Maine Student Energy-Efficient Building Design Challenge ’08-‘09

Maine students and teachers: Put your creativity, design and building skills to the test.

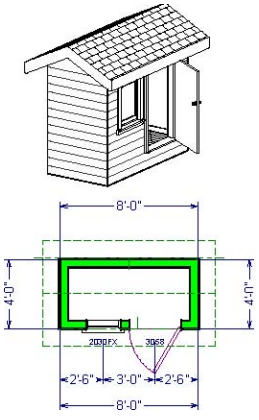
Making energy-efficient buildings has never been as important as it is now. And the ideas and answers that really work can come from anywhere—why not from you?

What’s the challenge?

Make a small (but life-size) model building that stays as warm as possible when left outside unheated over a 24-hour period.

Who can take part?

Students and teachers from schools and Career and Technical Education centers anywhere in Maine. Each participating team will include a teacher from both a Career and Technical Education center and one of its sending high schools, and will involve students from both places. Multiple school scan also be involved in a single team.



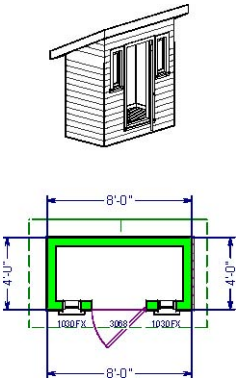
Design example A

What are the design and construction rules for buildings?

Buildings for the design challenge must:

- ◊ Have a 4' × 8' footprint*
- ◊ Be designed with ceiling clearance that allows a 6' upright pole not to touch the ceiling at any interior point
- ◊ Include window area of at least 6 square feet*
- ◊ Have an enclosed volume greater than 224 cubic feet, as calculated from external structure dimensions*
- ◊ Have a door through which a judge can enter the building
- ◊ Be able to be transported from the team’s school to the Capital Area Technical Center for judging
- ◊ Be constructed on a budget of $500 or less

*See examples (Note: These are examples only — creativity is encouraged!)



Design example B

How will our building’s energy efficiency be judged?

Buildings will be judged by two criteria: How well they reduce heat loss and how well they maximize heat gain. Each team will be designated an 8' circle on the CATC grounds in which to place its building. Building doors will be opened for one hour on the day prior to judging, so that all buildings begin at the same internal temperature. The doors will be closed, and the buildings left for a 24-hour period. At the end of the 24 hour period, judges will read the minimum and maximum temperatures reached inside each building. The building with the highest *minimum* temperature (least heat loss) and the building with the highest *maximum* temperature after 24 hours will be considered the winners.

Timeline and entry deadline

Teams may construct buildings at any time. Teams will be responsible for transporting their buildings to the Capital Area Technical Center no later than 9AM on May 3 for judging on May 5, 2009.

FMI: Contact Scott Phair at sphair@augustaschools.org or Lynn Farrin at lfarrin@mmsa.org.

An initiative of the statewide SCITEC Network, a grant-funded program supported by the Maine Department of Education

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Sanford Area: Sanford Regional Vocational Center • Marshwood High School • Massabesic High School • Noble High School • Sanford High School

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