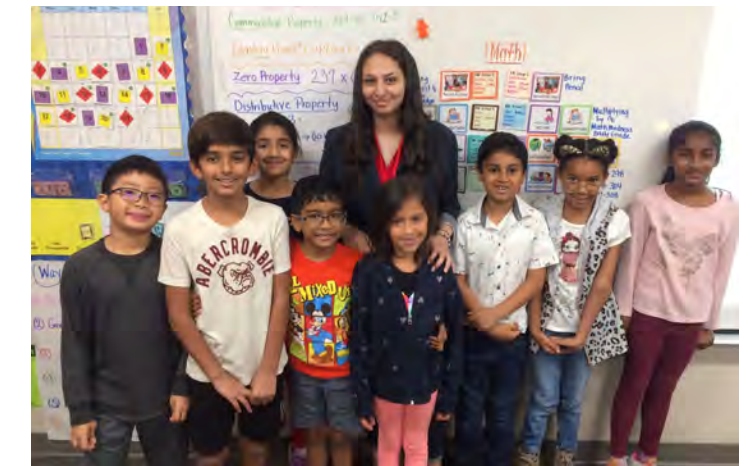


## PUBLIC IMPACT

The Public Impact spaces support programs related to public service and community support. Included in this Career Community are programs with specialized simulation needs and important security considerations, including childcare, law enforcement, and banking.

### Public Impact Career Programs include:

- Education Training
- Law & Public Safety
- Credit Union





# THE 5 ENTERPRISES

Within these communities are five enterprise programs that provide “hands-on” job training and services to the local community.

The revenue generated from the five enterprise programs is then reinvested into the facility’s career offerings.

## The 5 enterprises include:

- Automotive
- Cosmetology
- Culinary Arts
- Credit Union
- Child Care



Community members can come in through the cosmetology program’s public entrance and receive a haircut and other beauty-related services from students.



Local restaurants such as Lupe Tortilla, Chic-Fil-A, etc. have partnered with the CTC by serving their food at the take-n-go cafe in the school. In exchange, they teach the culinary arts students how to accomplish this and apply what they have learned at the end of the week.

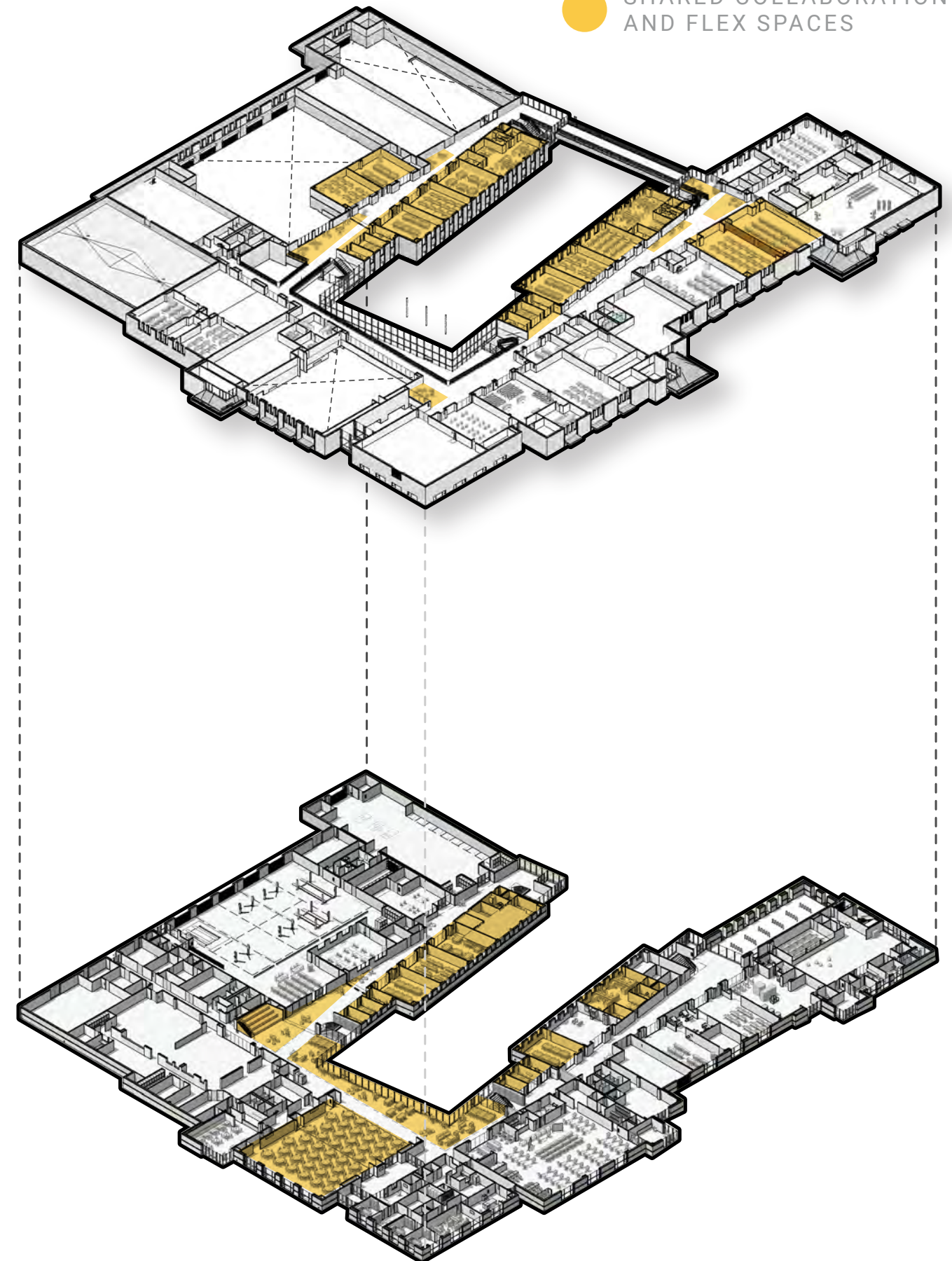


# COLLABORATION & FLEXIBLE SPACES

The new facility offers many strategically placed multi-purpose spaces for all types of learning that allows for independent study and encourages collaboration. Each career neighborhood is supported by a group of shared community spaces that includes teacher work rooms, instructional pull-out spaces, collaboration areas, breakout rooms, shared classrooms and career focused libraries that meet the specific curricular needs of the career cluster. Providing these different types of group spaces encourages the CTC students to collaborate in ways that best fit the needs of their projects.



● SHARED COLLABORATION AND FLEX SPACES





# THE BUILDING AS A LEARNING TOOL

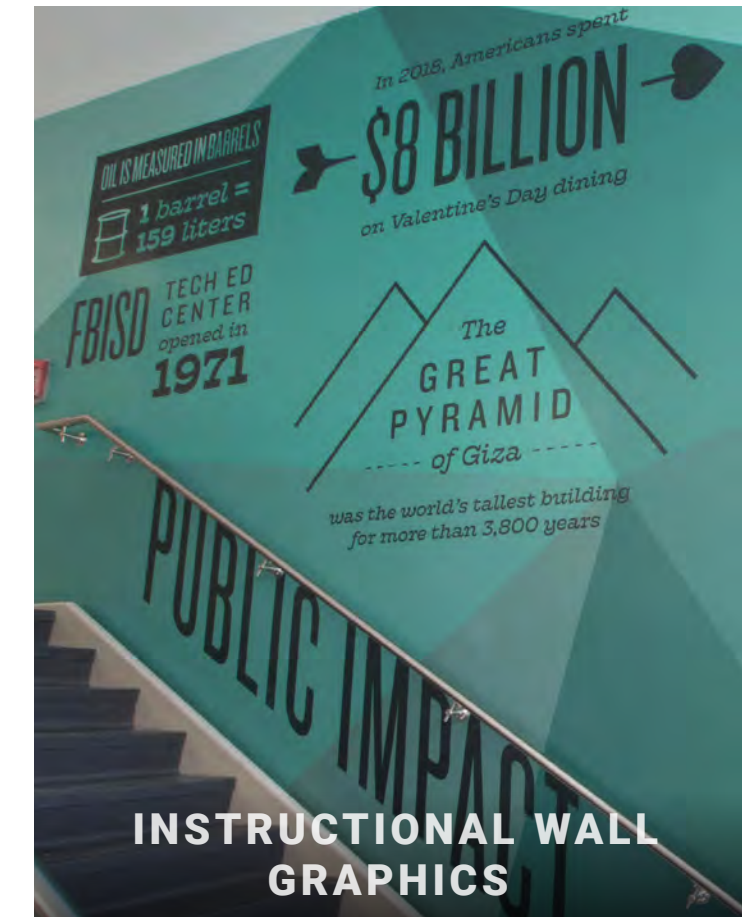
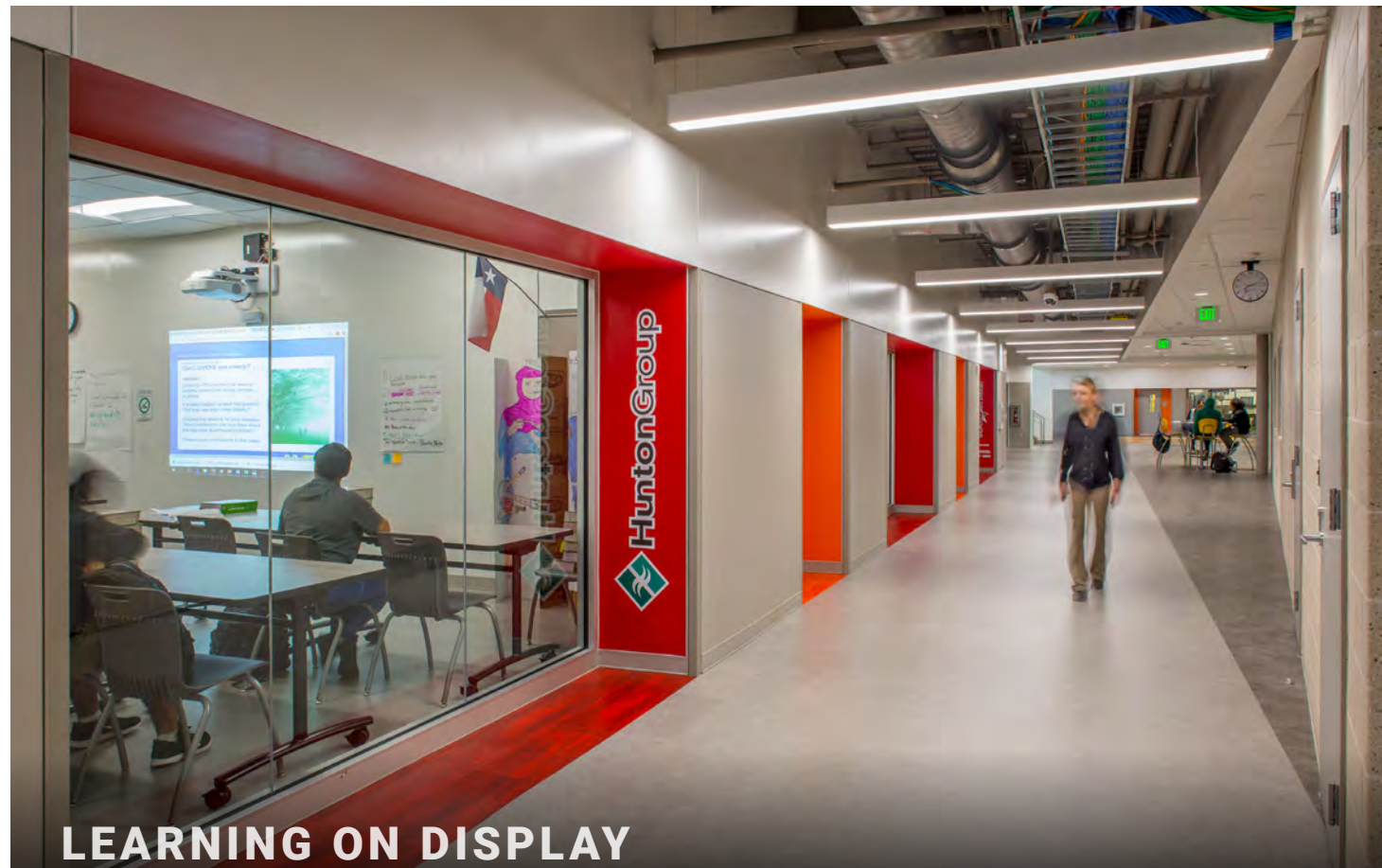
The district needed the building to serve as a learning tool for all ages. Although the programs at James Reese are for the district's 11th-12th grade students, starting in the 3rd grade, students are brought on field trips to the facility to spark interest and excitement for what their future career paths could look like.

The thoughtful design of the facility promotes learning at all levels. The bright colors and large graphics included

throughout the career neighborhoods are not only used for wayfinding, but also to help inspire young students who tour the facility. "Step-in" areas with large windows into the vocational spaces give a feeling of being in the classroom with the other students without disrupting any educational training or lessons. The curriculum also includes programs designed to facilitate energy and environmental awareness and conservation.

"The open classroom concept initially was my teaching concern, the thought of distractions, until I saw touring students' faces showing excitement and interest to see what lab activities my students were engaging in. **This was an impact opportunity, which opened my mind to embrace this setting.**"

– CTE TEACHER







03

PHYSICAL  
ENVIRONMENT



# PHYSICAL ENVIRONMENT

The location of the CTC truly makes it a focal point in the surrounding community through its proximity to local businesses and stakeholders, encouraging all to be involved in a student's journey from classroom to career.

## BUILDING EXTERIOR

The building was thoughtfully designed to blur the lines between the look of an educational and commercial facility. This approach reinforces the idea of the 3D textbook and helps simulate a professional environment. The building is organized around a large central courtyard that is open to the student parking lot. Students access the building through this courtyard which provides access to multiple entrances. The courtyard can be closed off during non-school hours through hidden overhead gates coiled inside of the connecting bridge. The bridge also serves as training equipment for the welding students to practice welding tied off to a steel structure.

## BUILDING INTERIOR

Student circulation occurs around the courtyard and which provides multiple opportunities for break-out activities and independent study. The circulation is connected in the main collaboration areas through a two-story volume which anchors the end of the courtyard. Each career path incorporates a view window from the corridor that is large enough for a class of third graders to view at one time. This learning on display model not only reveals the activities occurring to other high school students, but also serves as an organizing tool for elementary and junior high field trips to the facility.





# SUGAR LAND 95

## PROCESS: DISCOVERY + RESPECT

In February 2018, construction unearthed a forgotten piece of Sugar Land's past: a historic cemetery where 95 individuals—believed to be a part of a convict-leasing program that began in the late 1800s following the abolition of slavery in 1863—were buried. The individuals have become known collectively as the Sugar Land 95 (SL95).

A SL95 Task Force was established in Sept 2018 to ensure the individuals were reinterred with dignity, and their lives honored. Historic legislation was passed to modify Ft Bend County's ability to operate the historic cemetery and resulted in the Texas Governor signing HB 4170 into law in June 2019.

In November 2019, a public solemn ceremony planned by a committee of community members, historians, District staff, and members of the SL95 Task Force was held in remembrance of the SL95 prior to being laid to rest at the site where their remains were originally found. The cemetery is now protected by a fence and each gravesite has a burial vessel carefully marked so that individuals could be reunited with family, should descendants be identified in the future.

## IMPACT: CONSTRUCTION + CURRICULUM

The original design of the new facility was modified to honor and respect the cemetery. Approximately 30,100 SF of planned instructional space had to be de-scoped and redesigned in order to complete the construction of the new facility to open in August 2019.

The State Board of Education unanimously approved an African American studies course for high school students to begin in the 2020-21 school year. This elective course is the second ethnic studies course available to all Texas high school students. The District's Curriculum Coordinator developed the Texas Essential Knowledge and Skills for this statewide course. The CTC has also integrated the story of the discovery and importance of the history into the facility tours given.

“These 95 souls suffered a grave injustice during their time on earth, but we remain committed to ensuring that their lives are not forgotten, and that our students will learn about this part of our history for generations to come”

— DISTRICT SUPERINTENDENT

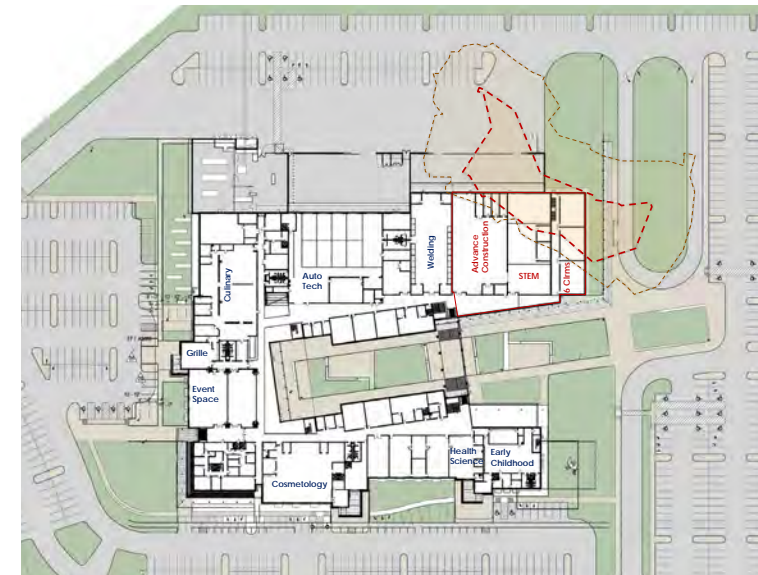
## DISCOVERY



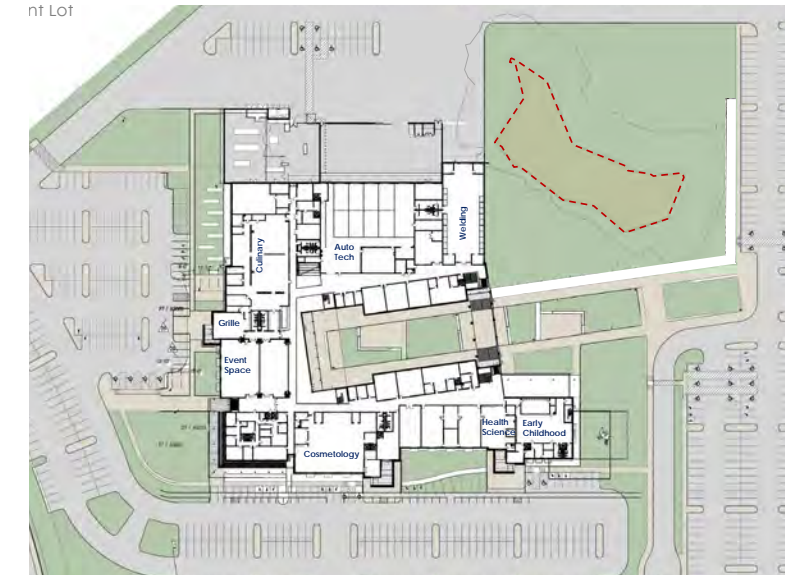
## RESPECT



## ORIGINAL SITE PLAN



## POST-DISCOVERY SITE PLAN





# COMMUNITY AT ITS CORE

From day one, the design of this project revolved around how to create a facility that not only serves the students well but also benefited the community that surrounds it.

The design of the building allows for safe public access to the five career enterprises. This allows residents in the county be involved and contribute to the success of these programs while also giving students

the opportunity to practice their skills in a realistic career environment.

The multifunctional facility has a large event space that is connected to the main lobby with operable glass walls that open up to the courtyard area if needed. This space has been utilized for larger community wide events such as STEAMfest., Career Fairs, etc.

“Through the design and development of the CTC – our three-dimensional textbook, we have been able to break down barriers and change mindset among community members, teachers, students, and other staff members. **The design has opened doors to bring the “outside in” and allow intentional interactions so that we can establish a culture of shared values that transcends all stakeholders.**”

– DISTRICT CTE DIRECTOR





# INSPIRING TOMORROW'S WORKFORCE

The new facility was intentionally designed to feel like a professional commercial environment and sets the overall tone of the building. The spaces the students see during their time at James Reese will replicate what they see in the workforce after graduation. Top of the line equipment and technology was included in the program spaces throughout the building, this allows students to familiarize themselves with these apparatus' prior to joining the workforce giving them a true understanding of their career fields.



Students at James Reese are encouraged to dress in their program areas professional uniform.



Simulators for career programs such as law enforcement, public safety, and forensic science.



# SUSTAINABLE INITIATIVES

The James Reese CTC exemplifies stewardship in sustainability. It is pursuing LEED certification and sets a good example for its users. Through a thoughtful design process, the team worked with the district to ensure that the building exceeded their expectations in energy efficiency.

- ✓ Pursuing LEED Certification (Construction Phase review by USGBC)
- ✓ Preferred parking for low emitting and fuel efficient vehicles
- ✓ Energy Star roofing and light concrete reduce site heat gain
- ✓ Rich daylight illuminates open spaces throughout the building
- ✓ Multiple learning spaces with both visual and physical outdoor connection
- ✓ Indoor Air Quality created a positive environment during construction and occupancy
- ✓ Reduction of energy consumption results in a 30.7% cost savings compared to baseline via energy model
- ✓ The CTC's curriculum has four programs designed to facilitate education in energy and environmental awareness and conservation, these programs are:
  - Crop Production
  - Energy Conservation
  - Recycling and Upcycling
  - Water Conservation







04

RESULT OF THE  
PROCESS AND  
THE PROJECT



# GENERAL RESULTS

- Building is a **3D Textbook** for all learners (3rd - 12th grade students and staff)
- **Local business and community partners** donate key technical equipment to further promote cutting edge, real world experience, including an electric car and medical-grade equipment from the hospital
- The new facility better **prepares students for their future path**, whether it is post-secondary education, immediate entry into the workforce, or a combination of both
- The building provides **advanced career opportunities** compared to district's previous CTE offerings, and allows for more certification programs to be offered to students
- **Money generated from the Enterprise Programs is reinvested into the CTE programs.** The desire would be that these businesses will become self-sustaining and generate enough revenue and community support so that additional CTE facility options may be considered in the next 5-10 years with minimal financial need through bonds.

“While teaching at the Reese Center, I have discovered I truly did not understand skill set courses. **Exposure to the education, skills, and working professionalism instilled in these students has broadened my view of Career and Technical Education.**”

– **CTE TEACHER**





# ACHIEVING THE EDUCATIONAL GOALS

## DESIGN & INNOVATION

### Skills and Certifications include:

- Arc Welding 1 G
- Arc Welding 3 G
- Auto Technician Level I
- Building Construction Level I
- Engine Machinist
- Ethics and You
- HVAC Technician Level I
- Mechanical Pollution Prevention
- Mechanical Safety
- Plumbing Technology
- Rig Pass
- Robotics Level I
- STCW – Basic Maritime

### Dual Credit Programs include:

- Automotive
- Building Construction
- HVAC
- Machining
- Plumbing
- Robotics
- Welding

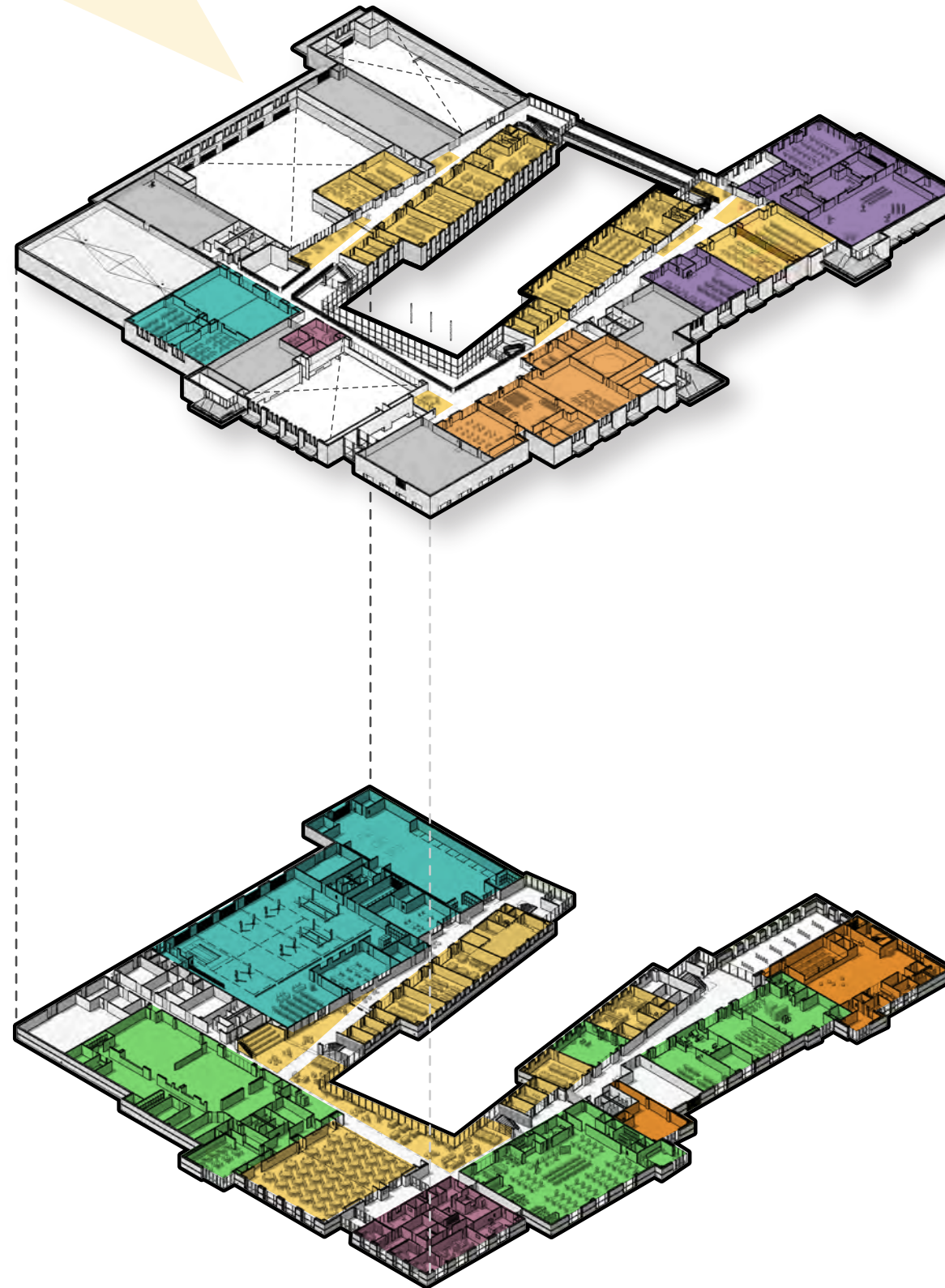
## AESTHETICS & WELLNESS

### Skills and Certifications include:

- Cosmetology License
- CPR
- First Aid
- Medical Assistant
- OSHA
- Pharmacy Technician
- Physical Therapy Assistant
- ServSafe

### Dual Credit Programs include:

- Culinary Arts
- Graphic Design
- Medical Assistant



## TECHNOLOGY & COMMUNICATION

### Skills and Certifications include:

- Adobe Illustrator
- Adobe InDesign
- Audio Recording
- Basic Electronic
- Cisco
- Comp TIA
- Cyber Safety

### Dual Credit Programs include:

- Film Production
- Networking

## PUBLIC IMPACT

### Skills and Certifications include:

- 911 Operator
- Basic Fire Fighter
- Child Development
- Educational Aide
- Financial Literacy

### Dual Credit Programs include:

- Court Systems & Practices
- Criminal Investigation
- Fire Fighting



# COMMUNITY & SCHOOL GOALS

## COMMUNITY:

Certifications allows students to enter the workforce immediately after graduation.

Very large event space, adjacent to the culinary area, can be used by the local community as an education and training resource.

## SCHOOL DISTRICT:

The James Reese CTC will better prepare students for their future path, whether it is post-secondary education, immediate entry into the workforce, or a combination of both. Additionally, it will help the district foster relationships with local businesses to support the continued economic growth and development of the Fort Bend community.

“My favorite part of the building is the medical area because I want to be an obstetrician. I liked getting to see what a hospital room looks like.”  
– CTC STUDENT





# UNINTENDED RESULTS

The Texas State Board of Education unanimously approved **a new statewide African American studies course**, which is developed to Texas Essential Knowledge and Skills (TEKS) standards and includes material from the district's syllabus about convict leasing and the Sugar Land 95.

The district's thorough efforts to create an advanced facility that would **build bridges from classroom to career** resulted in an environment so closely aligned with local industry needs that professionals now utilize the space and equipment to help educate and prepare their workforce. For instance, the Police Chief uses the law enforcement simulator to train local officers and firefighters.

Diligent educational programming combined with a conscientious design has **further strengthened the relationships with local businesses and solidified their commitment to the CTC's success**. For example, when the COVID-19 pandemic forced a key industry partner to shut down a local plant, they quickly opted to donate major pieces of equipment to the CTC (despite being geographically closer to a CTE center in a different district).



“The value and focus that Fort Bend ISD has put on preparing students for the future workforce is a refreshing change. **The building is not only beautiful but it is functional and works to break down barriers among community members about what defines a ‘great job’.**”

– **COMMUNITY BUSINESS PARTNER**