2021 Design Competition
Frequently Asked Questions

Q: Are teams allowed to register in more than one category of the competition?
A: Yes

Q: How many students can participate in a team?
A: There is no max for ISBD teams but there is a max of six students per team for the other categories. Project groups should consist of at least two members from an undergraduate engineering or architecture curriculum for the HVAC Design Calculations or HVAC System Selection and at least three members (architecture or construction, mechanical & electrical) for the ISBD competition. Team members can be from multiple colleges. All team members must be enrolled during the semester/term in which they contribute to the design. The Applied Engineering Challenge is for a team of 1 to 6 engineering students.

Q: Are graduate students allowed to participate in the competition?
A: Projects can be submitted by graduate students in the Integrated Sustainable Building Design category only. For the other categories, entries should originate from an undergraduate engineering or architecture curriculum and all team members must be enrolled in an undergraduate program during the semester/term they contribute to the design.

Q: Is a university permitted to register more than one team into the competition as a whole? For example, if I were to be a member of a registered team for one of the three team categories, but I'm also interested in the Applied Engineering Challenge while my other teams members aren't, can I partake in both?
A: Yes

Q: Do the page limits include appendices?
A: No.

Q: Can we change the orientation of the building to see how it would affect our load calculations?
A: For the Design Calculation the building is set in its orientation and will not be judged if the building is rotated. However for your own benefit the team can rotate the building to see how Solar effects the building.

Q: Is it possible to get the actual location of the building? We would like to explore the use of nearby waste heat opportunities to supplement our HVAC system.
A: The building location is Prince George, Canada and the ground information can be obtained through research.

Q: Are we allowed to add features to the building?
A: For the Design Calculation the building is set in its features and will not be judged if the building has additional features. However for your own benefit the team can add those feature to the building to see how they effects the building loads.

Q: Where can we get the dimensions of the building?
A: Teams can get the full dimensions of the building from the provided CAD drawings.

Q: In the drawings included with the competition information there is no site plan or information about the terrain. Would it be possible to know any information regarding the building site?
A: No site plans will be provided for this competition. For the design calculation part of the competition, the only information they need about the site is the direction the building is facing.

Q: Can we change the layout, i mean the interior layout of design at ISBD?
A: Yes

Q: Do we get the weather data of Prince George, Canada?
A: Yes ASHRAE provides weather data files for Prince George on the Design Competition website. You can also utilize the ASHRAE Climate Data Center and ASHRAE Fundamentals.

Q: Do we get the baseline model to compare our design?
A: The base line is the building you see in the drawings plus ASHRAE 90.1

Q: I would like to use revit for the design calculations competition, however only AutoCAD drawings are posted. Are there revit drawings I can use?
A: No

Q: Why is the lowest level put at 89'? Is there a below-ground portion of the building? Where is ground level?
A: Elevation views including ground level are provided as part of the competition drawings provided on the website.

Q: The project document says the building is meant to operate from 0700 to 2000, 7 days a week. Are these the complete operating hours or can we expect that the management and or custodial service will be operating outside of these hours? The document also mentions the peak occupancy is set to 720 people. Is there any particular time(s) we should expect the peak – should we assume breakfast 0700-0900, lunch 1200-1400 and dinner 1700-1900 should be at the peak? Can we expect the same peak occupancy on the weekends?
A: Yes, these are the complete operating hours for the building. For all assumptions you should provide rationale to support your design decisions. Weekends are part of the defined operating hours.

Q: In order to meet the expected target of 3000 people served each day, there must be a certain amount of food stored onsite at the beginning of the day. How much food do we expect to be onsite, or will it change throughout the week? (I.e. do we receive regular shipments every day or are some of the cooling facilities left mostly empty on some days and mostly full on other days?
A: Please feel free to make your own assumptions, however make sure they are consistent and that you provide proper reasoning in the analysis section to support your design.

Q: "There are no temperature or relative humidity setbacks during unoccupied operation for spaces where materials are stored, but there are for other areas" means we have to consider these spaces to be 'always on' while others are only in use during the operating hours?
A: Correct

Q: Do we need to include a financial analysis pertaining to the building/HVAC systems including rate of return and pay-back period (etc.) as well?
A: It depends on which competition you are applying for. The ISBD competition requires one. However, you may find doing said analysis will help you in your final system selection. It depends on the criteria you have set to select your final system.

Q: With regards to the construction details, there are also some general comments made with regards to the type of windows (double glazed, fixed, etc), are we meant to make reasonable assumptions based on these details as to the envelope performance values associated with these components, or are there specific values we should be using? Similarly, will we be provided with the Thermal Bridging loss values or can we estimate those as well?

A: Correct, you can make reasonable assumptions provided that you explain them in the analysis section.

Q: The project document mentions 400V/3 phase/50 Hz power is available on site. Can you confirm this because this seems to be outside of the regular Canadian standard power supplies?
A: This is a typo, please use 575V-600V/3phase/60Hz.

Q: Concerning the Standards referenced in the project documents. My team has been unable to find a way to access these documents, is it possible that we can be given temporary access to the standards and Handbook mentioned in the project documents?
A: We don't make any of our publications available to teams for free but if you are an ASHRAE student member you get a significant discount on the Fundamental book ($54 instead of $230). We also have online read-only versions of our popular standards available here**.**

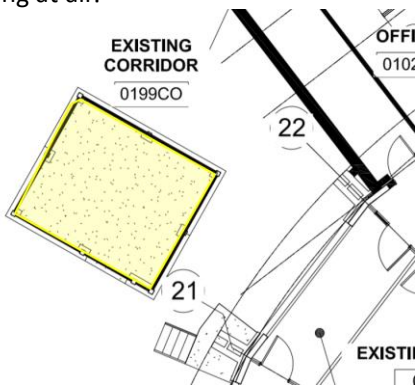
Q: It is of note that the building location is in BC where the local authorities are following different standards than are listed in the project document. For example, rather than ASHRAE standards 15 and 34, Canada references code CSA B52. On the same note, can you provide the specific version of the standards we are expected to use, or are we just expecting to use the latest version of all standards?
A: It is always recommended to use the latest version available.

Q: Is there any recommended information regarding projected future weather pattern data which could perhaps impact the usefulness of the design in 20 or 30 years?
A: We strongly encourage students to look into current events and publications about future weather patterns, as it will give realistic design conceptions. However, make sure that the information is from a valid source and that explanations are provided in your analysis.

Q: How many people can we expect to be in the office spaces and restrooms during peak hours when occupied?
A: This answer can be found in multiple ASHRAE Handbooks and Standards. You can also make your own assumptions provided they are reasonable and that you have explained them in your project.

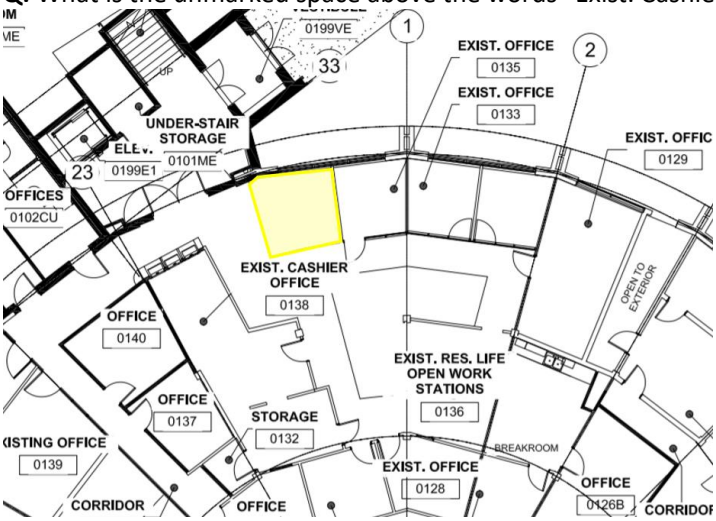
Q: The project requires a VAV system be selected as the HVAC system. Is it allowed to implement a DOAS unit, or does the system have to be a conventional VAV?
A: Your design can implement any type of technology as long as you provide support in your analysis.

Q: Regarding the lower floor plans what is the unmarked square near the circled "21". Is it attached to the building at all?



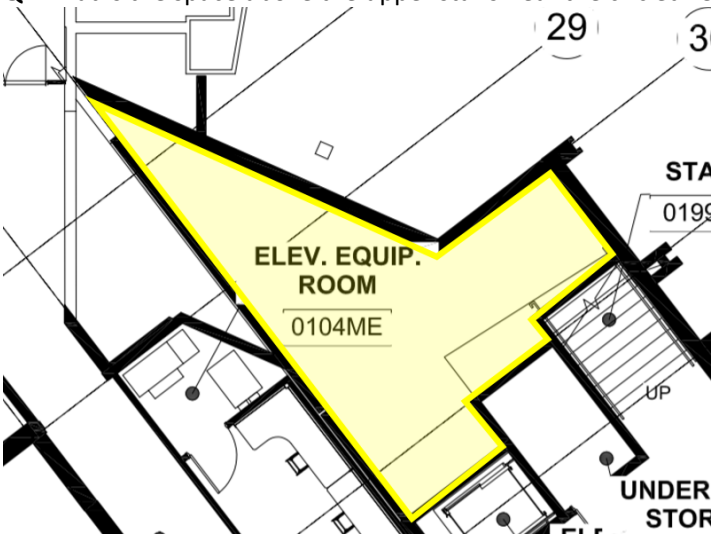
A: Concrete slab located outside

Q: What is the unmarked space above the words "Exist. Cashier Office"?



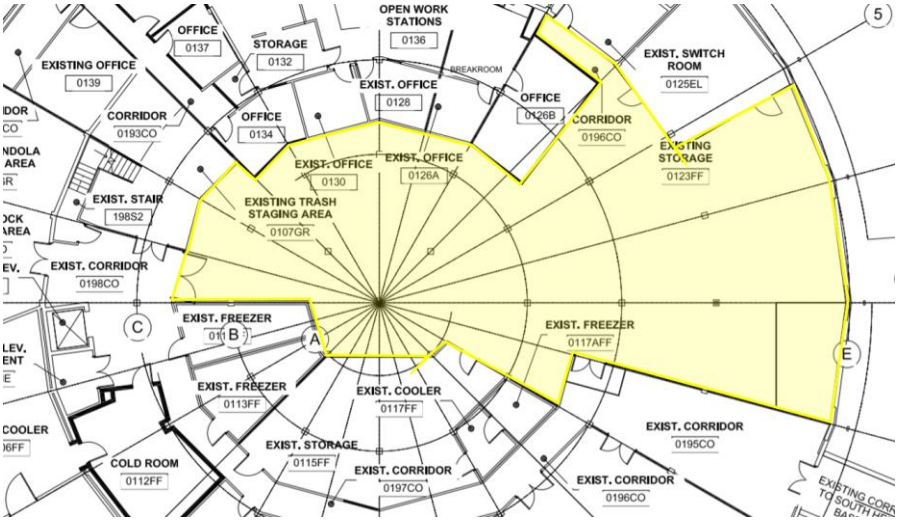
A: It is part of the “Exist. Res. Life Open Work Stations”. The line was an extension of the previously marked “circled 24” – it is supposed to be erased.

Q: What is the space above the upper stairs near the circled "30", is it just a corridor?



A: Entrance hallway from an adjacent building. You could treat it as an exterior entrance if you would like. So yes, a corridor is appropriate.

Q: What is the space at the center of the floor plan?



A: It is open space

Q: It appears to be labelled as "Existing Storage [0123FF]", or is the label referring to the room just above the label?

A: Existing Storage “0123FF” is for the room above the label.