LEED® Lab™: Which Compliance Path is Best for Your University?

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The United States Green Building Council (USGBC) created the LEED® Lab™ program, in collaboration with the Center for Green Schools, to offer higher educational institutions the opportunity to provide students with more comprehensive information about the LEED certification process. LEED Lab is currently offered at over twenty seven universities around the world. According to the USGBC website [1], "LEED Lab is a multidisciplinary immersion course that utilizes the built environment to educate and prepare students to become green building leaders and sustainability-focused citizens. In the course, students assess the performance of existing facilities on campus and choose one building where they will facilitate the LEED for Building Operations and Maintenance (LEED O+M) process with the goal of certifying the facility." As of Fall 2016, there are two compliance paths for achieving this goal, the traditional path within the LEED v4 rating system, and the new path, Arc Platform, a performance-based approach. There are advantages and disadvantages to each. Our LEED Lab class at Ball State University has pursued both paths for different buildings and have recommendations for other LEED Labs who face this decision.

Background

LEED stands for Leadership in Energy and Environmental Design and is an independent, third-party verification green building rating system created by the United States Green Building Council (USGBC). This program, a voluntary and consensus-based rating system with third party verification, was initiated in 1998 and has been adopted and used worldwide. It provides a method of evaluating in a standardized format the environmental performance of various building types, including new construction, major renovations and existing construction. Performance metrics focus on these key areas: location and transportation, sustainable sites, water efficiency, energy efficiency, materials and resources, and indoor environmental quality. LEED is inspired by BREEAM (Building Research Establishment Environmental Assessment Method), the green building rating system used in the United Kingdom. LEED certification was originally developed for new construction but has broadened to include other building types, including a certification process for the operations and maintenance of existing buildings. LEED for Buildings Operations and Maintenance (LEED O+M: Existing Buildings) certification, offered since 2005, was developed for existing structures and is predicated on how the building is actually performing, not just its designed or expected performance. It also requires a five year recertification, to ensure the building continues to perform successfully [2].

LEED Lab, created in 2014, works within the LEED for Buildings Operations and Maintenance (LEED O+M: Existing Buildings) rating system to provide higher education students the opportunity to work towards the goal of certifying a building. Knowledge of LEED is beneficial to students, but actual experience in certifying a building as LEED will set these students ahead of their peers as the enter the workforce. In the course, students assessed the performance of existing facilities on campus and choose one building where they will facilitate the LEED for Building Operations and Maintenance (LEED O+M) certification process. As of Fall 2016, there are two compliance paths for achieving this goal, the traditional path within the LEED v4 rating system, and the new path, Arc Platform. As a class, the students evaluated both

pathways, to determine which was more appropriate for the successful completion of the LEED certification process and therefore which path to compliance best fits their needs.

Approach and Process

The specific approach for LEED Lab varies at each campus, with many different class structures being followed. One method, as adopted by the authors of this paper, is to structure it as an interdisciplinary class with the focus on the actual certification of a campus building under LEED for Buildings Operations and Maintenance (LEED O+M: Existing Buildings). Students including construction management, architecture, interior design, urban planning and landscape architecture majors, and historic preservation and sustainability minors, studied the current state of the building. This included energy and water consumption, recycling rates, occupant satisfaction and transportation modes, green cleaning, and sustainable purchasing. They then made recommendations in these, and other areas, to implement improvements. During the performance period they tracked any changes to see if they resulted in any improvements. This course focused on LEED application, while another course in our curriculum focused on LEED content.

A previous knowledge of LEED is not necessary for participation in LEED Lab, as the class began each semester with an overview of LEED in general. It then moved on to the university's efforts in sustainability in general and the specific efforts in specific buildings. For the first step in LEED Lab, the students began researching a campus building that had previously been certified as either LEED for Building Design and Construction (LEED BD+C: New Construction and Major Renovation) or LEED for Interior Design and Construction (LEED ID+C: Commercial Interiors). The main reason for selecting a previously LEED certified building is the waiving of the registration fee. The LEED registration fee is waived for previously certified buildings, but not for all LEED Lab projects. If the building was not previously certified, the institution would be responsible for the registration fee. As of February 2018, the registration fee for Silver, Gold and Platinum level USGBC members is $1,500. For Organizational level or non-members, the registration fee is $1,900. There is no difference in the certification fees [3].

Next, the students in LEED Lab worked closely with the staff of our university's Facilities Planning and Management department, to learn about the specific sustainability efforts in the chosen building. Representatives included:
- The Senior Purchasing Agent, who met to discuss our university's efforts in the area of sustainable purchasing.
- The Associate Director for Landscape and Environmental Management, who met to discuss our university's efforts in the areas of grounds upkeep and waste removal.
- The campus interior designers, who met to discuss our university's efforts in the area of sustainable furniture and finishes.
- The Building Services Supervisors, who met to discuss our university's green cleaning.
- The campus Energy Engineer, who met with the team to discuss our university's energy management.

All of these representatives discussed their area's impact on sustainability regarding the

building being studied that semester, including the university's overall efforts and those associated with the specific building.

Next, the students toured the building. The students had been in the chosen campus building many times, but not with an eye to the sustainable features. We were able to go a tour of the building led by a representative from Facilities Planning and Management, who is a LEED AP O+M (Operations + Maintenance). He was the campus representative who oversaw the construction and initial LEED certification of the building and so was able to share specific information concerning the LEED requirements and implementation throughout the building. He took us to areas that the general public cannot access, as well as shared his suggestions for areas of improvement.

The next step was to determine the compliance path that will be most beneficial to our chosen building. When submitting a building for certification under LEED O+M: Existing Buildings there are now two choices: the traditional compliance path and the new Arc platform. Two completely different processes, both have advantages and disadvantages when choosing the compliance path.

Traditional Compliance Path

The traditional compliance path is the same credit based approach as the other LEED rating systems. It will document the project within LEED Online, as done in the other LEED rating systems. All projects, whether previously certified or not, must comply with the LEED O+M: Existing Buildings prerequisites and achieve a minimum of 40 points for the Certified level. It is the same procedure (and point structure) the students will be using in their future careers when working on the LEED certification process. It includes the standard categories:
- Project Information Forms
- Location and Transportation
- Sustainable Sites
- Water Efficiency
- Energy and Atmosphere
- Materials and Resources
- Indoor Environmental Quality
- Innovation
- Regional Priority

Arc Platform

In the Fall of 2016 an alternative compliance path was introduced, the Arc Platform. Arc, administered by Green Business Certification, Inc. (GBCI), is a digital platform that allows the students to interface in real time with the measurements of the building. A completely different performance-based approach, it utilizes different categories to those everyone is familiar with in LEED, but incorporates new technology into the certification process. Students can input information and check on the projects progress from the Arc app on their computer, iPad or smart phone. It includes the following categories:
- Energy

- Water
- Waste
- Transportation
- Human Experience

As data is imputed in these five categories, a performance score is generated [4]. All projects that have not been previously certified must comply with the LEED O+M: Existing Buildings prerequisites and achieve a minimum performance score of 40 for the Certified level. However, projects that have previously been certified as either LEED for Building Design and Construction (LEED BD+C: New Construction and Major Renovation) or LEED for Interior Design and Construction (LEED ID+C: Commercial Interiors) do not need to comply with the LEED O+M: Existing Buildings prerequisites [5].

Advantages and disadvantages of each compliance path

Our authors are currently working in LEED Lab with two building projects: one following the traditional path and one following the performance-based Arc Platform. Both have advantages and disadvantages. It is a balance between which is more beneficial for the students' education and which is more beneficial for the ultimate goal of certifying a building in LEED O+M: Existing Buildings.

The advantage of the traditional path is that it is the same procedure (and point structure) the students will be using in their future careers when working on the LEED certification process. The skills and knowledge learned in this path are directly transferable, a fact that will be beneficial to their future employers. By allowing students access to LEED Online they become familiar with the interface they will use in future projects. They have read-only access to all credits and information about the project, and students have write access for the specific credits they are assigned. The activity log in LEED Online allows the faculty to learn who did what in the system and when they did it. Additionally, if students wish to pursue personal accreditation as a LEED AP, the exams are currently based on the traditional compliance path, not Arc Platform.

The disadvantage of the traditional path is that by requiring the compliance with all prerequisites, it could require a skill set beyond the ability of students. For instance, the Energy and Atmosphere prerequisite, "Minimum Energy Performance" can be a challenge, since knowledge of the ENERGY STAR Portfolio Manager is required. In this prerequisite, the building is benchmarked in ENERGY STAR against a set of similar buildings to determine its energy savings. If a building, due to its unique nature, is not able to find similar buildings within the ENERGY STAR data set, it is then benchmarked against itself. According to Jeanne Allen Carswell, LEED® AP BD+C, ND, Specialist, Technical Solutions at USGBC [5], "For commercial office buildings, ENERGY STAR has a substantial data set, which gives us the ability to easily benchmark this building type. Because these buildings do not have to benchmark against themselves, they are not required to make a year on year improvement, though they are incentivized to improve so they can acquire more points. Unfortunately, for those unable to benchmark with ENERGY STAR, the path towards documenting performance under the prerequisite is much more complicated and could be difficult for buildings that have already addressed any low-hanging fruit."

The advantage of the Arc Platform path is that projects that have previously been certified as either LEED for Building Design and Construction (LEED BD+C: New Construction and Major Renovation) or LEED for Interior Design and Construction (LEED ID+C: Commercial Interiors) do not need to comply with the LEED O+M: Existing Buildings prerequisites. This is an advantage for buildings in the previous example which are unable to meet the Energy and Atmosphere prerequisite, "Minimum Energy Performance". Also, the digital interface that allows students to input information and check on the projects progress from the Arc app results in improved engagement from the students.

The disadvantage of the Arc Platform is the different set of categories and items within those categories. They do not align with the standard LEED categories, which could cause confusion when the students, in their future careers, work on LEED projects that follow the traditional path. As Arc Platform becomes more widespread though, this disadvantage will be minimized.

Conclusions

In conclusion, determining which compliance path to pursue within LEED Lab is an individual decision, based on the goals of the class. It is a balance between which is more beneficial for the students' education and which is more beneficial for the ultimate goal of certifying a building in LEED O+M: Existing Buildings. Within this paper we have discussed the advantages and disadvantages of each, to help other educators make an informed decision. Whichever path is chosen, LEED Lab is a valuable opportunity for students to gain actual LEED experience, which will be impressive to future employers.

References

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