

# **Jl: Peace Academy of the Sciences and the Arts**

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For years, K-12 education has been taught through separate, individual subjects such as Math, English, Art, and Science. Primary education has remained stagnant while our society is constantly evolving with technological advances and innovation. The Peace Academy of the Sciences and Arts in San Luis Obispo, California are a group of visionaries and educators challenging traditional learning styles. They are striving to offer an education that focuses on holistic learning and integrating all subjects into big ideas to create competent, compassionate leaders for the future. My senior project is a collaboration between Journeyman International, the Peace Academy, a student in Architecture, and a student in Landscape Architecture. There is no current home for the Peace Academy, however they are interested in a 350 acre-ranch off of Los Osos Valley Road in San Luis Obispo. They want to develop an eco-friendly school equipped with adaptable spaces such as a Recreation Center, K-8 Learning Spaces, High School, Cafeteria, and Retreat Center. The purpose of my project with the help of my fellow architecture students is to assist the Peace Academy by developing a preconstruction package. My main deliverables as the construction manager include a site plan, phasing plan, estimate, and schedule.

**Key Words:** Humanitarian Construction, Education, San Luis Obispo, Interdisciplinary, Journeyman International

## **How Project Came About**

The Peace Academy of the Sciences and the Arts was started as a summer enrichment program in 2018 with plans to continue the summer program as well as start a K-12 school. The academy has ten founders with various backgrounds in fields such as teaching, counseling, ministry, and business. At this time, the Peace Academy is in an early stage of development where they are looking for donors and sponsors to support their mission. There is currently no permanent home for the Peace Academy; however they are interested in a 350 acre ranch on Los Osos Valley Road in San Luis Obispo, California. The site would be an amazing environment for students to learn hands on skills such as agriculture, ecology, cooking, and other creative activities.

This project is a partnership with Journeyman International and The Peace Academy of the Sciences and the Arts. The Peace Academy posted a project on the Journeyman website asking for preliminary design services regarding their campus. Journeyman is a nonprofit organization that helps provide design and construction to third world countries by connecting other humanitarian groups with students. While a project in San Luis Obispo strays from their usual clientele, Journeyman is able to help the Peace Academy in their goal to educate more globally conscious students. The Academy is striving to offer an education that focuses on holistic learning and understanding how every subject relates to each other and the world. A student in architecture and a student in landscape architecture approached me about collaborating on this Journeyman project together. I thought it was not only a great opportunity to learn more about architecture and design but also support an idea that is so different from standard learning. Being that it is so close to my college home, it really puts into perspective how I am benefiting my local community.

## **Process**

Early on in my senior project, there were meetings with my fellow student team as well as with the visionaries and directors of the Peace Academy. Lucas Johnston an architecture student, Holly Hillegass a landscape architecture

student, and I worked closely with Noha Kolkailah who is one of the founders of the Peace Academy. Noha was born in Cairo, Egypt and was raised in California. She studied Biochemistry, got her teaching credentials, and a master's in Educational Leadership and Administration from Cal Poly State University. She is the main visionary behind this K-12 master plan. She created the program criteria for the school and the curriculum that would be implemented. Once we identified what she envisioned, Lucas Johnston, brought to life a design that would incorporate outdoor learning and collaborative spaces.

## **Deliverables**

### *Design*

The Peace Academy envisions this master plan to be start from Kindergarten all the way through High School. With this in mind, the project will be built in phases. This will start with the K-2 campus and follow along with three other phases as the school gains more stability. Designing a school that has diverse and open spaces for children to learn and create would help support alternative learning. Flexible site specific design will help each student get the most out of their learning experience and utilize the surrounding areas to the best of their ability.

### *Site Analysis/Existing Structures*

The project location is the Historic Boysen/Fiscalini Ranch, a 348 acre site located on the city boundary of San Luis Obispo and the intersection of Foothill Boulevard and Los Osos Valley Road. The ranch is currently being used for dry farming and cattle grazing. The property extends back into the Irish Hills and has stunning panoramic views of San Luis Obispo and Morro Bay. Currently the site has an existing Ranch House, Dairy Parlor, and two abandoned smaller houses on it. The Peace Academy hopes to restore the Dairy Parlor into a farm stand market. The other existing structures will be demoed. The site has very steep topography and will need new access roads and paths throughout.

### *Preconstruction Schedule*

Being that the Peace Academy is at the very beginning of their design and construction process, I wanted to create a preconstruction schedule to give them a rough estimate of how long typical preconstruction will last for this size of project. This schedule includes activities such as program and design, schematic design, grant writing/fundraising, as well as moving from design development drawings to construction drawings. The process for permitting is also detailed out in the schedule along with construction buyout.

### *Phasing Schedule/Phasing Plan*

Once I developed the preconstruction schedule, I focused on how to break up the master plan. There are four phases to this project based on their locations on the site. The first phase is the entrance to the school and this includes the restoration of the barns which in the future they want to make a farm stand with a market. The second phase is the international student cafe, pediatric wellness center, and the community center. The third phase is the K-5 learning spaces and a cafeteria. The fourth phase includes the high school, recreation center equipped with tennis courts, a track and a gym. This phase also includes dorms for any future summer programs they intend to facilitate. In my phasing schedule, each phase is overlapped to optimize the quickest timeline to complete this master plan.

### *Phase 3 Breakdown Schedule*

My fellow architecture student in my group focused on the design of the K-5 Learning Centers in this phase. This means that the most detailed buildings for this master plan were included in phase three. Because there was more information regarding this phase, I decided to complete a more detailed construction schedule. This schedule includes the two identical K-5 Learning Centers.

### *Site Logistics Plan*

Similarly to my breakdown schedule, I decided to focus on phase three for my site logistics plan. The site logistics plan was made on SketchUp, a 3D design software. The learning center models were imported from the Architect and the Cafeteria was modeled in SketchUp. This plan included the Cafeteria, Learning Center A, and Learning Center B. Access to the construction site is not a big issue, but more so grading into the topography for ease of construction. Access roads and site landscaping were also included in this site logistics plan.

### *Hazard and Risk Mitigation Plan*

The hazard and risk mitigation plan identified probable risks that could happen throughout the project and how to successfully mitigate those hazards and risks. The biggest regional risks identified for San Luis Obispo are landslides and earthquakes. The biggest construction risk is worker safety because the project site is massive and there will be a lot going on as multiple phases are happening simultaneously. Another big risk for this project is funding. This project will solely be funded by sponsors and donors. Their ability to keep the project funded throughout the duration of the schedule will be crucial to a successful project.

### *Stormwater Pollution Prevention Plan*

The purpose of the stormwater pollution plan (SWPPP) is prevent harmful discharge from the jobsite into any adjacent or nearby bodies of water. The plan identifies the main nearby bodies of water as well as when the main rainy season is in San Luis Obispo, California.

### *Site Utilities Analysis*

There are existing structures on the project site but currently they are unoccupied. It is uncertain whether the existing utilities will be available to use. If not, there will have to be new connections and rerouting into the main lines from the city of San Luis Obispo. Because the site was previously used for farming and cattle grazing, there would have to be major site improvements regarding wet and dry utilities.

## **Lessons Learned**

I think Journeyman International was a great choice for my senior project. I was given my own responsibility and timeline. There was no one guiding me or teaching me about each deliverable. This will benefit me in the future because it relates so heavily to how it is in the workforce. Similar to the workforce, there was no one checking on me all the time. It was really up to me how much effort I put into this project and how much I wanted to get out of it. Additionally, all of the deliverables were a culmination of the Construction Management curriculum throughout my time here at Cal Poly. This project gave me the opportunity to show what I have learned through classes while also helping my team members on their part of the project.

An important lesson learned during the quarter while completing my senior project was communication. At the beginning, it is important to have meetings with your project team before you start on anything. All team members need to be on the same page and working towards the same goals. If one team member is only focused on design and doesn't take into consideration feasibility; it will hurt the project team in the long run and cause the owner to be frustrated by having to change the design so late in the project process. Ensuring that each team member can identify what they need from someone else on the team at an early stage would greatly benefit the efficiency and get everyone to know what the goals are for each person on the team. This is something that I would have done early in my quarter of completing the project. It would have been less confusing for each team member because later in the quarter I was needing certain information from project members that could have been explained earlier.

## **Application to Construction Industry**

Throughout my classes as a Construction Management student at Cal Poly, I was exposed to a few interdisciplinary classes. Most of these classes were in regards to Architectural Engineering. I got very little exposure to architecture and what architects do throughout preliminary design. However, this Journeyman International project made me collaborate with architects and learn the process of being given an idea for a possible project then bringing it to life. This applies to the construction industry because I will be working directly with architects on a daily basis. This project gave me a real world experience of the many design changes and challenges given by an owner and having to relay those ideas to the architect. Although on a smaller scale, this project has given me the opportunity to learn how to create a preconstruction package for an owner which I will be doing in the near future. I hope to utilize all of these skills I've learned through my project team of architecture students in the construction industry once I graduate.