

Net zero launch

Overview

You are an architect who must prepare an action plan for a local federal building to meet the net zero goals outlined in Section 433 of the Energy Independence and Security Act. Students will explore concepts related to sustainability, resiliency, energy, and materials. Students will demonstrate their understanding of what methods, strategies, and materials can move a building toward the net zero energy goals.

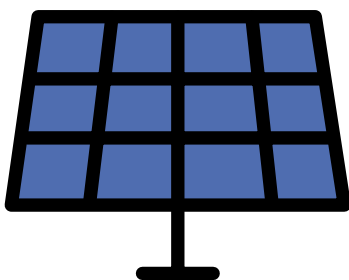
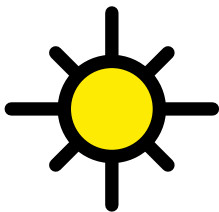
Scenario

You are an architect. The partners in your firm have asked you to review the Energy Independence and Security Act (EISA), Section 433; find a noncompliant federal building in your state that will need to be updated with energy efficient materials; and create a plan of action for the building managers to implement the necessary changes to achieve zero net energy. You will need to learn all you can about Section 433 of the EISA and what methods and strategies are available to update older federal buildings to achieve the net zero goal. The partners at your firm have given you three weeks to submit your plan of action.

Driving questions

The driving questions were developed to encourage you to explore the current realities of communities and individuals to be served. The questions will aid you in developing empathy to understand how others might be feeling about a problem, circumstance, or situation.

1. What does it mean to comply with the Energy Independence and Security Act (EISA) Section 433 and how can a local federal building achieve net zero energy?
2. What is a net zero structure?
3. What strategies and materials are needed to move a building toward a net zero energy goal?

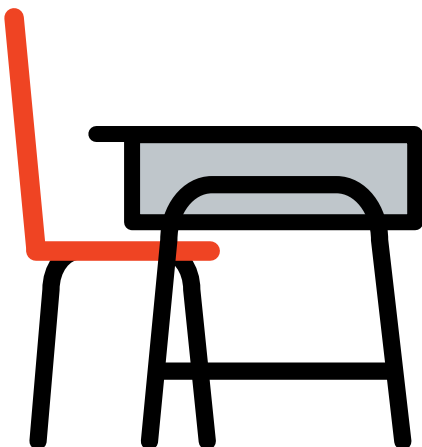


Understanding, Research, Define, and Ideation (U-RDI)

Understanding

Understanding is the process of gathering information to inform what you need to know about a topic. The use of a graphic organizer can help you analyze two aspects of a problem. We are suggesting a T-Chart to explore your “know” and “need to know”.

Know	Need to know
<ul style="list-style-type: none"> • You are an architect. • You have been asked to review the Energy Independence and Security Act, Section 433. • You have been asked to find a federal building in your state that is noncompliant with the Energy Independence and Security Act, Section 433. • You will be in charge of creating a plan to update a federal building with energy efficient materials to make it compliant with the Energy Independence and Security Act, Section 433. • You will need to learn about the Energy Independence and Security Act, Section 433. • You will need to learn about methods and strategies that will make a building net zero. • You will need to present your plan of action in three weeks. 	



Research

Research is the process of examining as much data as possible to have an informed idea for your problem.

Problem specific resources

- [AIA - Designing for Equitable Communities](#)
- [10 Key Components for Building Healthy, Equitable Communities](#)
- [EPA - Creating Equitable, Healthy, and Sustainable Communities](#)
- [Tips for Connecting Learners to their Community](#)
- [The 7 Universal Design Principles](#)
- [Engaging Everyone](#)
- [Designing More Equitable Cities](#)
- [Simple Machines Article](#)

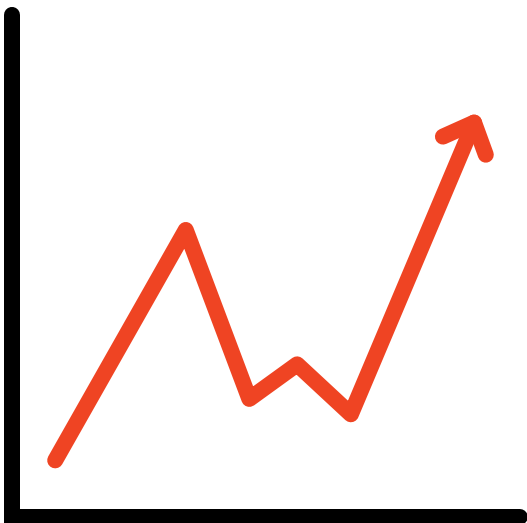
Hands-on activity

- [Simple Machines Activities](#)

Define your problem using empathy

Architects work to define problems before coming up with a solution. They use empathy in defining a problem. This allows them to define a problem using multiple perspectives.

Now that your research is done, define your problem!





Ideation

During ideation you will develop as many possible solutions as possible to the problem base on your defined problem. Do not limit your solutions!

Once you have listed all your possible solutions in the box below, cross out those that are extreme or refine them to be more practical.

Possible solutions: