

Summer Internship:

Design and Construction Unit in Albany, NY

Ayana Douglas, Syracuse University, Syracuse, NY

During the summer of 2005, I worked at the Office of General Services within the Design and Construction Unit located in Albany, New York. This is a New York State government agency that provides services to all state agencies, local municipal agencies and the public. The Office of General Services provides many different services to its clients. They provide architectural, engineering and construction management services, management of New York State's properties services, assist in the support and distributive services for government agencies, and promote visitors' tours and assistance services. Their main headquarters are within the Empire State Plaza of Albany.

I worked within the Design and Construction Unit on the 34th floor of the Corning Tower. It was a beautiful place to work, since I had a majestic view of the city of Albany from my cubicle. However like most other office buildings there were rows of cubicles. The main client for this division was the New York State Department of Corrections, which manages all the correctional facilities in New York State.

I was an Engineering Intern within the office. As an intern I was given the task of doing whatever needed to be done within the office. Basically I was a technical assistant. I was given many different tasks to do that sometimes did

not relate to each other but which, all needed to be done within a relatively short period of time.

Most of my projects were constructing profiles and aerial views of an area using AutoCAD Land Desktop. Profiles are basically vertical representations of construction drawings while aerial views are orthogonal construction drawings with aerial photography. The purpose of profiles is to illustrate to the engineer and client that their design does not interfere with devices, structures, wires or pipes that already exist in the ground of the construction site. Profiles can be very tedious at times because every detail within the drawing needs to be drawn at the correct place and scale. The profiles that I was given to do were not more than a page long, but still contained a lot of details. The aerial views were fun to do and quite simple. It was basically placing planar construction drawings on aerial photo backgrounds.

The other type of work I was given was reviews. This required me to look at past projects and revise them for clarity, mistakes, errors and information. I reviewed construction drawings for engineering firms, researched information to help complete projects and along with the project engineer attended meetings, of current projects. One interesting project required the replacement of the current sanitary sewer system with a better system that included larger pipes and a better pitch. A 'better pitch' would allow the sewage to follow faster through the pipes. A very huge problem arose during construction when the U.S Army Corps of Engineers issued a cease-and-decease order on all construction activity because of the wetland that had been destroyed during construction.

A wetland is a swamp or bog that contain waterlogged soil and remains this way for long periods during the year. They tend to be the host of many types of migratory bird species and plants that are unique. They are also known to be a contributing source to short-term and long-term water storage and assist in the removal of dissolved substances in water. The U.S Army Corps has strict guidelines that need to be followed if construction is done within a federally protected wetland. Unfortunately, the contractor and the engineer did not follow these guidelines. The contractor also redirected two of the major streams that fed this wetland. Therefore the wetland was no longer wet, but rather dry.

I was given the task of reviewing the drawings, of this new construction plans that now had to be approved by the Army Corps of Engineers. My boss wanted to make sure that the stormwater erosion and sediment controls within the drawings compiled with the New York State Standards. There were many things within the drawings that I found needed to be corrected, added or fixed to meet the NYS Standards. My boss also agreed to these changes, and I had to write a letter to the engineering firm about the recommendations.

I had fun working within the office. There were days when I had nothing to very little to do, but there was always somebody else in the office to talk to, so I was never completely bored. The office environment was great, although it was not perfect, because not everyone was doing work most of the time. However, I did learn how to play pinnacle and poker. These skills are socially important, because way to build good relationships and earn respect within an office.

Some other skills I learned were using HydroCAD and AutoCAD Land Desktop. HydroCAD is a program that uses the TR55 and TR20 methods to model stormwater systems. I also learned the importance of stormwater management systems on construction sites and how to review plans that contained these structures. This internship gave me ammunition to pursue stormwater management as part of my civil engineering career. I am currently enrolled in a stormwater management class, which is one of the few semester long courses taught within New York State. This experience also helps reiterate the importance of always giving your opinion, asking questions and showing interest in the work presented. My boss tended to value the fact that I had these qualities and was an active intern within the office.

There are always pluses and minuses of working in any field. In civil engineering, the good aspects included features such as a sound job market, the fact that the engineer gets to design something and then watch it being built, and that the job is always challenging. If the design was too easy then the construction will make it hard. The challenge is when the design is being built. Contractors and engineers are usually at odds. They are both builders and tend to see things differently from one another.

The bad aspects of working for a private consulting civil engineer are that you must always be efficient and make a profit. In order for consulting firms to stay in business they need to make a profit on everything they do. This puts pressure on the civil engineers within that firm to compete with each other and

other civil engineering firms. Working for the government alleviates the need to compete because of the long-term job security.

In the long run I would like to either run my own consulting engineering firm or own a prosperous business. These goals will require that I have managerial skills as well as engineering skills. The internship that I had at the Office of General Services was useful because the project engineers within the unit allowed me to accompany them on some of the field meetings that they had and on their current projects. This allowed me to witness some of the simple and difficult problems that may occur during construction. I expect to encounter similar problems as a manager of a firm or a future engineer. However, this was a great experience and one that I am happy to add to my resume, as it will assist me to advance my own career in civil engineering.