

CREATE

MENTORING PROGRAM

To educate and inspire students to pursue career pathways that create the built environment.

2022 Project Problem Statement

Issued: August 25, 2022

Introduction:

Shipping containers are a readily-available and self-supporting structure, which can be altered to accommodate various spatial needs. They provide a great opportunity to quickly and affordably meet a community's needs and can be replicated and scalable. This makes them a popular choice in the below examples of functions.



The CREATE Advisory Board invites proposals for the creation of a community service structure made from shipping containers. The building must fill a critical need in your community today (research will be required!) while meeting the following parameters:

- Your project must include a minimum of two (2) shipping containers, and no more than three (3) shipping containers. One (1) of these must serve the public; the other(s) can be support structures.
- Your project must maintain accessibility for all - this is not a code-driven requirement, but instead needs to inform your layout and placement and access to our project for both public and for staff (if any). Accessibility for all is to focus on ensuring that access is equal and that potential barriers are removed.
- The shipping containers may be clad in an appropriate material for your chosen service/use/clientele.
- The project budget is \$1 million. Cost estimates are required as part of Deliverable #2.
- The shipping containers should include all functions necessary to serve their intended purpose. This may include but is not limited to:
 - Temporary housing
 - Restroom/wash/cleaning facilities
 - Health/mental health/wellness services
 - Repair services (car, bike, etc.)
 - Food services
 - Recreational services
 - Other community need

A program of the
Construction Industry Education Foundation



Program Requirements: All submittals can be uploaded to www.creatementoring.org/submit.

O.1) All students participating in the CREATE Program **must** register online by **September 23, 2022**, in order for the team to receive points.

O.2) Complete and return the Parent/Guardian Release Form and Student Commitment Form by **September 23, 2022**. Forms are to be submitted to the classroom teacher. The classroom teacher will compile it into a single document and submit it via the link above.

O.3) **Trades Day – Must be submitted by December 1, 2022.**

- Nevada County: October 11, 2022
- San Joaquin: October 18, 2022
- Chico: November 8, 2022
- Sacramento: November 17, 2022
- For other locations, visit TradesDay.org.

- Percentage of Student Attendance = 0-10 pts
- Online Form & 2-3 Photos of Event. Due November 3rd = 0-5 pts

SCHOOLS UNABLE TO ATTEND A TRADES DAY MUST EITHER SCHEDULE A VIRTUAL FIELD TRIP WITH A SUBCONTRACTOR, OR AN IN-CLASSROOM VISIT WITH A MINIMUM OF TWO HANDS-ON DEMONSTRATIONS. AN ATTENDANCE LIST, ONLINE FORM, AND 2-3 PHOTOS SHOULD BE SUBMITTED ON THIS EXPERIENCE IN ORDER TO RECEIVE POINTS IN PLACE OF TRADES DAY.

O.4) Requests for Information (RFI's) by **October 7, 2022**, no later than 5 pm. Submissions may be made online using the RFI link located at www.creatementoring.org/submit.

O.5) Presentation Day: **December 6, 2022** (presentation slides due **December 1, 2022**, no later than 5 pm).

Deliverable Requirements: (Point totals are as indicated. Where no point total is given, the deliverable is considered pass/fail)

Deliverable 1 - Due 10/14/22

1.1) Needs Assessment (300-500 words) = 0-5 pts

- What is the objective of your project? Who are the end users and what need(s) are you fulfilling in your community? What components do your shipping container modules require to effectively serve the community? Examples of needs include:
 - Access to water and/or food
 - Seating
 - Shade
 - Internet access
 - Restrooms
 - Washrooms
- Provide two (2) sources from your research for why this project fulfills a need in your community. This is specific to your community/area and can be survey data, proximity data (the next closest option is ___ away), statements/quotes from community members, etc. that provide evidence of the existing need.
- Describe the basic function of each of your shipping containers.
- What other material(s) will you incorporate into your shipping container and why did you choose those materials? What would be required to meet your stated use that will need to be added/altered in your shipping container?

1.2) Diagrams/Hand Sketches = 0-10 pts

- Find a site in your community and provide a Google Earth aerial image of it.
- Provide a circulation diagram showing pedestrian and vehicular access, the orientation of your shipping containers, and flow/access to them as line diagrams on the site image you have provided. Include a legend for each and notations for specific access needs, including and not limited to public, staff, parking or stopping spaces (car, bike, etc), gathering areas (if part of your program), trash, etc.
- Minimum 1 site plan sketch required per student. These sketches will be submitted as a single document.

1.3) Create a media post about your project concept and tag the Construction Industry Education Foundation = 1pt

- All seniors and scholarship applicants are encouraged to follow the CIEF LinkedIn page.

Deliverable 2 - Due November 11/10/22

2.1) 50% ("half complete") Construction Document Project Floor Plans = 0-10 pts

- Architectural floor plans for each shipping container, which should respond to and incorporate the needs assessment submitted for Deliverable #1. All spaces should be identified along with anticipated major casework, fixtures, and furniture.
- Only one set of floor plans should be submitted per team.

2.2) Selection of Engineering Component = 0-4 pts

- List choice of an engineering concept to design (structural, mechanical, electrical, civil, stormwater or environmental, etc.).
- List the name, discipline, and email of the mentor who will assist with the engineering component.
- Research and give a minimum of two (2) examples of what the final submission of your engineering component will look like (i.e. single line electrical diagram, structural framing plan, plumbing plan, bioswale plan, etc.).

2.3) Cost Estimate = 0-10 pts

- Using the floor plan, the CREATE-provided materials list (see appendix B), and your engineering component, develop a schematic cost estimate.
- Requests for Information (RFI's) regarding Cost Estimates ONLY must be submitted by: **November 1, 2022**, no later than 5 pm. Submissions may be made online using the RFI link located at www.creatementoring.org/submit.

2.4) Field Trip & 2-3 photos = 0-5 pts

- Submit field trip photos online using the submission link

2.5) Trades Component Idea = 0-5 pts

- *Describe* the choice of what will be built as the to-scale Trade Component Physical Model (wiring, finishes, plumbing, etc.).
- List the name, discipline, and email of the mentor, who will assist with the trades component.

Deliverable 3 - Due 12/1/22

3.1) Electronic Copy of Slide Presentation must include:

- Team Concept, Research, and Reasoning = 0-5 pts
- Completed (100%) Construction Document Project Floor Plan(s) with annotations = 0-10 pts
- Final submission of your Engineering Component (i.e. single line diagram, structural framing plan, or plumbing plan for your specific project) = 0-10 pts
- Cost Estimate = 0-5 pts
- A photo of your Trades Component Physical Model = 0-10 pts
- Minimum of three (3) 3D Rendering or Images to include the overall 3D site, the elevation of a primary shipping container, and the user's choice. All views must clearly be labeled in your presentation (i.e. "Elevation from southwest") = 0-10 pts

3.2) Team video = 0-10 pts

- Create a video of either:
 - a Public Service Announcement (PSA) that pitches your idea to someone that may fund your project (i.e. the public, a philanthropic organization, or mogul), OR
 - a mentor-recruitment pitch for the CREATE program.
- All videos should be 60-90 seconds.
- Team video will be played during your presentation. Please be sure to account for the length of your video during your presentation time.
- All team members must be shown or have a role in the production of the video.
- Extra credit will be given to those that post their announcement on social media (tag the Construction Industry Education Foundation) and achieve a minimum of 30 reactions.

Competition Day - 12/6/22

4.1) Presentation (10-12 min) = 0-10 pts

- Discuss all components in the slide presentation & anything else essential to the project.
- Allot time in your presentation to play team video for judges.
- All team members present should speak in the presentation.

4.2) Physical Mock-Up of Trades Component= 0-10 pts

- Bring the to-scale model of the Physical Model of the Trades Component to the presentation. Examples may include a wall section, a plumbing fitting, duct assembly, flooring section, or any other component of the building. Make sure to reference the model during your presentation.

Total Points = 145

For questions on the CREATE Mentoring Program, outside of RFIs, please contact:
Katie Kempker | Director of Youth Programs | kkempker@cie.foundation | 916.465.8346

Appendix A - Point Recap Table
Appendix B - CREATE Materials list



CREATE Mentoring is a program of the Construction Industry Education Foundation.
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Appendix A - Point Recap Table

Program Requirements	
Student Registration/Parent Release Forms	
Trades Day	15
Deliverable 1	
1.1 Needs Assessment	5
1.2 Diagrams/Hand Sketches	10
1.3 Media Post	1
Deliverable 2	
2.1 50% Construction Document Floor Plans	10
2.2 Selection of Engineering Component	4
2.3 Construction Site Logistics Plan	10
2.4 Field Trip	5
2.5 Trades Component Idea	5
Deliverable 3	
3.1 Team Concept, Research, Reasoning	5
Completed Architectural Floor Plan	10
Engineering Component	10
Cost Estimate	5
Photo of Physical Model	10
3D Rendering	10
3.2 Team Video	10
Competition Day	
Presentation	10
Physical Mock-Up	10
Total Points	145

Competition Day - Curve Ball

This will be a separate award in 2022

Appendix B - CREATE Materials List

ITEM DESCRIPTION	DISCIPLINE	COST PER UNIT	UNIT
CIVIL SITEWORK (Outside of the "Connexes")			
Mass Grading	CIVIL - SITE	\$150,000	ACRE
Degrub/Clear - Tree	CIVIL - SITE	\$5,000	EACH
Degrub/Clear - Bush	CIVIL - SITE	\$880	EACH
Degrub/Clear- Ground Cover	CIVIL - SITE	\$50	SF
Concrete flatwork AKA "sidewalk" (non structural) - form, place, finish and protect/clean	CIVIL - SITE	\$8	SF
CIVIL UTILITIES (Outside of the ""Connexes")			
6" fire water PVC pipe excavate, install, test & backfill	CIVIL - UTILITIES	\$80	LF
Fire Hydrant install and connect	CIVIL - UTILITIES	\$400	EACH
4" domestic water supply PVC pipe, excavate, install, test and backfill	CIVIL - UTILITIES	\$50	LF
6" Storm drain pipe	CIVIL - UTILITIES	\$30	LF
4" domestic water meter	CIVIL - UTILITIES	\$5,000	EACH
4" area drain assembly	CIVIL - UTILITIES	\$125	EACH
STRUCTURAL			
Conex box	STRUCTURAL	\$30,000	EACH
Mat Slab Foundation - Excavate, Form, Place and Finish	STRUCTURAL	\$30	SF
8" Round or 2' x 2' or smaller Connex opening - cut and grind smooth	STRUCTURAL	\$150	EACH
8" Round or 2' x 2' or larger Connex opening - cut, reinforce and grind smooth	STRUCTURAL	\$350	EACH
MECHANICAL			
Natural gas fueled packaged 2 ton HVAC unit	MECHANICAL	\$15,000	EACH
Overhead 12" circular duct installed with diffusers	MECHANICAL	\$30	LF
Exhaust register to exterior (add connex hole from above)	MECHANICAL	\$24	EACH
ELECTRICAL			
Electrical meter	ELECTRICAL	\$750	EACH
100 Amp Electrical Panel	ELECTRICAL	\$250	EACH
Overhead feeder to electrical meter	ELECTRICAL	\$100	LF
Branch conduit and wire to fixtures or to outlets for power	ELECTRICAL	\$14	LF
LED interior light fixture	ELECTRICAL	\$225	EACH
LED exterior light fixture	ELECTRICAL	\$250	EACH
Receptacle	ELECTRICAL	\$75	EACH
Telephone/Data backbox	ELECTRICAL	\$35	EACH
Telephone/Data cabling	ELECTRICAL	\$1.50	LF
PLUMBING			
2" Waste line and lateral connection to civil pipe outside of building (Assume Underground)	PLUMBING	\$68	LF
3/4" Cold water supply line	PLUMBING	\$65	LF
1" Gas Line	PLUMBING	\$90	LF
Hand Lavoratory (sink) - wall mount with manual faucet	PLUMBING	\$2,500	EA
Dual Compartment Food Service Sink -counter sink with manual faucet	PLUMBING	\$2,000	EA
ARCHITECTURAL FINISHES			
Demising Wall - Metal stud (16" On Center 18 gauge) with two sided drywall	ARCHITECTURAL	\$100	LF
Furring Wall - Metal stud (16" On Center 18 gauge) with one sided drywall	ARCHITECTURAL	\$85	LF
Paint 3 coats	ARCHITECTURAL	\$25	SF
Acoustical Panel	ARCHITECTURAL	\$60	SF
Acoustical T-bar Ceiling	ARCHITECTURAL	\$75	SF