



2009-10

FREQUENTLY ASKED QUESTIONS

NOTE: The answers below are not separated by Challenge. In some instances, the specific challenge of the inquirer is indicated. In all cases, it should be obvious to competitors which items pertain to their Challenge.

STUDENTS ARE ENCOURAGED TO DISCUSS DESIGN ISSUES WITH THEIR FACULTY ADVISOR FOR GUIDANCE. COMPETITION MANAGEMENT AND THE CHALLENGE CREATOR CANNOT GIVE SPECIFIC DESIGN ADVICE. IT IS UP TO STUDENTS AND THEIR ADVISORS TO DETERMINE THE BEST DESIGN FOR THE GIVEN PARAMETERS.

REVISED April 15, 2010

1. *Challenge 1* - Does a Green Roof satisfy part of the 50% exterior landscape area required in the program?
A: A green roof does not satisfy part of the 50% landscape area requirement. A 2-story building is required.

2. *Challenge 1* – Can exterior circulation area be included in the required 40% circulation space listed in the program?
A: Building circulation may be moved to the exterior. It is recommended that exterior circulation be covered to protect students and staff from winter rain.

3. *Challenge 1* - If we choose to design exterior classrooms, interview rooms, or offices does this satisfy the requirements within the program?
A: Yes exterior classrooms, interview rooms and offices could satisfy the program.

4. *Challenge 1* - Are we able to develop a specific program for the Training Center to base our design upon (example: Training Center specifically for photovoltaic technology), or do we need to design for general use?
A: You may interpret the competition program in terms of a specific kind of training. However, it is best to conform to the required elements of the program as much as possible. Departing from the programmatic elements too much may risk a negative response from the judges. Consult with your faculty advisor for advice on this issue.

5. *Challenge 1* - Is there additional climate information regarding the hourly wind direction and speed available? We are aware of the monthly wind directions, however we have not been able to find information on the whether there is a difference in wind direction between the day and night.
A: Summer breezes tend to be strongest in the afternoons, and die down at night. Winter winds are more constant. All the wind information that is available to competition entrants is already on the website. We are not aware of a database that gives hourly wind direction and speed information.

6. *Challenge 1* - To what extent does the 45-foot height limit apply? Do landscaping and trees on the site need to remain under this 45 foot height limit? We are also wondering if other elements such as wind turbines are allowed, as they require more than a 45-foot height to work properly.

A: The height limit for the new building is 45 feet. This does not apply to landscaping. Green building codes usually grant exceptions to the height limit for sustainable energy elements such as photovoltaic panels and wind turbines. This competition will do the same; however, you exceed the height limits at your own risk. Your design must be sensitive to the character of the neighborhood. There are many types of wind turbines available now, some of which are designed specifically for urban environments. Proposing Wind Farm-scale wind turbines on this commercial and residential site will be view critically by the judges. Discuss this issue with your advisor before proceeding. Designs that can approach net-zero without using huge wind turbines will be favored.

7. *Challenge 1* - The competition pdf states: "The building should have 20-ft. minimum setbacks from the south, east, and north boundaries. No part of the building, including stairs, ramps, or roof overhangs, may extend beyond the site boundary." Since it is clearly stated that no part of the building can extend beyond the site boundary, and not the setback in particular, it can be interpreted in which case a roof overhang, or part of the building, can extend over the setback as long as it does not exceed the site boundary. My issue lies in the fact that the main mass of my building sits on the setback line, and the second floor has a smaller cantilevered section that extends past the main mass in one spot, ultimately cantilevering over a "setback" area, but obviously within the site boundary.

A: The situation you describe is acceptable. A relatively small upper story section may cantilever over the setback line, but must still be within the site boundaries.

8. *Challenge 2* - We are wondering what constitutes a "unit" in Challenge 2 in reference to our building calculations. Is it one dorm room, or is it the entire building?

A: This question arose because of some confusion in the original wording of the Challenge 2 description. The table below originally contained the words "each unit" in the heading row. Those words have now been deleted to eliminate confusion.

Program Elements
1 or 2 Front Porch, entry areas
1 or 2 Shared Gathering/Common/TV Room
1 or 2 Shared Kitchen/Eating Areas
8 Single Dormitory rooms
8 Private Bathrooms
1 or 2 Washer/Dryer Areas
Optional exterior patios at upper levels

9. *Challenge 1* - My studio and I have been laying out the requirements for the posters and we found that if we are maintaining the 31,360 sq.ft. for the building, the requirement for the floor plans being $1/8" = 1'-0"$ scale will not fit on two 30" by 40" boards. In order to stay with the requirement of two to three 30" by 40" boards, we are proposing that the scale for the floor plans is changed from $1/8" = 1'-0"$ to $1/16" = 1'-0"$ so the plans fit on a single board.

A: Entrants to Challenge 1 may use three 30"x42" boards (which is 3780 sq. in). The site plan is roughly 195' x 260'. At $1/16" = 1'-0"$ this is a plan of approximately 12" x 16" or 200 sq. in. The combined floor plans for a 31,360 sf bldg, drawn at $1/8" = 1'-0"$ will be approximately 490 sq. in. It is important to recognize that a floor plan does not show the whole site, only the building footprint. Three boards are adequate to lay out the required drawings. Please consult with your instructor before submitting questions to the Competition.

10. *Challenge 1* - What should be the assumption for the training center's schedule? Should be plan it for all-day-classes (8am-5pm) and night time use? Are weekends and summers part of the schedule for the center?

A: The center will be open for classes year around during the day and evening.

11. *Challenge 1* - Could the team consider shared-use facilities with the community? For example, lecture hall, classroom spaces, open areas, etc.

A: You must meet the minimum program. Additional shared use facilities are acceptable, as long as you meet the minimum requirements.

12. *Challenge 1* - How is Net-Zero defined by the competition rules? For example, does it mean that on-site renewables must offset on-site metered energy usage only? Or should renewables also offset transmissions losses and source inefficiencies?

A: The minimum definition of Zero-Net is that on-site renewables must offset on-site metered energy use. You are welcome to exceed this with your design, if you can.

13. *Challenge 1* - The team would like to confirm that if it chooses to employ Part II: Building Performance Simulation Model instead Part I: Technical Analysis Tasks, it will not be necessary to do calculations for any of the Part I items (1-5)?

A: For the Technical Section 5, entrants must complete Part I OR Part II, not both.

14. Technical Requirements, Part II, Point 3 asks for a brief written analysis. Is this part of the 750 word project summary or a separate requirement? Also, is this required to be on the boards or in the envelope with the required set of outputs?

A: The requirement for a brief written explanation in Part II of the technical section is separate from the requirement in Section 4 for a 750-word Narrative. The written explanation for Part II of the Technical Section should be included in the envelope on the back of the boards.

15. Regarding the site boundary/setbacks. The Long Beach Boulevard side is the inside edge of the sidewalk? Does this prohibit awnings, and other overhangs from sheltering the sidewalk/West side of the building? If I wanted to shade the facade, would my shading device need to be inside of the sidewalk?

A: No part of the building may extend beyond the site boundary. This includes fixed overhangs or built-in awnings. If the designer wants to shade that face of the building, it is suggested that the building be set back so that the overhangs do not cross the site boundary.

16. I'm wondering about the details-level required for the assigned different drawing scales because I suppose there are some variations in the standards used in US vs. the European Union. I would like to ask for a higher quality copy of the previous winner's project (or other properly drawn one), so I could better understand the expected details-level and amount of information.

A: Consult with your instructor on these matters. If you translate the English units to metric units, it is our expectation that the level of detail used in the US and the European Union for student competition documents is fairly similar. We do not distribute copies of the previous winners projects. The only available reference to previous projects is that linked to from the [Winners page](#).

17. In the program of suggested square footage for the Center (page 2-10) are given precise numbers. How much could we vary from that (10% ,more , less)?

A: As with architectural programs in real life, some variation in the tabulated requirements is allowed, especially if there is a functional or aesthetic reason for changing it. Certainly +/- 10% is acceptable. Your instructor is your best guide for individual situations. Changing the size of a space such that it no longer functions properly would not be acceptable. It would also not be acceptable to delete a space from the required program.

18. Should we stick to typical building system (load-bearing construction mostly) used in the state of California, or could we use any one we find proper? For example, pre-cast concrete elements or in-situ cast, or steel structure, etc.

A: All of the systems that you mention above are completely acceptable. In general it is best not to propose extremely unusual building structural components, or extremely costly systems, unless they have a significant contribution to energy efficiency or sustainability. However the decision of what constitutes an unacceptable building system is entirely up to the judges.

19. About the Technical Requirement: Are there commonly used programs which you could name to us?

A: If you are asking what building energy modeling program to use in Part II of the Technical requirements, the answer is again, we must urge you to consult with your instructor for a building modeling program that is familiar to you and your instructor and that will do the job. You should describe the program as part of the documentation that you attach to the back of the boards. One place where you can find a directory of building energy software tools is on the US Department of Energy website in the Energy, Efficiency, & Renewable Energy Program. http://apps1.eere.energy.gov/buildings/tools_directory/ This site describes many programs and gives info for how to obtain them. Some of them are free. However, there are probably similar lists available in the EU. It is most important that you find a program that you can use effectively and that will give you the kind of data that the technical requirement is looking for.

20. *Challenge 1* - Where do the utilities come in?

A: Students may assume that the underground utilities come in somewhere along the Long Beach Boulevard frontage. You may bring them in anywhere along that edge of the site.

21. *Challenge 1* - Can we research project-specific technologies before the ten weeks? Is the ten week competition period only to limit the design?

A: No. The 10-week period is for all work related to the competition project. Unless you are researching these technologies for other classes or other purposes, we ask that you include all your research for the competition in the 10-week period.

22. *Challenge 1* - Would doing a cost analysis hurt us?

A: No, it would not. Hopefully your cost analysis would support your proposed use of renewable energy.

23. *Challenge 1* - In the technical analysis task, can we do calculations from part one *and* part two, with out being penalized?

A: There is no penalty for exceeding the requirement. However, for Challenge 1 you must either do at least three tasks from part one or *all* of part two. You may not mix and match from parts one and two to meet the requirement.

24. *Challenge 2* - May an enclosed staircase can be place on the west side of building facing Long Beach Blvd., to block street noise, or it is not permitted due to setback restrictions?

A: An enclosed stair is permitted wherever you want it in the building footprint; however, it is part of the building and must be behind the setback line. Per the Challenge 2 site plan, there is a 20-ft setback along Long Beach Boulevard. An open step or short stair may extend beyond the setback line, but a multistory enclosed staircase may not. Your instructor should be able to help you understand the difference.

25. *Challenge 1* - What is the function of the shop classes in the generic program requirements? Are they purposed for computer tech/hardware classes, or are they for woodshop-style hands-on learning? What functions will be performed in these rooms? Also, are the example room sizes and amounts firm, or are they more up to the designers themselves? That is, would it be plausible to design a great room that has designated areas for 4 or 5 shops, or is it essential to the design that there are 5 separate shop classes?

A: A shop classroom is intended as a 1,000 sf classroom where one instructor teaches a group of students. Shop classrooms are equipped with various equipment and instruments for hands-on learning how to repair or manufacture equipment. Some may be metal shops, others may be configured for other materials. It is not acceptable to meld all 5 classrooms into a single great room where instructors would have to compete with each other to be heard and noise from one classroom would interrupt activities in another classroom. The number of rooms is firm. Designers have some leeway to slightly modify room sizes in order to work with their design concepts. Designers who choose to grossly change the sizes of the rooms in their entries run the risk of being disqualified or criticized by the judges. 10-15% changes are probably fine, but 50-75% changes in size are risky. Deleting rooms is not recommended.

26. *Challenge 2* - Is the 4,500 square feet a maximum square footage? How close to that figure must we come? Does our building have to be ADA/wheelchair accessible?

A: 4500 is a suggested size. You are welcome to make the units smaller or larger as long as you include all the program and stay within the setbacks and the height restraints. There is some sustainable advantage to designing small, energy efficient structures, however.

Thank you for asking about the accessibility of the housing. As you know, ADA requires that all public housing be able to accommodate disabled residents. At a minimum you should have one accessible room and toilet room in your building; however, having more accessible rooms is desirable. Including an elevator for upper levels is fine, and probably desirable as well. Consult with your instructor on this issue.

27. *Challenge 1* - What is a reasonable energy budget in Btu/sq.ft./year for this building type?

A: We would expect this building to have an energy budget similar to a school or a classroom building in a relatively mild climate. Students should research the answer to this question and/or discuss it with their instructors.

28. *Challenge 1* - The Long Beach Development Services website provides maps of flood and liquefaction zones. According to these maps, the site for challenge 1 and 2 are in both the flood and liquefaction zones. Should this limitation be addressed in the competition proposal?

A: As these issues were not part of the program description, students are not expected to address them in their entries.

29. *Challenge 2* - I am not finding 4800 Long Beach Boulevard on the various online map sites. I do however find 4800 Long Beach Avenue. Is this the same location? Also when I trace 49th Street to where the beginning of East 49th and West 49th might be located, the intersecting street is not Long Beach Boulevard but instead South Main Street.

A: 4900 Long Beach Boulevard is the southern-most parcel of the competition site in Long Beach California. We note that Google Maps points to the same site whether one enters 4900 Long Beach Boulevard or 4900 Long Beach Avenue. This may be a function of Google Maps search engine. To our knowledge there is no Long Beach Avenue.

South Main Street is about 4 miles west of Long Beach Boulevard adjacent to the 110 Freeway, while Long Beach Boulevard is adjacent to the 710 Freeway. Even though Google Maps points there when searching for "South Main Street, Long Beach California", I believe that South Main Street is actually in Carson, and not in Long Beach.

The competition site is 4800 to 4870 Long Beach Boulevard.

30. Roughly, how much power will the building need to be able to provide for? I need to know about how many kW/hrs the building will consume to be able to calculate the amount of sq.ft. of solar panels that I will need to provide.

A: Consult with your instructor to estimate what the energy demand for a building of this type will be.

31. Is it possible to hand in the architectural drawings and the technical calculations in European units?

A: No. All entries must be submitted in the same units.

32. Is it allowed to design one common space for the Computer Lab/Library of the Training Center and the Employment Search Library?

A: Yes it could be acceptable, if the two areas were separate within one space.

33. What do you mean under "base case building" in Technical Requirements Part II./1? Is it a building with the same geometry as the building we have designed but with lower energy efficiency requirements? Do we have to do the calculations on all the changed versions of the base case building and the designed building?

A: If you do Part II of the Technical Requirements, the intention is that you will use the building energy modeling to improve the energy efficiency of your building. The base case building is, as the text indicates, a building of similar size that meets basic energy efficiency standards. The improvements that you make to your design should be tested with the energy modeling software to show that they really do improve the design's energy efficiency. A simple example might be that one might think that south facing windows would reduce the amount of energy needed for heating, but in fact the model might show that instead they significantly increase the amount of energy needed for cooling and thus don't improve the design at all. You are not required to prove to us that you have tested every changed version of your building, but we are assuming that you will. As the text indicates, you must demonstrate and discuss how 3 different design changes affect the energy performance of your building.

34. Should the required building simulation be about the heat loss/heat gains of the building? Do we have to simulate the whole building or just one classroom?

A: Yes, of course. As the text indicates, you should focus on the performance of the classrooms, however, in reality you will have to model most of the building envelope to understand how the classroom will function. Consult with your instructor for how to best approach the energy modeling portion of Part II. Keep in mind that you do not have to do Part II, you could also just do the required number of exercises in Part I, if the modeling is too difficult for you.

35. I have a couple questions regarding the rail line that abuts the southern edge of the site. Through some internet searches, it looks like it is active. Is that correct? Additionally do you have an estimates on how frequently it is used?

A: The Union Pacific Railroad tracks are used for freight trains moving through the area. We do not have information on the frequency of use. The trains do not stop anywhere near the site. These tracks are not used for any kind of passenger trains.

36. Could you specify what kind of building simulation did you think of in Technical Requirements Part II. My instructor, who gives advice in building engineering says that such energetic building simulations are out of the competence of architecture students, we should have had plenty of lectures in building engineering.

A: One of the goals of this competition is to encourage architecture students to learn the skills and acquire the knowledge to perform building energy simulation modeling. Part II of the technical requirements asks students to do a Building Energy Simulation model to test how energy efficient their building design is and demonstrate how it will perform throughout a typical year. If your instructor cannot help you with this type of energy performance modeling, perhaps you should seek another advisor. Alternatively, you can perform several of the exercises in Part I and not do the energy modeling in Part II.

37. Do we have any limit in floors and stories?

A: Both the Challenge 1 and the Challenge 2 building overall height is limited, and the maximum footprint is limited by the setbacks on the site. See *Section 2, Design Challenge*, for that information. Page 2-10 indicates that Challenge 1 should leave about 50% of the site area for landscape. There is no other limitation in what you design. The judges also usually value how a design fits into the character of the site and the adjoining neighborhood.

38. *Challenge 1* - Is it acceptable to incorporate spaces below the existing grade solely for service and utility functions?

A: Yes, below-grade functions are acceptable.

39. In regards to question no. 9 of the FAQ, my team is having problems finding room to fit the required drawings and still have adequate space for diagrams and additional support drawings. Is there some flexibility in combining some drawings, i.e., a first-floor plan @ 1/8 scale that shows the entire site plan, including environmental systems, etc., in lieu of including a site plan @ 1/16 scale AND a first floor plan @ 1/8 scale. Would it be possible to illustrate the primary floor plan at 1/8 scale and then supplementary (second and third) floor plans at 1/16 scale that still illustrate the information completely and effectively?

A: It is very important that your drawings are the same scale as the drawings in the other entries so the judges can easily compare them. Therefore, we must stand firm in the required drawing scales. This being said, we will accept a first floor plan @ 1/8 scale that shows the entire site plan, including environmental systems, etc., in lieu of including a site plan @ 1/16 scale AND a first floor plan @ 1/8 scale. As to whether it is possible to illustrate the primary floor plan at 1/8 scale and then supplementary (second and third) floor plans at 1/16 scale that still illustrate the information completely and effectively, the answer is no. All your floor plans must be at 1/8.

40. Can the scale be changed? Even though the building footprint can not exceed 50% of the site, floor plans can take up a good amount of space on the boards.

A: Please follow the required scales for the various plans that are given in the Submittal Requirements Section. Note that the drawing scale requirements are different for Challenge 1 and Challenge 2. Also note that the Challenge 2 site does not include the Challenge 1 site or vice versa.

41. I am registered for the challenge 1 part of the competition. My question is can I include the challenge 2 building in my design and with that its site? If this is possible, would that leave me the ability to lose the 20'-0" set backs for the joining sides of the sites?

A: No. If you are entered in Challenge 1, you must follow those competition requirements.

42. My building is within the setback line but a ramp connecting to a green roof extends to north setback line. Is it acceptable? If so, is it landscaped area (I mean 50% landscape area), or not? The ramp is open and covered by grass like green roof

A: A ramp may extend into the setback, and if it is open and covered with vegetation then it may contribute to the landscaped area on the site.

43. Are the trees located south of the site evergreen, and how tall are they?

A: No information is available about the heights or the species of the trees adjacent to the south side of the site. Entrants should look at the site photos that are available in the competition documents and use your best judgment. Consult with your instructor for help.

44. Can we do drawings and calculations using metric system?

A: No. Do not use metric units. As the site is in California, designers must conform to the measurement standards in the U.S.

45. *Challenge 1* - We did not see any specifics for mechanical or electrical spaces. Were these spaces required? And if so, should we use a general rule of thumb and have these spaces account for 5-10% of the total building area? Will a separate room be needed for each floor?

A: Of course a building needs these types of spaces. Discuss this with your instructor and follow his or her advice.

46. *Challenge 1* - Due to the height restriction, is building below grade a possibility?

A: Yes. It is allowed to build below grade.

47. *Challenge 1* - Are we required to perform a Building Performance Simulation Model of the entire building and report on just one classroom, or are we required to perform a Building Performance Simulation Model of just a single classroom?

A: You are not required to perform a building simulation model, only if you elect to do Part II of the Technical Section 5. It is not possible to perform a building simulation model on a single room. Please follow the instructions 1-3 in Part II. The sentence "Focus on the performance of the classroom space" is intended to let you know that the judges are especially interested in the energy performance of the classroom in your building and that you should be sure to mention any design changes you made to the classroom design that informed the building's energy performance in your written analysis required by item 3.

48. *Challenge 1* – Is a 2-story building required? Is this a minimum or maximum? If we stay below the 45' height restriction, is a third floor allowed?

A: There are no requirements for the building to be 2 stories. Follow the program requirements in the Competition Challenge section to design a 31,000 s.f. building on a 37,000 sf site. You must stay below the 45' height limit. Any number of stories are allowed.

49. *Challenge 1* - Are driveways allowed outside of the setbacks? Also, does the area between the setback and the property line count toward the 50% exterior landscaped area?

A: Driveways are allowed anywhere on site. Discuss with your instructor for advice. Yes, the setback area counts as being part of the site, and if it is landscaped, it can count toward the 50%.

50. *Challenge 1* – How should we treat the space between the Challenge 1 site and the Challenge 2 site? Should there be direct accessibility between the two?

A: The program is silent on how to treat the area between the Challenge 1 and Challenge 2 sites. Discuss with your instructor.

51. Can the building go lower than 4' into the ground and is a basement allowed?

A: Yes.

52. What is a *magic arrow*?

A: Magic Arrows are when designers show passive ventilation of their designs without any regard to the physical forces involved in making passive ventilation happen. For example, if an entrant showed warm air falling through an atrium and exiting a low-level window rather than rising, he or she would be drawing a magic arrow. Another example would be in daylighting: if an entrant showed direct beam light coming in a window from a direction where there is no direct beam light, that would be a magic arrow.

53. Is the additional envelope which is attached to the back of the boards only for numbers and descriptions or can we include extra non-architectural schematics, and graphs?

A: The description of what should be included in the envelope attached to the back of the entry boards is given in Section 4, Submission Requirements:

“Each entrant is required to submit three of the technical tasks in Part I of Section 5: Technical Requirements, or submit an energy simulation model as described in Part II of Section 5. Summaries of the completed technical tasks as well as discussions of the results should be shown on the face of the project boards. Worksheets and calculation sheets may be placed in an envelope and attached to the back of the boards. If an energy simulation model is completed, place relevant summary results on the front of the board, with more complete output attached to the back of the board.”

The envelope on the back is not intended as a place to include additional design information or to put anything that the submission requirements state must be included on the face of the boards.

54. Are the contents of the packet judged equally with what is displayed on the board?

A: Worksheets, calculation sheets, and energy simulation model outputs are judged by the technical judges in the first round. They are not judged by the design judges (second round).

55. *Challenge 1* - Is there any data on traditional ways of forming outdoor private space that is characteristic for the state of California? Any publications on this subject?

A: The competition does not provide this information. Please discuss how to do this kind of research with your instructor.

56. Can we design underground stories, and if so, how many?

A: Yes, and there is no limit to how many.

57. *Challenge 1* – At what time of the day will the building be used for training purposes?

A: The building will be used year-round during business hours and in the evenings.

58. How many people will use the building at the same time?

A: The competition does not provide this information. Read the program and use your best judgment.

59. What kind of regulations shall we use when designing evacuation ways/fire ways? Is there any proper paragraph or publication we should follow?

A: The competition program does not specify this. Please discuss with your instructor who can advise you in how to design evacuation ways and fire ways.

60. Do you care if designers provide any information sign or other form of visual information about the character of the facility ?

A: Entrants are welcome to design information signs and visual information about the character of the building.

61. Is there any social data about preferable chill-out spaces among people from California that you can share?

A: The competition does not provide this information. Please discuss how to do this kind of research with your instructor