

Bringing CTE Back: Developing New Career- Ready Programs



Presenters



Moderator

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Director of Building and Grounds
Lake Forest District 67 & 115
Lake Forest, Illinois



Presenter

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Senior Project Architect
Perkins&Will
Chicago, Illinois

Agenda

What are CTE Programs & Careers?

Why are CTE Programs Important?

Case Study - Developing A Successful CTE Program



What are CTE Programs & Careers? Why are they Important?

“We are looking for ways to decrease the dropout rate. I am pretty sure, if we eliminate career and technical education, we are going to increase the dropout rate”

- Michael Enzi

CTE Programs – Not Just Shop Class



CTE Programs – Not Just Shop Class



What are Career Technical Education Programs?



“CTE is not a “track” so much as a pedagogy; it contextualizes learning in real-world settings to spark students’ creativity and sense of possibility.”

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[What Is Career and Technical Education, and Why Does It Matter?:](https://educationnorthwest.org/news/what-career-and-technical-education-and-why-does-it-matter) Education Northwest; Erin Flynn; February 19, 2021
<https://educationnorthwest.org/news/what-career-and-technical-education-and-why-does-it-matter>

What are Career Technical Education Careers?

Middle Skill Careers

(More than a high school diploma, less than a bachelor's degree)



Carpenters
Electricians
Painters
Operating Engineers
Plumbers



Dental Hygienist
Licensed Practical Nurse
Medical Lab Technician
Physical Therapy Assistant
Radiology Technician
Respiratory Therapist
Surgical Technologist



Support Specialists
Other Specialists

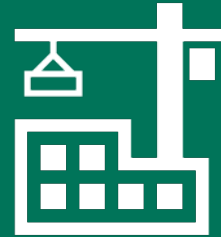


Aircraft Mechanic
Auto Mechanic
Heating/AC Installer
Heavy Equipment Mechanic
Industrial Machinery

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Middle Skills Education: Planners Are Reimagining Ways to Meld Instruction and Industry
Planning for Higher Education Journal V47N4 July-September 2019; Carl Knutson.

What are Career Technical Education Careers?



Middle Skill Careers

(More than a high school diploma, less than a bachelor's degree)



What are **Career Technical Education** Programs? ...and why are they important?

- **Prepare students for in-demand jobs in skilled crafts**
- Higher Graduation Rates
- Increase Understanding in Science and Math
- Teach Critical Soft Skills
- Help Students explore potential career paths

Retirement and other losses are a huge gap in the skilled labor marketplace, that demand leads to higher paying jobs for students well versed in those skills that employers desperately need.

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In Demand Careers - Middle Skills Labor Gap

U.S. Jobs and Workers by Skill Level



There continues to be more demand for 'middle skills' workers than there are workers to fill the available jobs.

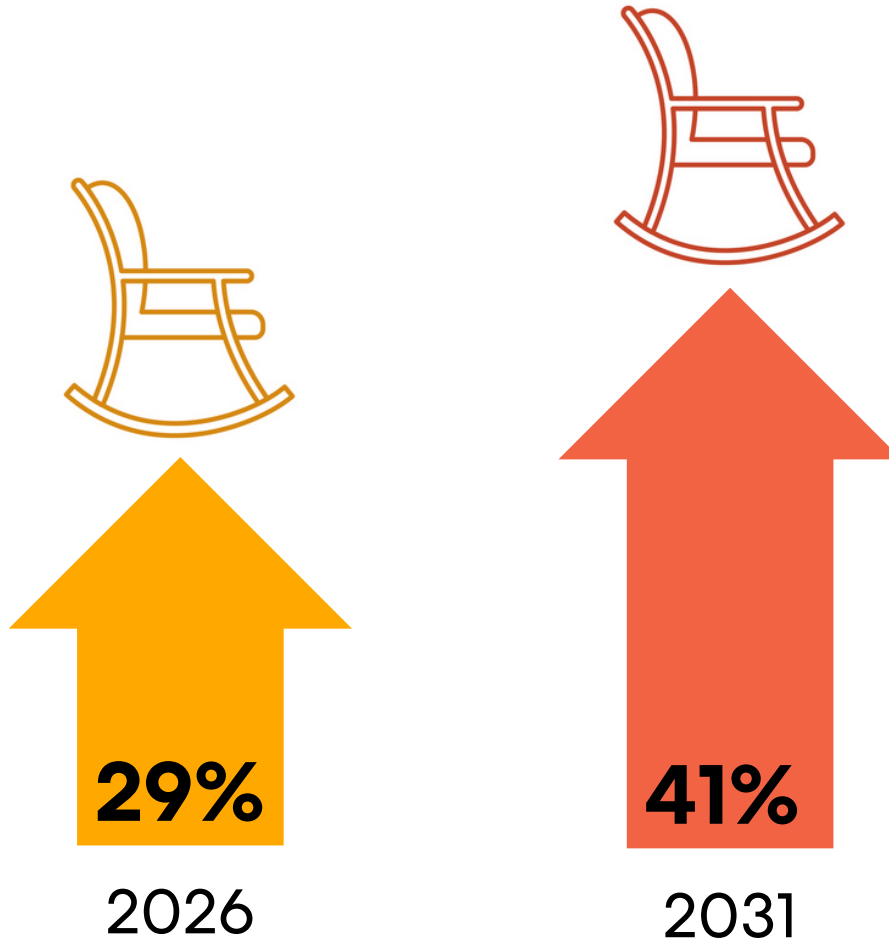
35-50% of all new job openings after 2020 are projected to be Middle Skill jobs.

Source: U.S. Bureau of Labor Statistics Occupational Employment Survey 2015, U.S. Census Bureau American Community Survey 2015

In-Demand Careers - Aging Workforce



Construction Industry
Retirement Forecast





Eight years after their expected graduation date, **students who focused on career and technical education courses** while in high school had **higher median annual earnings** than students who did not focus on CTE

- Department of Education

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- **Higher Graduation Rates**
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“The average high school graduation rate in 2012 for CTE concentrators was 93%, compared to the national average adjusted cohort graduation rate of 80%”

Office of Career, Technical and Adult Education data; Civic Enterprises et al., *Building a Grad Nation: Progress and Challenge in Ending the High School Dropout Epidemic: Annual Update, 2014*

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Higher Graduation Rates



91% of all high school graduates who earned two or three CTE credits then **went on to post-secondary education.**

What are **Career Technical Education** Programs? ...and why are they important?

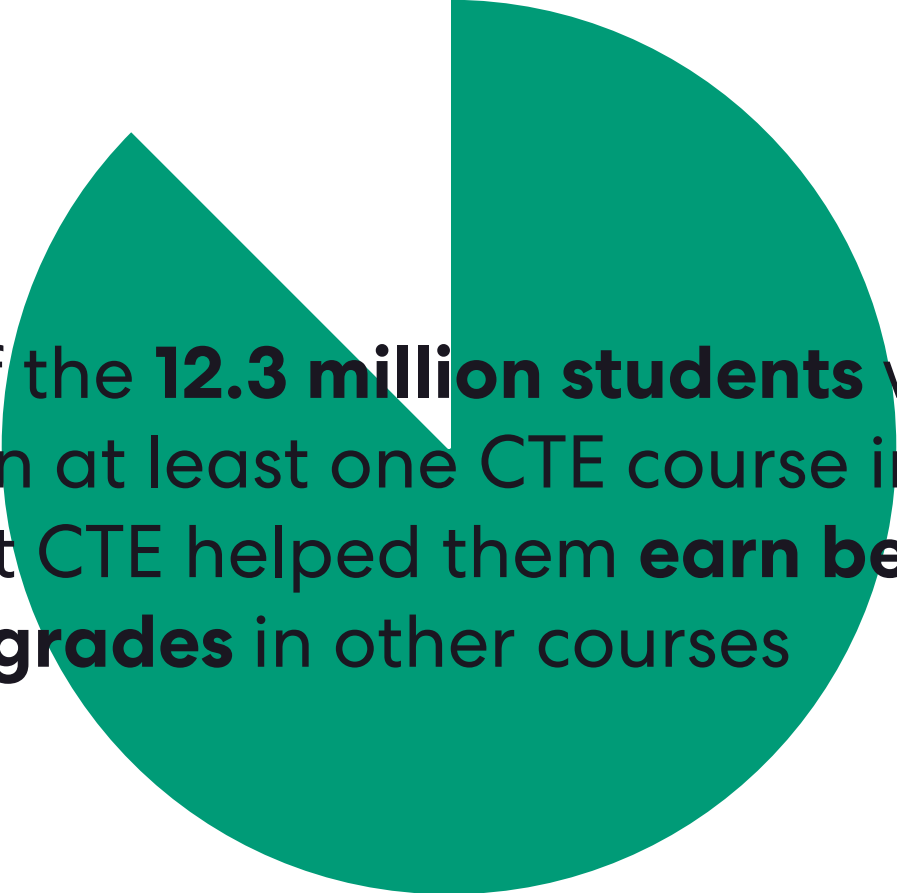
- Prepare students for in-demand jobs in skilled crafts
- Higher Graduation Rates
- Increased Understanding in Science and Math
- Teach Critical Soft Skills
- Help Students explore potential career paths

“CTE students were significantly more likely than their non-CTE counterparts to report developing problem-solving...and critical-thinking skills during high school”

- Lekes et al., *CTE Pathway Programs, Academic Performance and the Transition to College and Career*, National Research Center for CTE, 2007; SHRM and WSJ.com/Careers, *Critical Skills Needs and Resources for the Changing Workforce*, 2008

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Increased Understanding in Science & Math



70% of the **12.3 million students** who enrolled in at least one CTE course in 2018 say that CTE helped them **earn better grades** in other courses

What are **Career Technical Education** Programs? ...and why are they important?

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- **Teach Critical Soft Skills**
- Help Students explore potential career paths

“Soft skills like attention to detail, effective communication and critical thinking [are] the most in-demand skills in job candidates”

- Cengage Survey

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Build your Future, [4 Reasons Schools should Prioritize Career & Technical Education](https://byf.org/4-reasons-schools-should-prioritize-career-technical-education/), Kelsey Zibell, February 20, 2020; <https://byf.org/4-reasons-schools-should-prioritize-career-technical-education/>

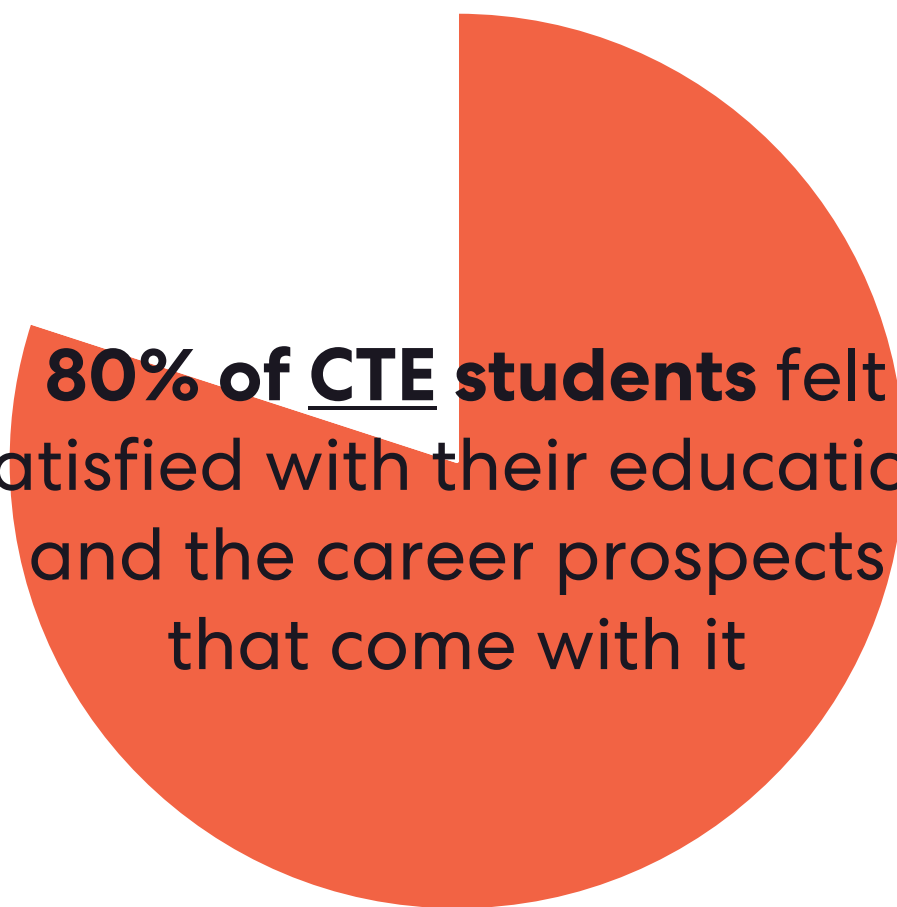
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“With CTE programs, students are able to see their options outside of traditional four-year colleges and get a head start on finding a career suitable for them.”

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Increased Understanding in Science & Math



80% of CTE students felt satisfied with their education and the career prospects that come with it



45% of all students surveyed felt satisfied with their education and the career prospects that come with it

Case Study: Developing a Successful CTE Program

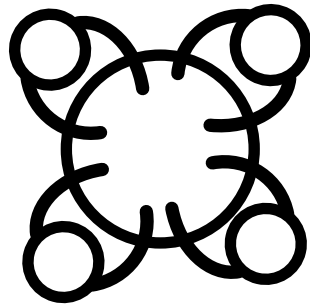
“CTE classes aren’t a last resort. CTE are for our students who are planning to go to college or who are planning on going into the workforce” - Sandra Oligney

Partnership Development

Who are the players?



Champion



**Industry
Council**



**Local / Regional
Government**



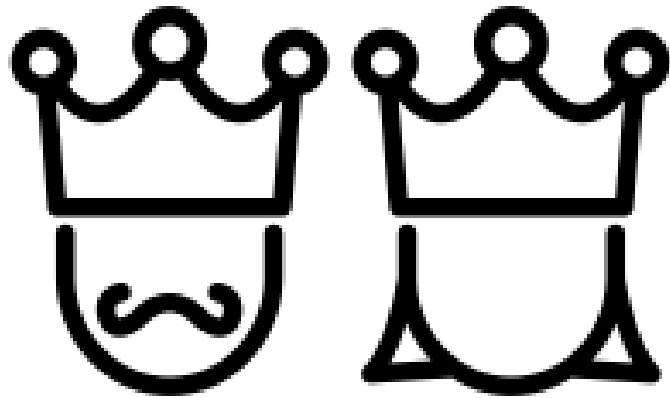
**2- & 4-Year
Institutions**



**Equipment /
Product
Vendors**

Project Champion

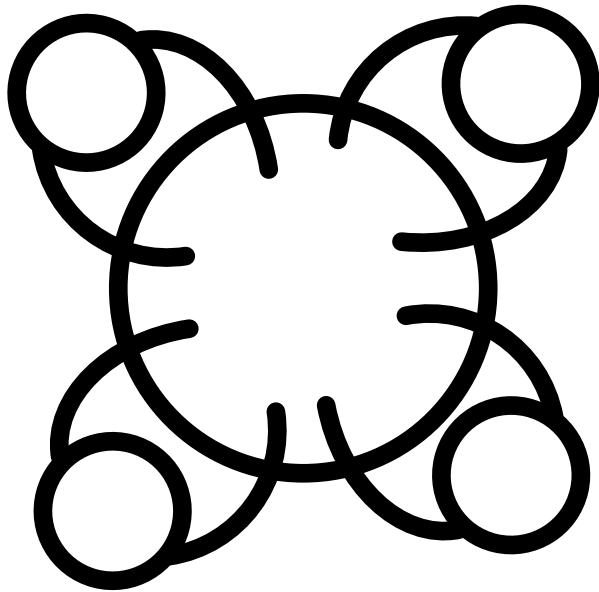
Who and Why?



- District Leadership
- School Leadership
- Champions and Drives the Program
- Brings Together the Players
- Builds and Maintains Momentum

Industry Council

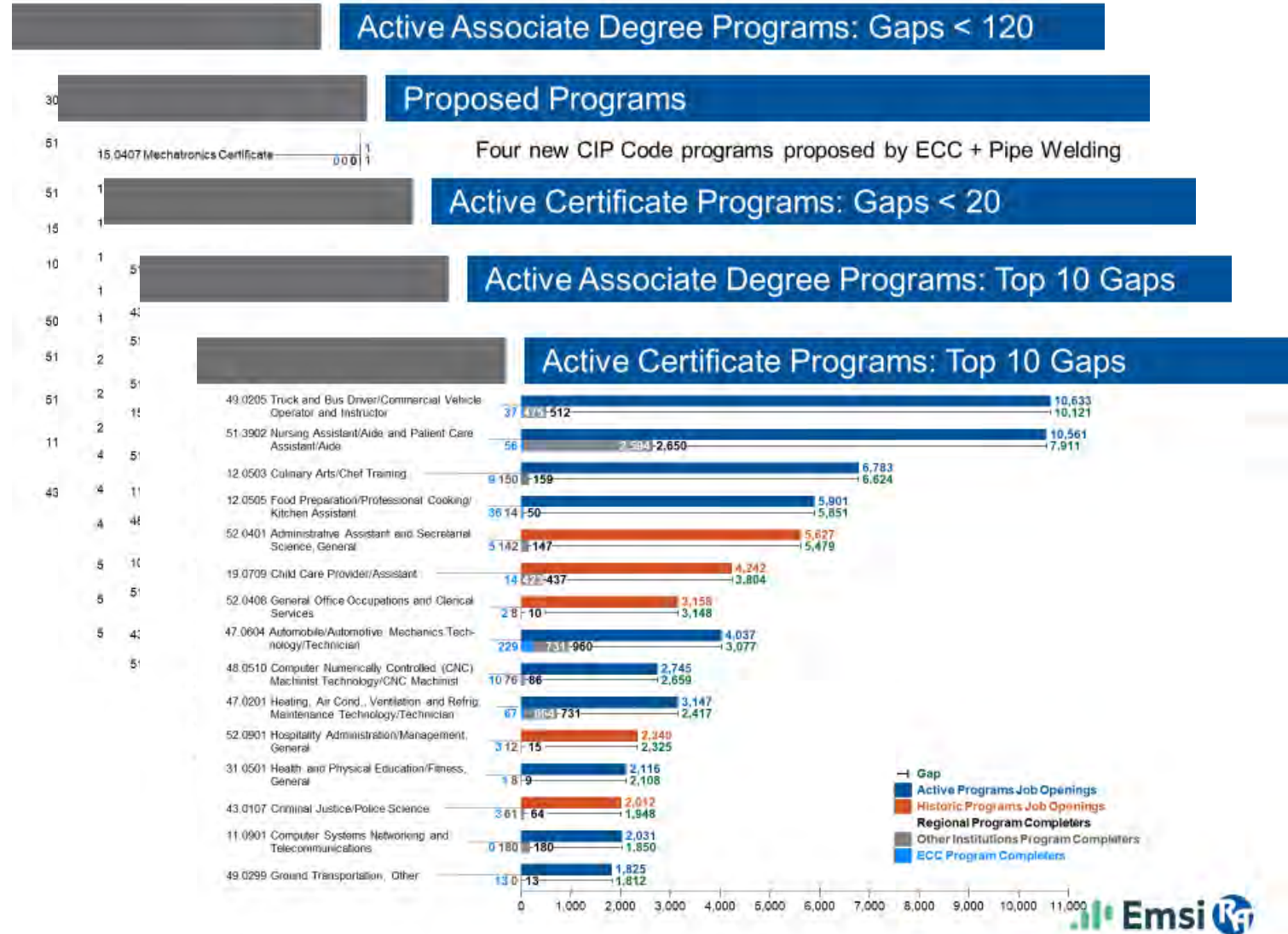
Who to bring to the Table?



- Local Businesses
- Industry Representatives
- Equipment / Material Vendors
- Higher Education Instructors
- Feeder Schools
- Peer Institutions

Leverage Local Government / 2- & 4-Year Institutions

Workforce Alignment & Gap Analysis



Leverage 2- & 4-Year Institutions

Certifications & College Credit



- College-credit and certificate level courses
- Instructor training & collaboration
- Facilities & resource sharing
- Bridging the instructional gap
- Continuing Education

Case Study – Proviso Township High Schools District 209



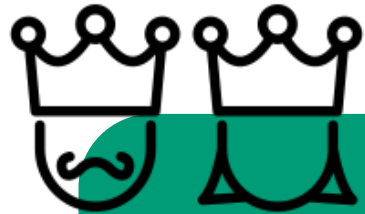
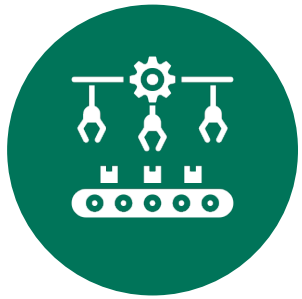
"Nothing But The Best"

- Three High School District
- Developed a Long Range Facilities Master Plan including a focus on re-energizing CTE programs
- Community Input
- Reinforcing College and Career Readiness

Proviso West High School
Original Electrical Technology Classroom



Original building had several CTE programs which were abandoned over the years.



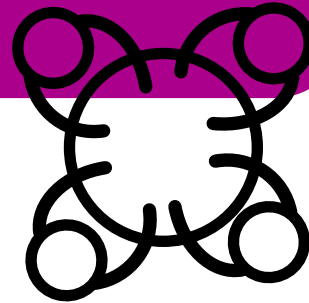
Identify Gaps in Local Workforce

Identify Program Champions



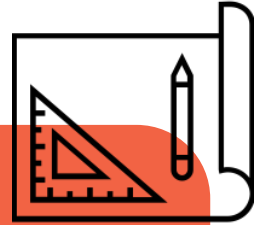
Develop Program Abstract & Goals

Identify Metrics for Success



Form Industry Council

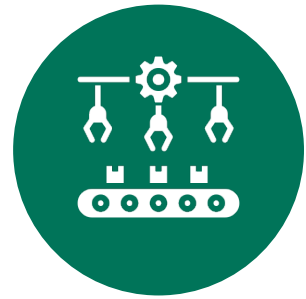
Confirm Gaps & Goals



Begin Design Process (Space & Program)

Tour Peer Institutions

Pathway Development



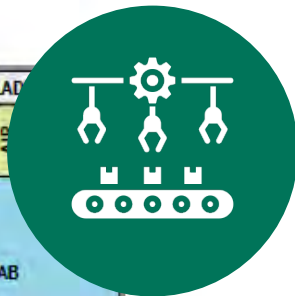
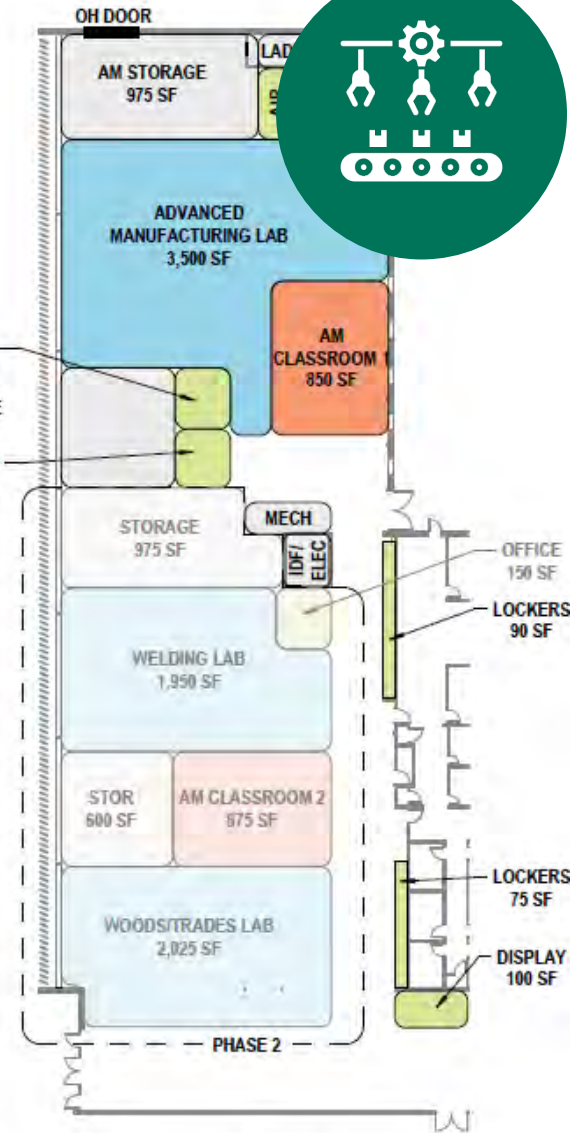
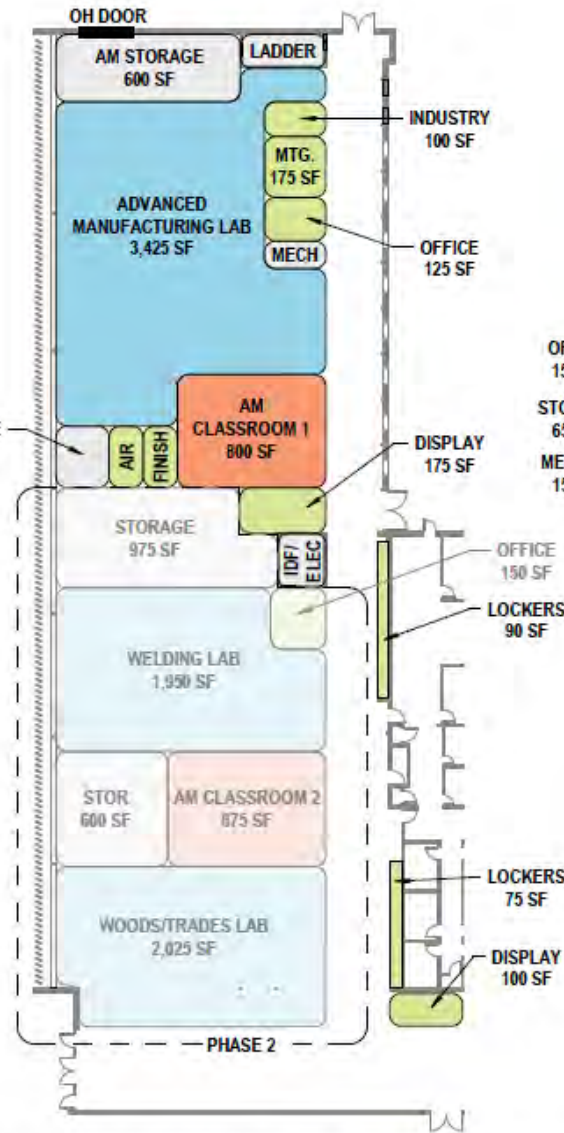
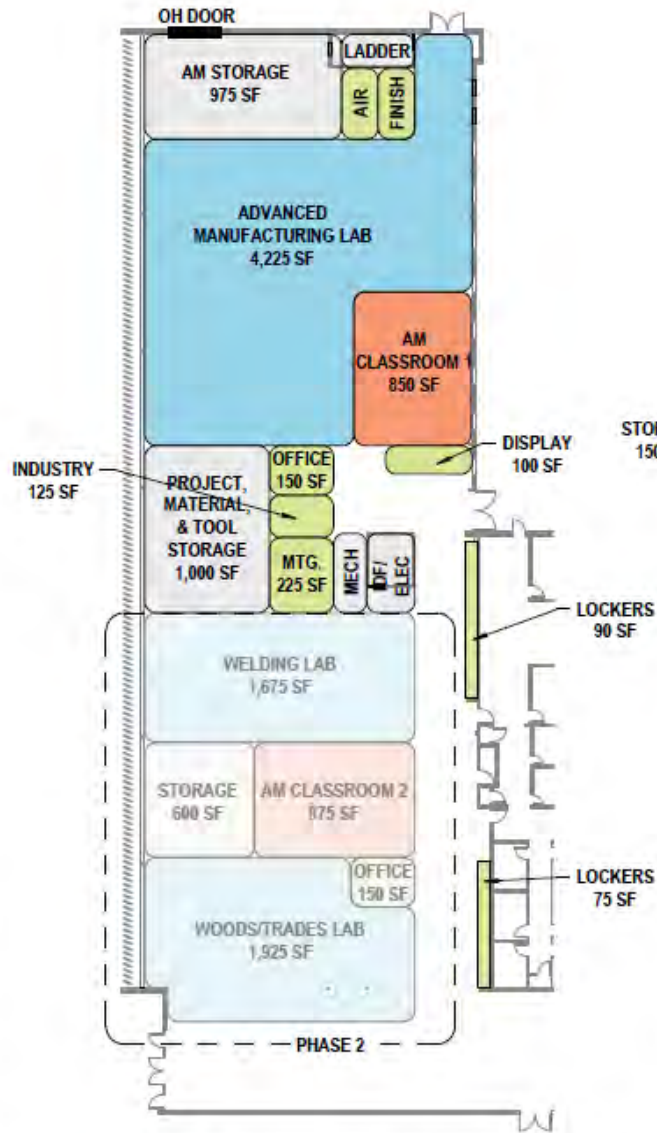
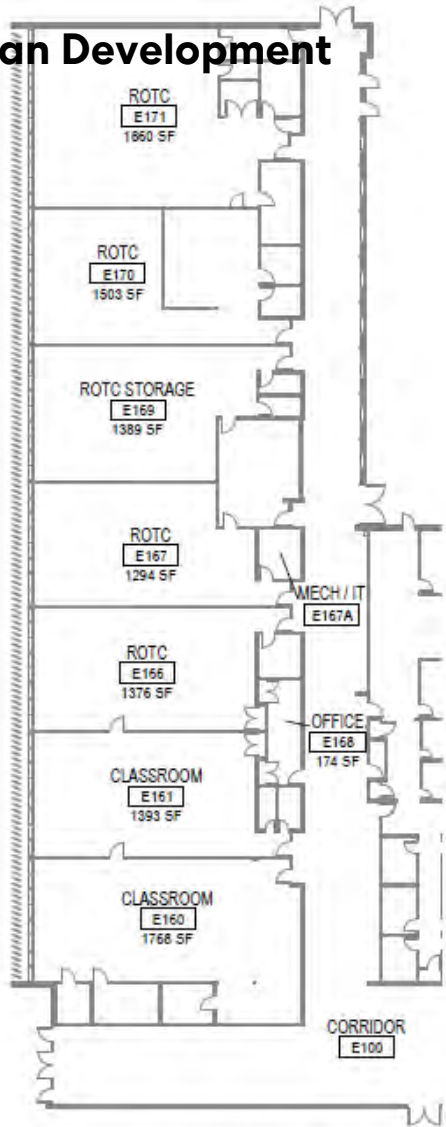
Pathway w/ Related Courses

Technology & Innovation Academy	
<p>PROGRAM OF STUDY: Advanced Manufacturing Career Path: Industrial & Engineering Technology Career Cluster: Manufacturing All sophomores will be assigned an English, Integrated Math II, and Chemistry course within their Academy Program of Study.</p> <ul style="list-style-type: none">• Required Courses:<ul style="list-style-type: none">○ Introduction to Engineering Design OR Foundations of Technology○ Mastery of Metals – Manual Mill & Lathe○ Mastery of Metals – CNC Design• Optional Dual Credit at Triton College:<ul style="list-style-type: none">○ Intro to Manufacturing (ENT 100)○ Fabrication Processes (ENT 116)○ CNC 1 (ENT 117)• Recommendation: Students in Advanced Manufacturing should challenge themselves by taking Honors and/or AP coursework, particularly in math and science. Students are also encouraged to take Technical Math.	<p>PROGRAM OF STUDY: Automotive Technology Career Path: Industrial & Engineering Technology Career Cluster: Transportation, Distribution & Logistics All sophomores will be assigned an English, Integrated Math II, and Chemistry course within their Academy Program of Study.</p> <ul style="list-style-type: none">• Required Courses:<ul style="list-style-type: none">○ Foundations of Technology○ Automotive Technology I○ Automotive Technology II• Optional Dual Credit at Triton College:<ul style="list-style-type: none">○ Intro to Automotive Technology (AUT 112)○ Fuel Management Systems (AUT 114)○ Automotive Electricity & Electronics (AUT 127)○ Brake & Chassis Repair (AUT 136)○ Automotive Power Plants (AUT 150)• Recommendation: Students in Automotive Technology should challenge themselves by taking Honors and/or AP coursework, particularly in math and science. Though students are encouraged to take Technical Math.

Dual Credit Offerings W/ Triton College

Safety & Operator Certification

Plan Development



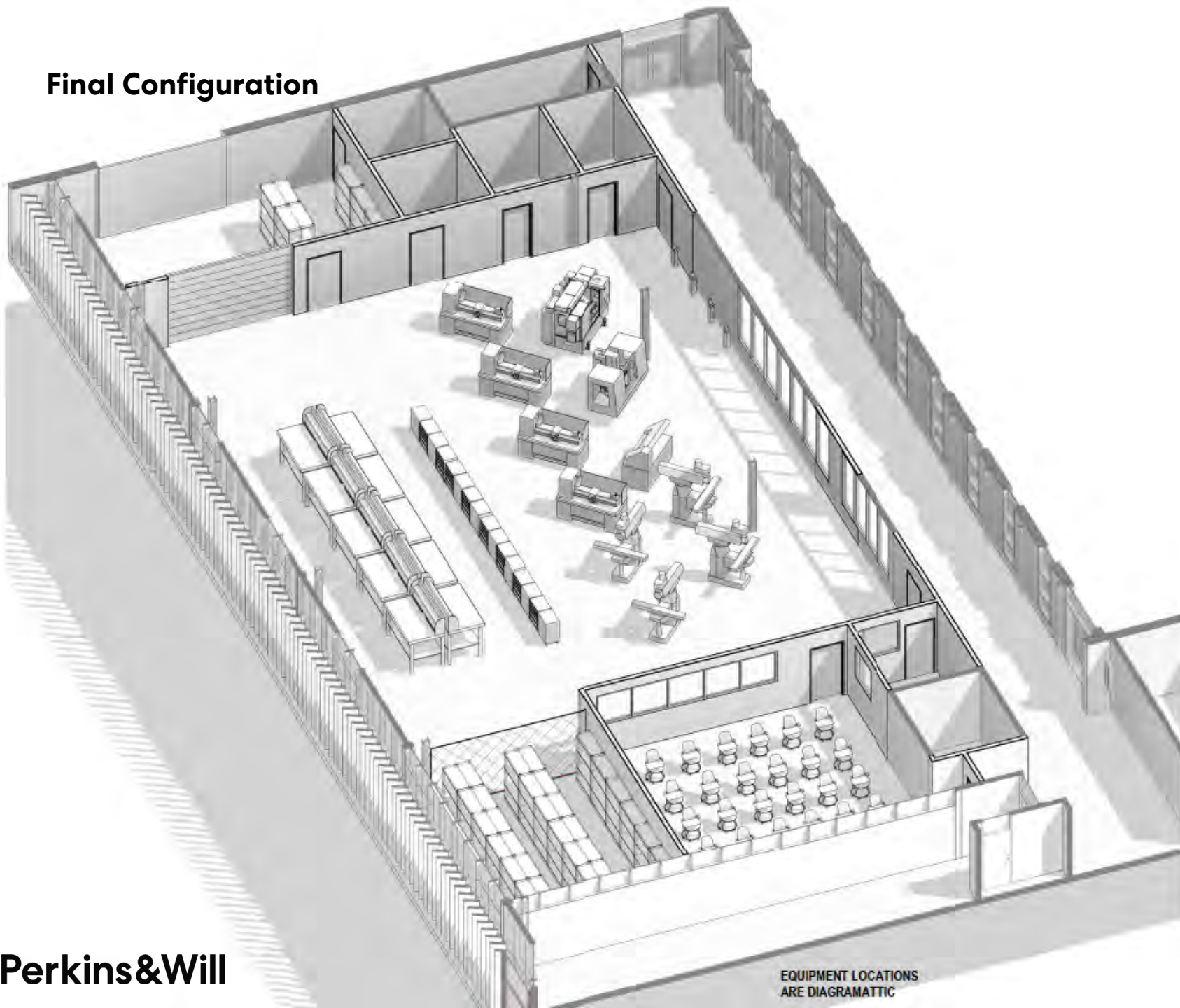
Ⓔ BLOCKING PLAN LEVEL 01 - CTE AREA, EXISTING
1/32" = 1'-0"

① BLOCKING PLAN LEVEL 01 - CTE AREA, OPTION 1.2
1/32" = 1'-0"

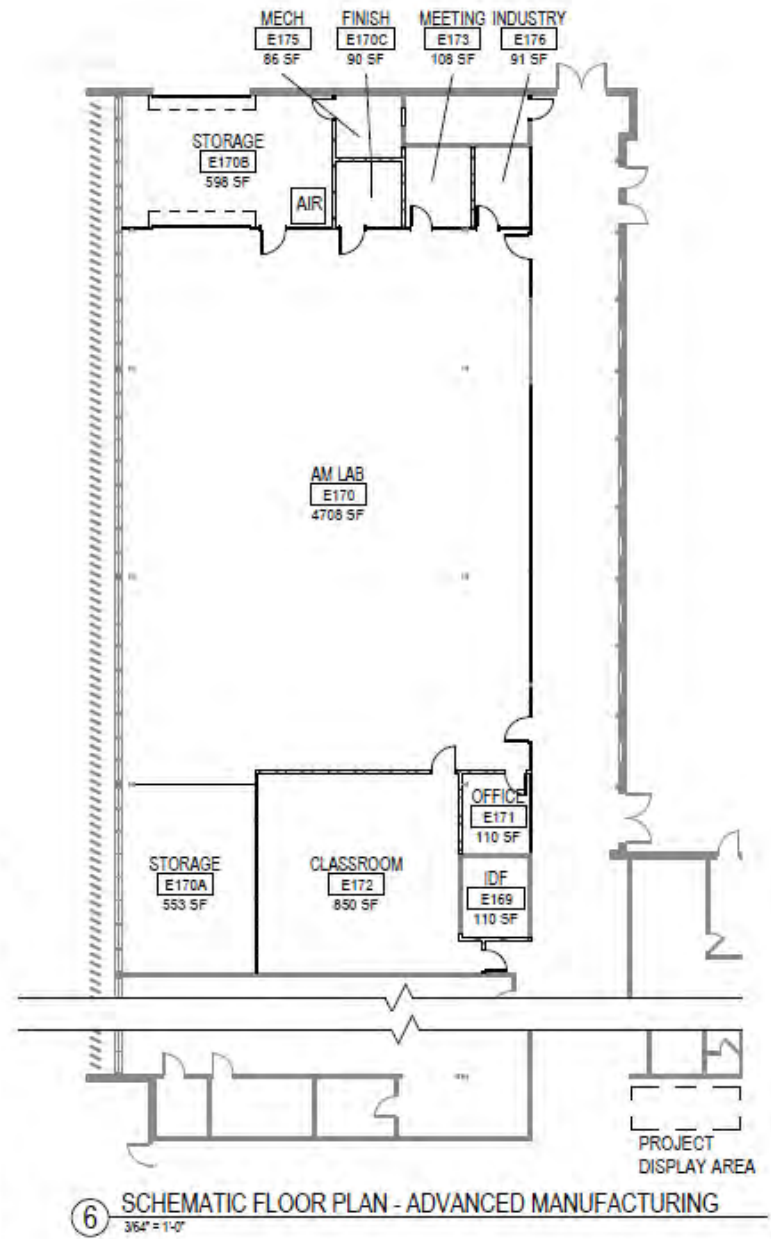
② BLOCKING PLAN LEVEL 01 - CTE AREA, OPTION 2.2
1/32" = 1'-0"

④ BLOCKING PLAN LEVEL 01 - CTE AREA, OPTION 4.2
1/32" = 1'-0"

Final Configuration

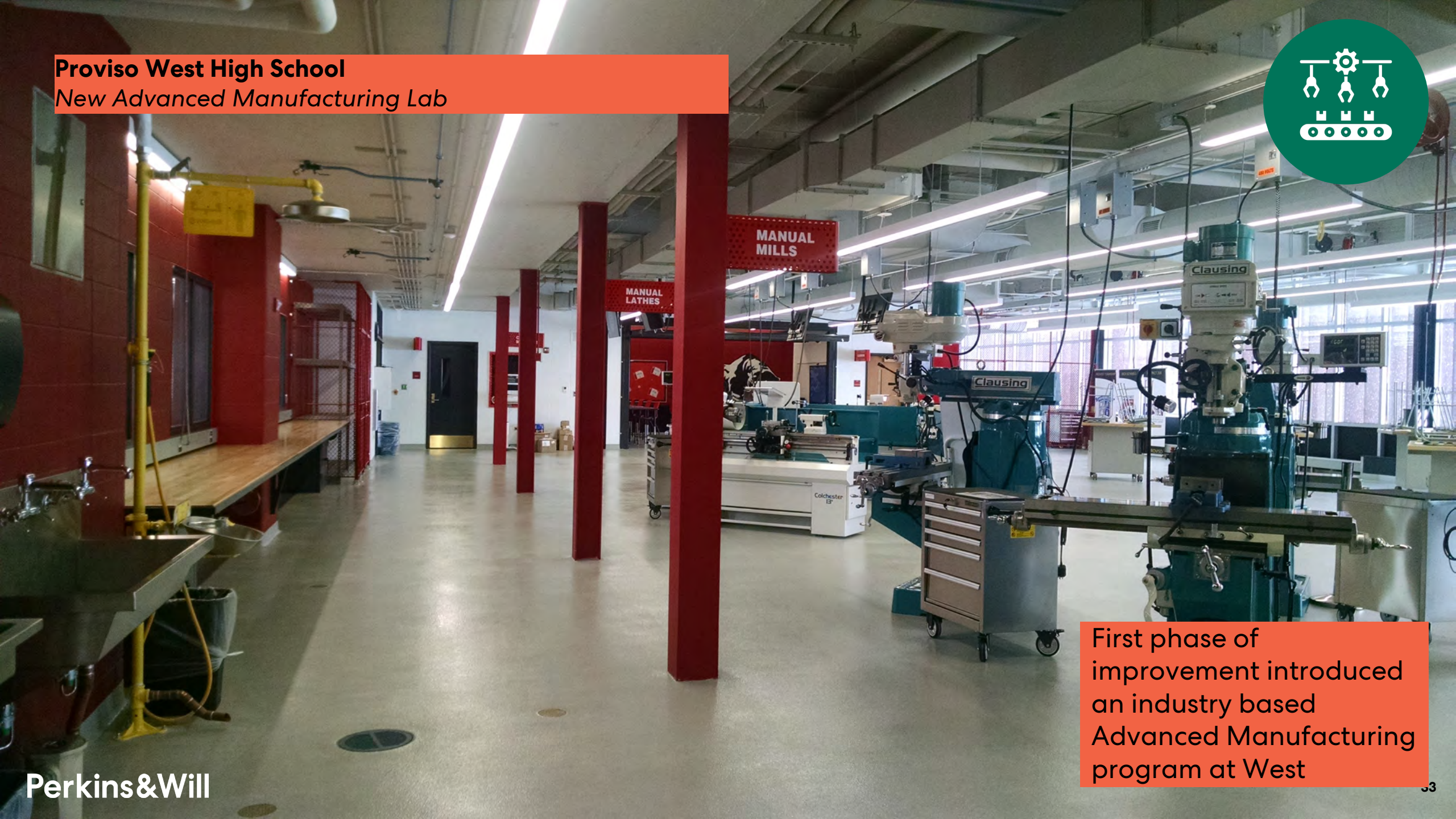
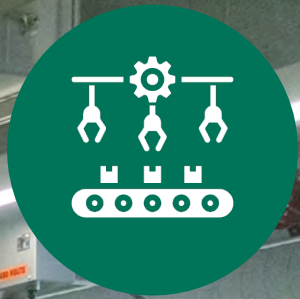


EQUIPMENT LOCATIONS
ARE DIAGRAMMATIC



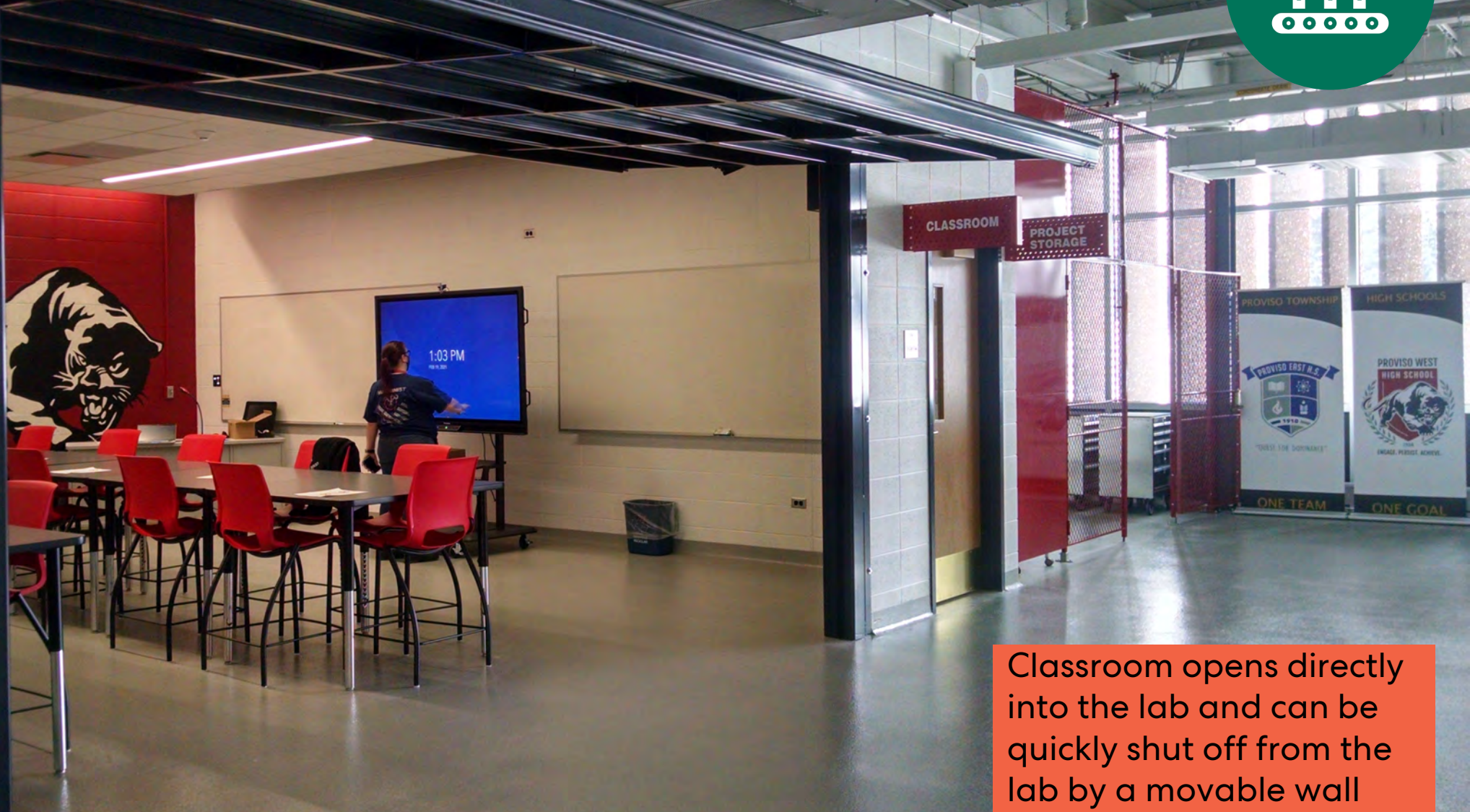
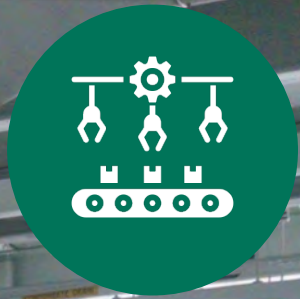
6 SCHEMATIC FLOOR PLAN - ADVANCED MANUFACTURING
3/8" = 1'-0"

Proviso West High School
New Advanced Manufacturing Lab



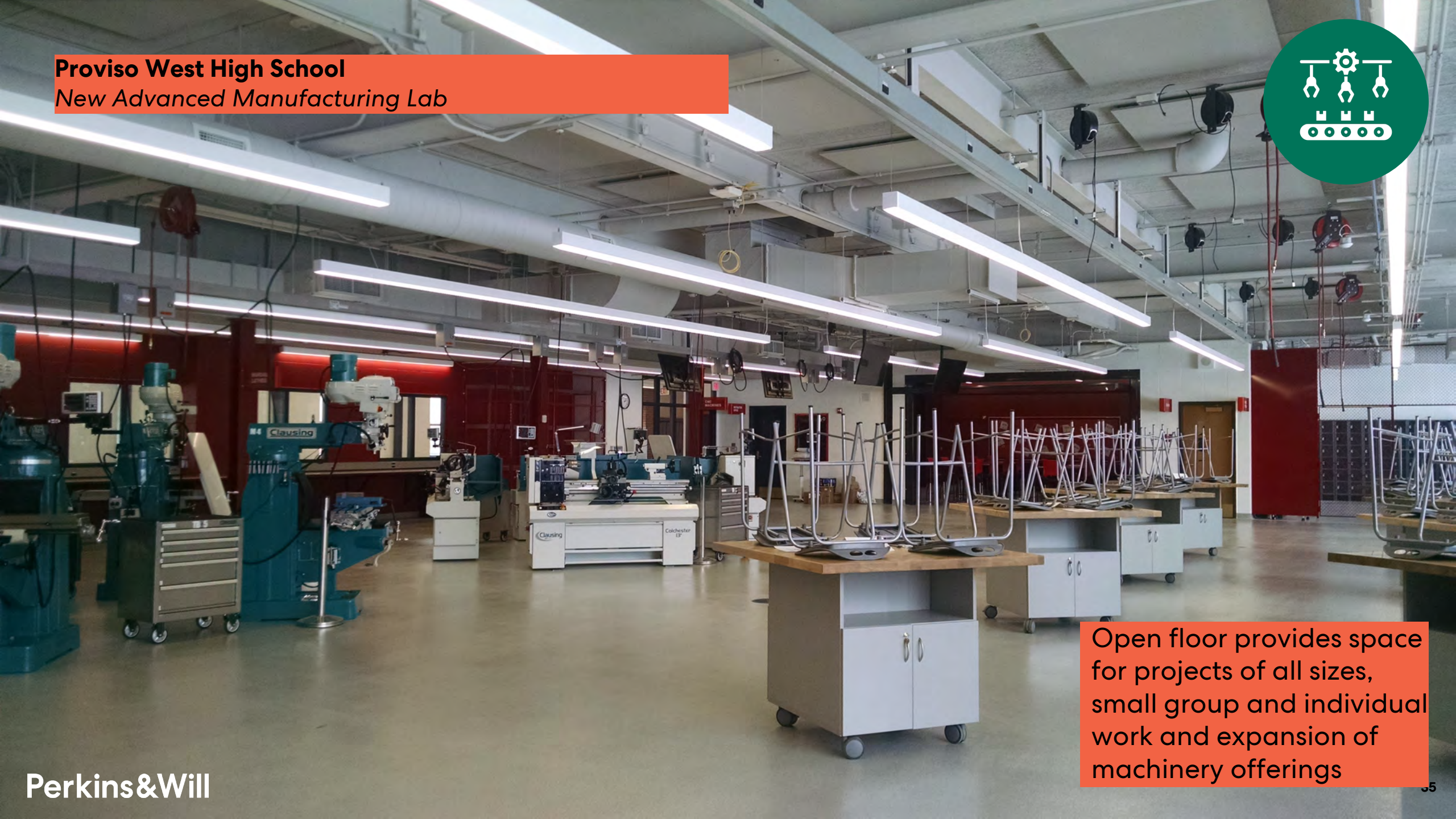
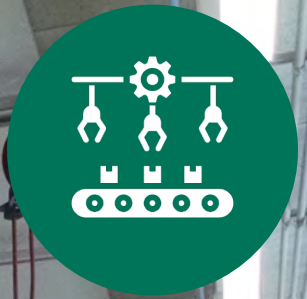
First phase of improvement introduced an industry based Advanced Manufacturing program at West

Proviso West High School
New Advanced Manufacturing Lab



Classroom opens directly into the lab and can be quickly shut off from the lab by a movable wall

Proviso West High School
New Advanced Manufacturing Lab



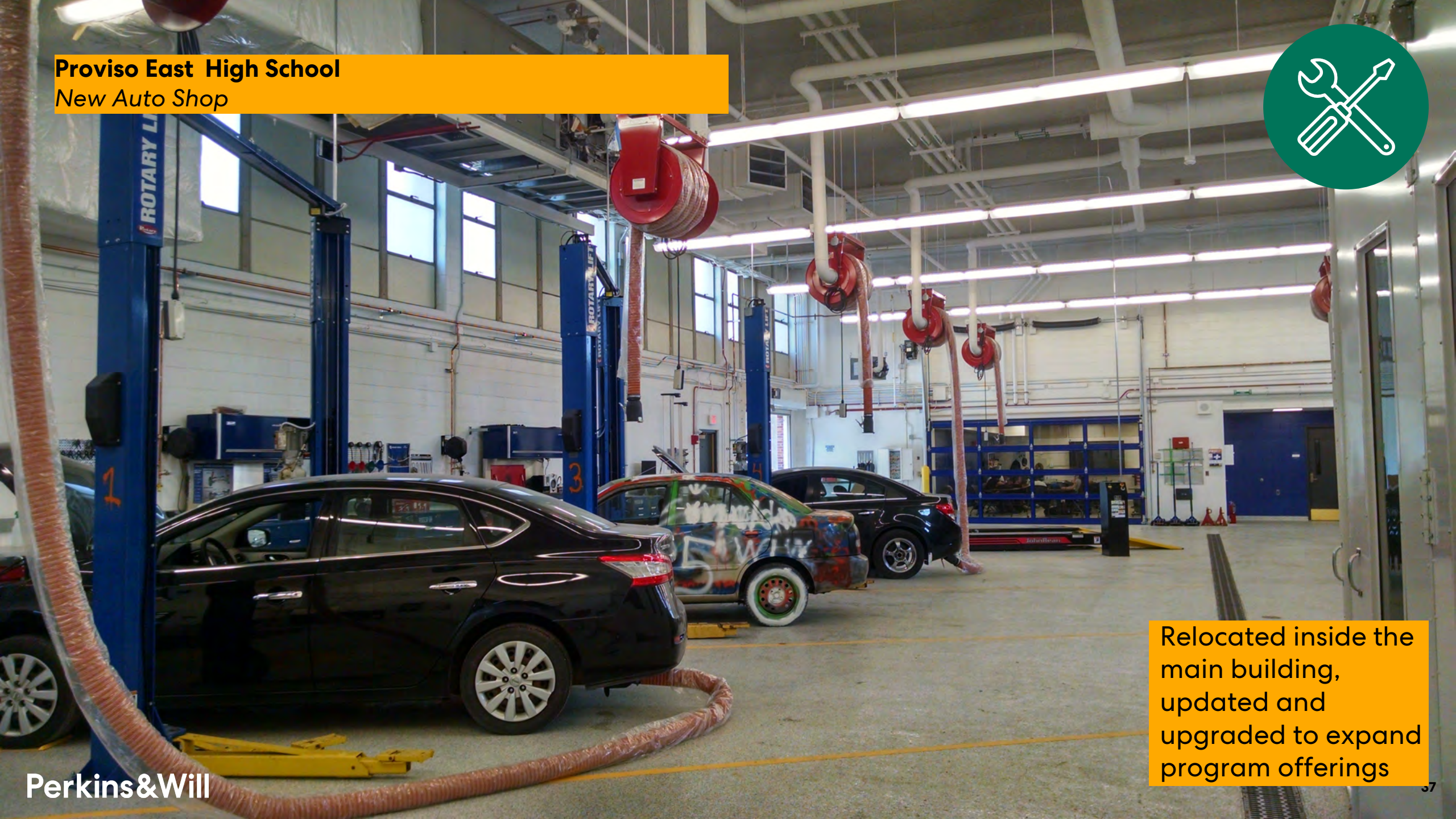
Open floor provides space for projects of all sizes, small group and individual work and expansion of machinery offerings

Proviso East High School
Original Auto Shop



Occupied an early 20th century aircraft hangar, separated from the main building

Proviso East High School
New Auto Shop



Relocated inside the main building, updated and upgraded to expand program offerings

Proviso East High School Original Culinary Arts Labs



Residential scale and equipment limited potential career-based training and programs

**Proviso East High School
New Culinary Lab**



Culinary lab space provides students opportunities for career skills development

**Proviso East High School
Culinary Arts Demonstration Classroom**



**Demonstration
classroom reach out
to a wider range of
students for
introductory courses**

Thank you!

Comments / Questions

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