

# A Study of Cal Poly Students' Preferred Career Path: A Focus on Alumni

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The construction industry is a fragile system with an intricate mix of field and office – labor and management. These two branches are critical to keeping any project running smoothly. However, the industry is noticeably changing and this fragile structure is deteriorating. Field positions are getting tougher and tougher to fill for most companies in the construction industry. Without skilled field employees, the companies are losing one of the two most important aspects of construction. Without field employees, office employees may be tasked with picking up additional duties beyond their expertise – further advancing their stress levels and sacrificing quality with their original office duties. Without skilled field employees, general contractors may have to look to subcontractors more often – which may not fit within the company's overall business plan. As we have seen, the labor shortage is a large issue going forward. This report presents an analysis of why Cal Poly graduates choose the office route over the field using survey data.

**Key Words:** Construction, Cal Poly, Graduates, Alumni, Office Path, Field Path

## Introduction

Cal Poly construction management students are taught rather early in our education that there are generally two paths to pursue in the construction industry: field or office. On one hand, we have the field path where in a general sense; the peak position is generally a superintendent or foreman. For the purpose of this report, the definition of the field path is spending over 50% of one's time in the field instead of the office trailer. With this in mind, anyone with construction experience understands that one company's field positions differ largely compared to another company's. From a general perspective, a superintendent's duties include coordinating and overseeing construction activities on a daily basis, closely monitoring the work along with the problems that arise, and acting as the first point of contact for the installers and subcontractors (Davoren 2017).

In the office path of construction, the peak position is to become a project manager or chief estimator. For the purpose of this report, the definition of the office path is a worker spending over 50% of their time in the office. Daily duties of office positions differ from company to company and the general perspective of a project manager's duties include the ability to "handle the construction project from beginning to finish. The project manager plays the primary role in planning and monitoring the project as it continues. He handles planning, direction and budgeting of the project, and he also manages the problems that arise while construction is in progress. The project manager considers the proposed construction project, and then decides the critical project tasks" (Davoren 2017).

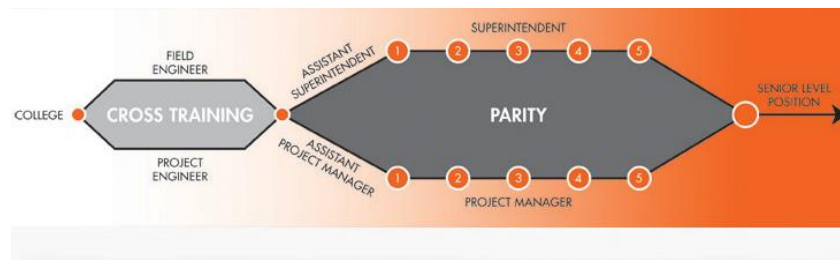


Figure 1: Whiting-Turner entry-level career path (Whiting-Turner, 2018)

Figure 1 shows the general pathway that Cal Poly students have grown accustomed to. After college, students generally have a choice of becoming a field engineer (field) or a project engineer (office). After “graduating” from these entry-level positions, they continue on their chosen path, field or office, and become either a project superintendent (field) or project manager (office). Some companies provide cross training opportunities with newly hired graduates, exposing new hires to both areas of construction. This cross training generally translates to a hybrid position where on one job the recent graduate may be a field engineer and on the next they will be given project engineer tasks. After having experience with both positions, they are then able to decide which pathway they enjoyed the most. However, many companies don’t do this cross training, meaning students must decide which position they want upon graduating college. Understandably, this diagram does not apply to each and every construction company. Every company handles its new employees differently. For example, some companies may combine field engineers and project engineers into one hybrid position. Furthermore, field and project engineers are likely given different responsibilities in each unique company. However, figure 1 shows a very basic career path that students have learned through their courses as well as connecting with prospective employers.

## Methodology

To determine why graduates chose their career path, field or office, an anonymous survey was sent electronically to alumni. The survey was composed of 7 questions and sixty-one responses were received. The questions asked in the survey included:

- I. What year did you graduate?
- II. Upon graduation, what type of position were you looking to get?
  - Office position
  - Field position
  - Undecided
  - Other (please describe)
- III. If you chose the office route, why? Please rank importance of each factor (N/A, Somewhat important, Neutral, Important, Very important)
  - The pay was better
  - More potential to move up in the company
  - Job security
  - Preferred daily hours
  - Preferred type of daily work
  - Easier day to day work
  - Safer atmosphere
  - Less stress
  - Cal Poly better prepared me for this route
  - Only Position that was offered to me
- IV. If you chose the field route, why? Please rank importance of each factor (N/A, Somewhat important, Neutral, Important, Very important)
  - The pay was better
  - More potential to move up in the company
  - Job security
  - Preferred daily hours
  - Preferred type of daily work
  - Easier day to day work
  - Less stress
  - Cal Poly better prepared me for this route
  - Only Position that was offered to me
- V. Have you switched paths (office to field/field to office) since you started working full time with a construction company?
  - Yes – field to office

- Yes- office to field
  - No
- VI. If you answered yes above, why did you switch paths? (select all that apply)
- Higher pay
  - Better benefits
  - The day to day tasks were more appealing to me
  - Company need
  - N/A
  - Other (please specify)
- VII. How long do you plan to stay on your current path (either field or office)
- 0-6 months
  - Up to 1 year
  - Up to 3 years
  - Up to 5 years
  - My entire career
  - Undecided
  - Other (please specify)

### Hypothesis

Based on experience and information gained through articles and an informal interview with one construction owner, it is expected that over 60% of alumni will have preferred the office path of construction upon their graduation. It is expected that the two most important factors for choosing the office path are that Cal Poly better prepares them for that route and that there is more potential with an office position than there is with a field position. For the minority of respondents that preferred the field path upon graduation, the most important factor is expected to be that they prefer fieldwork instead of sitting behind a desk for eight hours each day.

### Results

Each question’s responses will be summarized and illustrated individually.

#### *Question #1: What year did you graduate?*

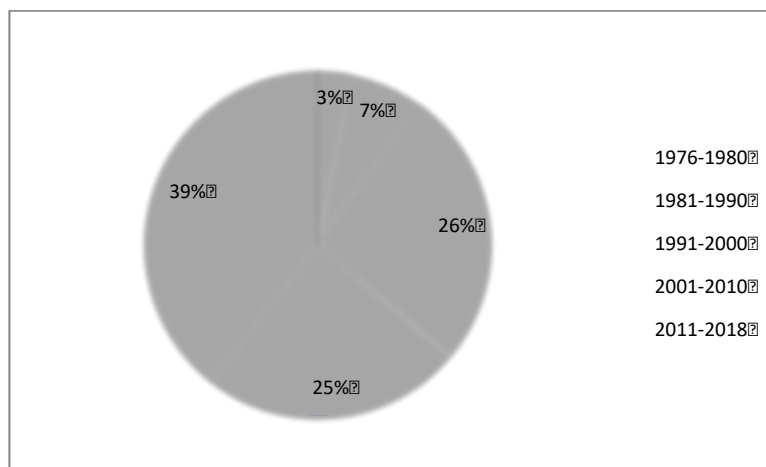


Figure 2: Pie chart representation of responders who graduated within a given decade

As we can see from figure 2, two responses came from the decade of 1971-1980, which is 3% of the total responses. Four responses came from the decade of 1981-1990, which is 7% of the total. Sixteen responses came from the decade of 1991-2000, which is 26% of the total. Fifteen responses came from the decade of

2001-2010, which is 25% of the total. Finally, twenty-four responses came from the current decade 2011-present, which is 39% of the total.

*Question #2:*

Q2 Upon graduation, what type of position were you looking to get?

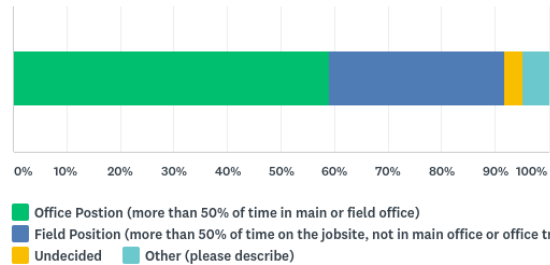


Figure 3: Stacked horizontal bar graph of preferred positions after graduation

As we can see from figure 3, 59% of respondents were looking to receive an office position upon graduation from Cal Poly. Furthermore, about one third of respondents were looking to receive a field position upon graduation. The remaining 8% of responses were made up of undecided individuals and those who gave a free response. There were three free responses in total to the above question. Two of the responders noted that they were looking for a company that would support both field and office positions. The other response was an individual who was looking for an architectural internship.

*Question #3:*

Q3 If you chose the office route, why?

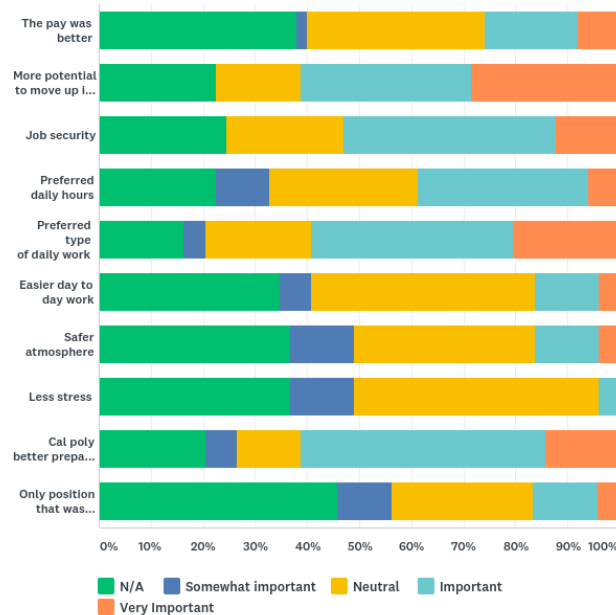


Figure 4: Stacked horizontal bar graph showing why responders chose the office route

As we can see from figure 4, “more potential to move up in the company” yielded the most “very important” responses. Furthermore, the qualification with the most importance (combined “important” and “very important” responses) was “Cal Poly better prepared me for this route.” The qualification with the

least amount of importance (combined N/A, somewhat important, and neutral responses) was “Less stress.” There were a large number of “N/A” responses for this particular question. It is likely that these responses reflect a qualification of no importance or for those who chose the field path and therefore this question does not apply to them.

*Question #4:*

Q4 If you chose the field route, why?

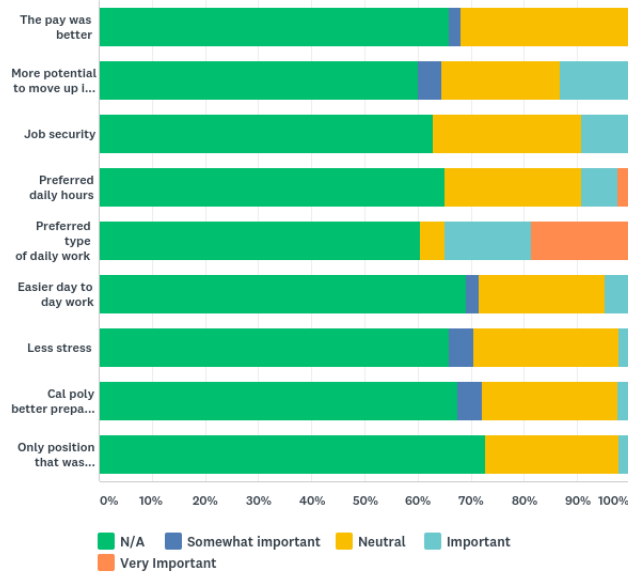


Figure 5: Stacked horizontal bar graph showing why responders chose the field route

As we can see from figure 5, there was one qualification that was seen as the most important for those responding to this question. “Preferred type of daily work” generated the most “very important” responses as well as overall importance (combined “important” and “very important” responses). The qualification with the least amount of importance (combined N/A, somewhat important, and neutral responses) was “The pay was better.” Another notable qualification with little importance was “Cal Poly better prepared me for this route.” There were a large number of “N/A” responses for this particular question. It is likely that these responses reflect a qualification of no importance or for those who chose the office path and therefore this question does not apply to them.

*Question #5:*

Q5 Have you switched paths (office to field/field to office) since you started working full time with a construction company?

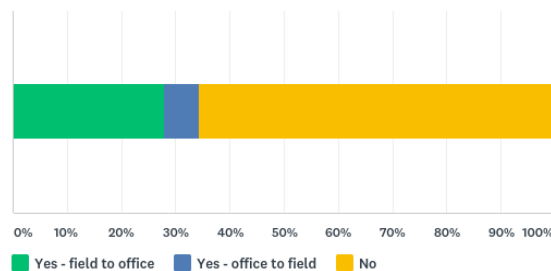


Figure 6: Stacked horizontal bar graph showing if responders have switched construction paths

Over 65% of responders have not switched positions since they started working full time. Of the 35% of responders that have switched positions, the majority of them (28%) have switched from the field to office. The remaining 7% of responders switched from the office to the field.

Question #6:

Q6 If you answered yes above, why did you switch paths? (select all that apply)

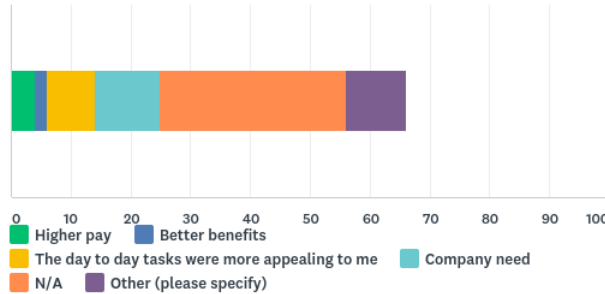


Figure 7: Stacked horizontal bar graph showing why responders switched construction paths

The majority of responses to this question were “company need” (21%) and free responses (19%). Most of the free responders wanted the challenge of a new position as well as the added experience brought with working both paths of construction. Another reason for switch was company structure. Some companies like to expose employees to both construction paths to offer a well-rounded knowledge of construction. Others found their skillsets were better suited for the other path of construction. Lastly, the final theme of the free responses was that some switched paths to give them more control of their life and/or more time to spend with their family. There were a large number of “N/A” responses for this particular question. It is likely that these responses reflect those who answered “No” to the previous question and therefore this question does not apply to them.

Question #7:

Q7 How long do you plan to stay on your current path? (either field or office)

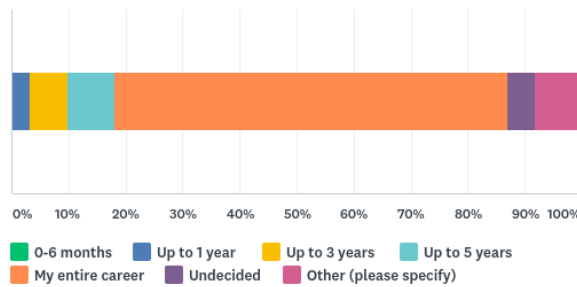


Figure 8: Stacked horizontal bar graph showing how long responders plan to stay on their current career path

The majority of responders (69%) plan to stay in their current path for the rest of their career. There were also 5 free responses to this question. Most of the free responses translated to undecided while other responses were that the individual was looking to start their own company in the future.

## Discussion

There were some surprising results throughout the survey and a lot of new knowledge was gained. Each question's responses will be analyzed individually.

### *Question #1: What year did you graduate?*

This question yielded quite interesting results. Graduation years reached as far back as forty-two years in 1976. This surprising result is advantageous for the overall study, as a larger pool of alumni can be studied.

### *Question #2: Upon graduation, what type of position were you looking to get?*

It is interesting that there were around one third of responders who preferred to be in the field. This question provides an important conclusion - students like a mix of both the office and the field portion of construction. After looking at the oldest 10% of responders, their responses to this question roughly corresponded to the survey average. Based on this survey, this shows that Cal Poly graduates have maintained the same general preferences upon graduation over the last 40 years.

### *Question #3: If you chose the office route, why?*

As discussed prior, the qualification with the most "very important" responses was "more potential to move up in the company." An office position teaches management, which is what is required for the highest positions within a company. Construction companies don't divulge that one path has more potential than the next. Instead, it can be seen through experience that the project managers are more likely to get promotions than the field superintendents. It is human nature to strive for more - which is why it makes sense that this factor is the most important for graduates.

Furthermore, the most overall important (combined "important" and "very important" responses) factor is that "Cal Poly better prepared me for this route." The Cal Poly Construction Management program prides itself on being very "hands-on." There is still more time spent on learning how to manage a project as a whole (estimating, budgets, schedules, etc.) versus learning how to thrive in the field (ie. Building a shed in residential class, physically managing subcontractors on a job, etc.)

The qualification with the least amount of importance for responders was "Less stress." Responders understand that stress is a likely occurrence for any job - especially construction. In fact, Mei-Yung Leung (2008) states, "nearly 70% of construction professionals suffer from stress..." There will be stressful situations in both the office and the field so this qualification holds little importance.

One surprising aspect of these responses was that the qualification of "safer atmosphere" was one of the least important factors to most responders. From the OSHA website, "The fatal injury rate for the construction industry is higher than the national average...for all industries." There is obviously less risk for injury while working in an office than working around heavy machinery, heights, deep trenches, etc. that you generally see on a construction site.

### *Question #4: If you chose the field route, why?*

As discussed prior, the qualification with the most "very important" responses was "preferred type of daily work." As previously mentioned, Cal Poly prepares students to enter the field side of construction through hands-on experiences. Additionally, some people don't find an office job appealing. Luckily, these types of people can go into the field and physically build, problem solve, etc., instead of sitting behind a desk for eight hours each day. This factor also yielded the most overall importance (combined "important" and "very important" responses) for responders.

One factor that didn't hold much importance in the minds of responders was "Cal Poly better prepared me for this route." This particular factor held much importance for those who chose the office path and holds little importance for those who chose the field path. This aligns with the previous discussion that Cal Poly indeed prepares graduates better for the office path.

*Question #5: Have you switched paths since you started working full time with a construction company?*

Nearly two-thirds of respondents have not switched paths since starting working full time - which aligns with the hypothesis. Once people start in a position, they are likely to stay in the position and perfect their craft. It was also to be expected that for those who have switched paths, the majority of respondents switched from field to office (28%). It seems that office positions have a higher demand for students coming out of Cal Poly.

*Question #6: If you answered yes above, why did you switch paths?*

When looking at this question, one must keep in mind that this is analyzing only 33% of respondents who have actually switched paths in their career. The vast majority of respondents have not switched paths and therefore left this question unanswered.

There was no real "favorite" response among the options. "Company need" and "Day to day tasks were more appealing to me" seemed to gather the most responses – by a small margin however. The fact that company need was a popular response confirms the statement from the above analysis that office positions have a higher demand for students coming out of Cal Poly. On the other hand, "day to day tasks were more appealing to me" is a surprising favorite. As we learned from earlier questions, people chose their initial path on a job that they found the most appealing. However, this question shows that people's opinions have actually changed from their initial decision. The free responses help make sense of this odd result. Many of the free responses have the general theme of workers wanting a more rounded construction experience. People want to have both paths of construction experience to help them become as skilled as possible. Again, people instinctively want more than they currently have, and a more skilled construction worker is more likely to get promoted to a higher position.

*Question #7: How long do you plan to stay on your current path?*

69% of respondents are likely to stay in the same path as they are currently in now - for the rest of their career. Again, this result can be attributed to our previous conclusion that most people are likely to stay in their same position to perfect their position's craft. It was surprising that only 5% of responders answered "undecided." This is an enormous question and it was not expected that the vast majority of respondents know what to expect for their future.

## **Conclusion and Further Research**

This report's research and analysis can be expanded upon. This report shows what positions graduates seek and why, but it hasn't explored the other side of the partnership – companies themselves. It is unknown if recruiters are even looking for field personnel or if they are just seeking office employees from graduates in general.

Cal Poly could also start offering students a concentration in the construction field. Instead of one general program, students could be given the choice to take classes directed towards the office or the field. Future senior projects can take the data presented in this report and use it to research feasibility and interest of offering concentrations in the Construction Management program.



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