

# Resiliency vs Reality

Ainsley Henderson & John Thefanides

## Weed Cohort Integrated Project Delivery

## Introduction

In 2014, the Boles fire destroyed nearly 150 structures in the town of Weed located in Siskiyou County, California. This totaled about sixteen percent of all homes in the area creating a large need for housing and relief in the area. Fast forward to 2017 and the

community still has yet to completely recover from the damage done. Our senior project was a collaborative effort spanning the last academic school year which heavily implemented

integrated project delivery and panelization strategies in order to meet budget constraints. Cal Poly students of different academic disciplines were partnered together to work with a client located in Weed,

California known as Great Northern Services (GNS). The following will further elaborate on this process of working with real clients and meeting the original goals set forth.

## Process

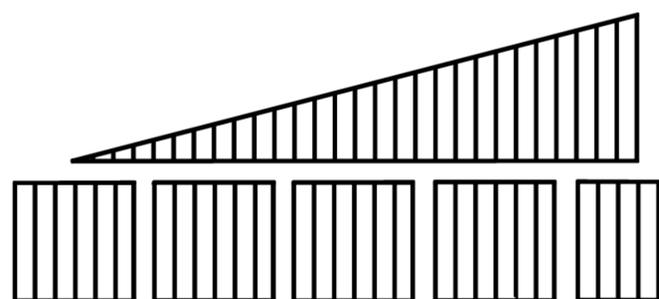
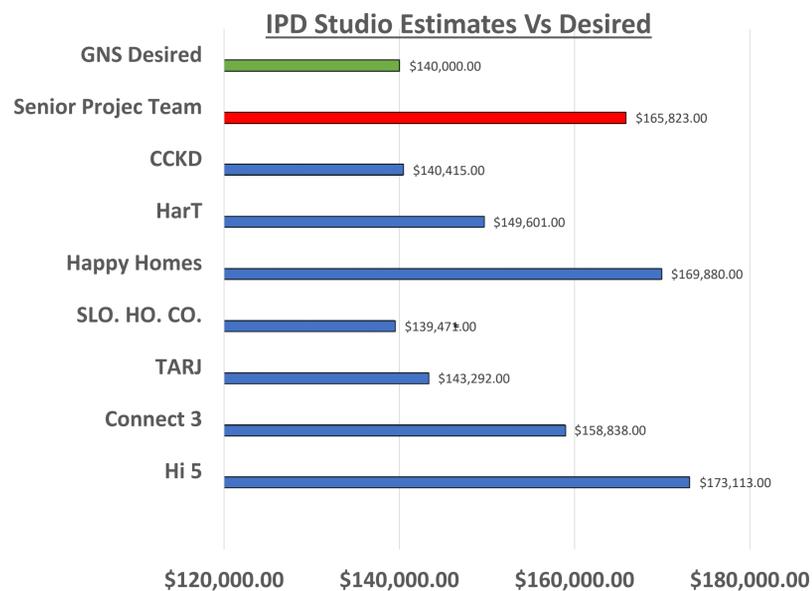
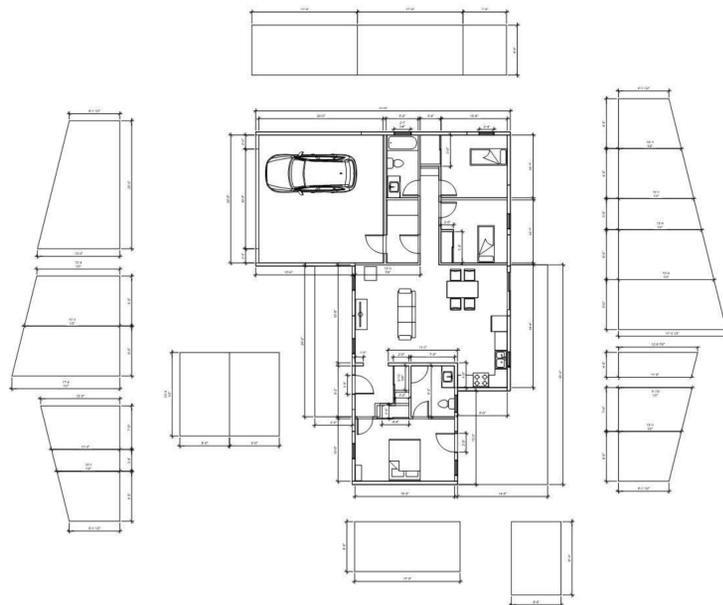
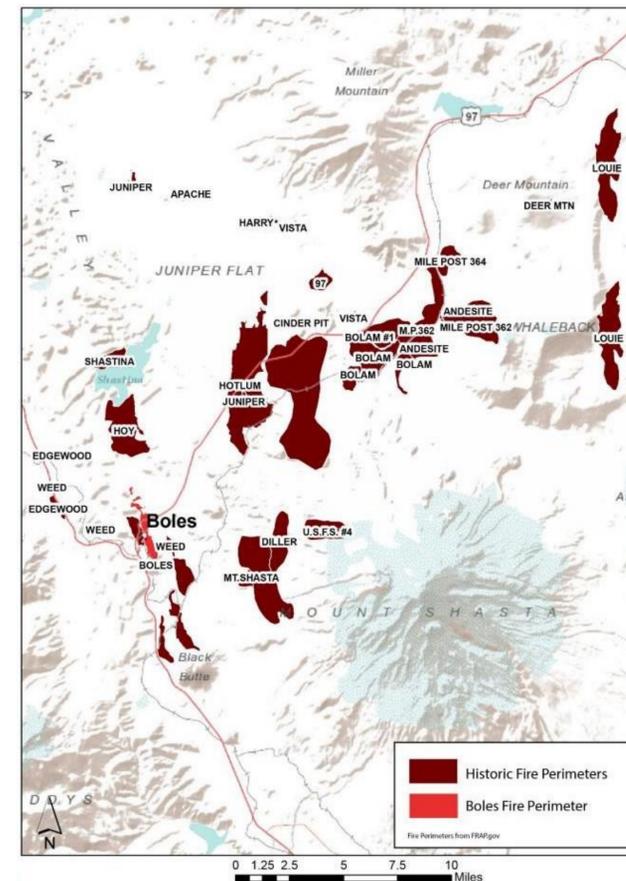
GNS put forward this project to assist in the regrowth of the city with to goal to provide permanent housing for working class, "blue collar" families. Initially, GNS required that we meet their resiliency plan in order to prevent a tragedy, such as the Boles fire from happening again. The requests from GNS included a desire to have the chosen home be passive house. Passive house embodies a home, demanding high standards for energy efficiency. The purpose for this is to lower the building's ecological footprint and create a home with little energy consumption. Some if the passive house components GNS asked to be included in the designs were high R-values, Energy Star appliances, Passive Cooling and heating. Initially we attempted to implement these strategies, including the use of SIPs, Higher R-Values, and Energy Star Appliances. Teams also sought out to find materials that would aid in meeting these requirements. Materials such as metal roofing and fiber cement board siding were all considered due to their resilient properties.

Throughout the design process our cohort came to realize that due to tight budget and land use constraints we would be far fetched to meet these objectives. Panelization quickly became a high priority for our project as it would give us more room to work with financially. It was estimated to save GNS considerable amounts of money labor and material costs for framing. The original vision would be done by panelizing the exterior walls at Cal Poly's campus using lumber donated by the Roseburg Forestry Products, a local mill in Weed.

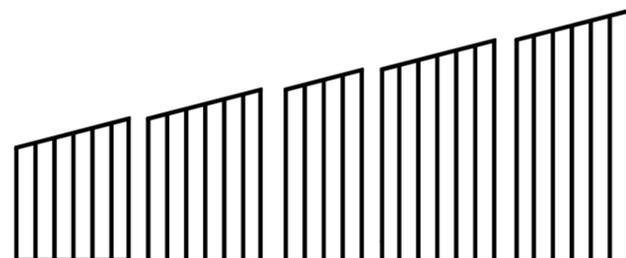
Due to the drastic changes in design and overall deliverable of the project our conclusions were very different than what we set out to accomplish in the beginning. The budget we were given was \$140,000. Prices were shown to be unreasonably higher than anticipated, so the design was shifted to a more traditional approach. Our final product was able to meet the average price of housing in Weed, being on average \$173,000 as stated in the Resilience plan. Comparing this price to our deliverable of \$165,823, we were able give a somewhat less expensive option of affordable housing to the community.

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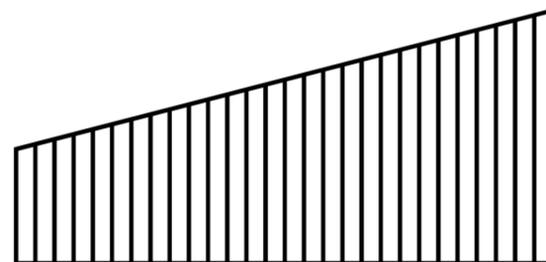
Realistically, when it comes to working with real clients it was shown through this project that resiliency cannot be attained to its fullest extent when budgeting is a primary concern. We learned that in projects nothing goes according to plan or in the timely manner that you may want it to. It doesn't help when students are playing primary roles in design and construction for the project either. We were not able to meet the original proposal for our project to build panelized walls for GNS due to time constraints that limited the time we could wait for approval to proceed then actually build what we needed to.



1<sup>st</sup> Panel Design



2<sup>nd</sup> Panel Design



3<sup>rd</sup> Panel Design

