

ECO High

Goal

At ECO High we focus on three things: the Environment, the Community, and Opportunity. Our school is focused on the future, not only for the students but for our community and environment. We plan to prepare our students with life skills including working on interdisciplinary projects, presenting and public speaking, and collaborating using the Project Based Learning (PBL) methodologies. Using solar panels, keeping the uptake of greenhouses and a green roof, and using cross-laminated timber as a majority of our structure will create a lasting impact on our environment. We also plan to add a new and up-to-date library, a new gym, and an outdoor amphitheater that will be available for community use.

Planning

We currently attend a PBL school and love it. When making the plans for this school we wanted to take the feedback of all of our students, teachers, and parents to improve design aspects that enhance the PBL program and ensure its success for every student. We first started our design by picking a location. We had a few local areas in mind, but the one that stuck out to us the most was Lacamas Park because it contains close connections to nature and is near a lake. Once we picked our location, we made a bubble diagram of our school. We picked the number of students and age group we wanted to design for and made general locations of where we wanted each space to be. Following this we made drafts of the designs for our school and agreed on which one we liked most. During the process of creating our sketch-up model, we made multiple design changes, once even starting again entirely from scratch. All of these steps and pivots led to the design we currently have and all love.

Environment

One of the biggest wants from our peers at our current school is more outdoor elements. Our site is located in the forest, and by a lake, which will open up opportunities for many unique STEAM-based projects. We want to take as much advantage of our surroundings as we can, because according to multiple studies from The Great Lake Stewardship Initiative, being outdoors benefits students greatly by increasing awareness, creativity, and innovativeness. We also added an outdoor learning and eating space when the sun decides to show, as students like to take advantage of our nice weather when they have the chance. This place is scattered with benches and rocks for students to sit in and also contains a hammock lounge. We have a covered area so that students can enjoy the outdoors even when it's raining.

When it comes to the environment-friendly aspect of our school, a majority of the structure of our school will be made out of Cross-laminated timber. According to The Washington State Department of Commerce, “The built environment is the second biggest source of greenhouse gas emissions, behind transportation” (Thomas, 2022). Cross-laminated timber is better for the environment because it removes all of the carbon that goes into making steel. It also helps the construction process go faster because all pieces of timber are pre-designed with pippin and wire holes, everything to the screws, and it requires fewer workers to put the building together; it’s like a giant puzzle. The timber also stands up very well when put against fires and earthquakes, ensuring our students' safety.

Our building has both a greenhouse and a green roof. School greenhouses equip students with conservation, responsibility, and ecological knowledge they will use long after they graduate. This will help continue to connect our students to nature even when it's raining. It’s also a great hands-on learning project and will help teach students about responsibility. We will also be taking advantage of solar panels on parts of the roof of our building. This will reduce energy costs, reduce pollution, and showcase the use of solar panels to the community. Every dollar counts, especially for schools, and the savings from solar panels will allow us to put more money each year into our students and our community.

Community

The other biggest want from our students is a weight room and more places where they can play sports. We found that when our current school was designed, it focused heavily on the learning areas, and less on the fitness spaces. Even though our current school is full of academically-minded students, they still want opportunities to be able to move during the school day. Because of this, we designed a weight room, a track, and a gym for our students and community which our students see as an oversight in design at the current school we attend. We will have the gym and weight room open after school hours for the public. In the gym, we will host many different kinds of sporting events like tournaments and free play, because athletics can bring people together and work on many skills that aren't just physical. We will keep the weight room open for weight classes that volunteers instruct after school hours.

Our current school we attend has an outdoor amphitheater, but it’s small which limits its uses. We like the idea of an outdoor amphitheater and decided to add a bigger and better one to our school with easy accessibility. This amphitheater is covered for when it is too sunny or too rainy. It can be used for many different occasions beyond just the needs of our school like plays, choir, and even small band concerts.

We designed our library for our students and our community as a welcoming place they would want to come and read. The library is three stories which will display our use of cross-laminated

timber showcasing the beautiful wood that keeps the building standing. It's also designed with windows that go three stories tall so we can receive the maximum amount of natural light. We kept this idea throughout the whole building making sure that every room received much natural light because according to the UCL Institute For Environmental Design and Engineering, "natural light positively contributes to a higher academic performance in reading as well as in science" (UCL, 2022).

Opportunity

The PBL style is not the traditional learning style of memorization. We must use collaboration, out-of-the-box thinking, and public speaking as the basis of everything we do. Each one of these skills is what companies are now looking for in their future employees and we plan to grow them in each of our students. Many of the design choices of our building encourage these skills and even assist in their success. Our biggest contribution to our PBL style is our Maker Space. This is a workshop filled with every tool and machine you could ever need to make anything you want. This space gives kids many usable skills like designing and working with their hands. It also teaches them problem-solving when they run into a bump in the process. This shop and school lets students go home knowing that they learned to make something and that they learned skills they can apply in the future.

Works Cited

Thomas, P. (2022, September 13). *Solar panels coming to more schools, public buildings statewide with latest round of Commerce grants*. Washington State Department of Commerce.

<https://www.commerce.wa.gov/news/solar-panels-coming-to-more-schools-public-buildings-statewide-with-latest-round-of-commerce-grants/>

UCL. (2022, March 10). *The importance of daylighting in classrooms and its effect on primary students' academic performance*. UCL Institute for Environmental Design and Engineering.

<https://www.ucl.ac.uk/bartlett/environmental-design/news/2022/mar/importance-daylighting-classrooms-and-its-effect-primary-students-academic-performance#:~:text=Natural%20light%20positively%20contributes%20to>