

## **Vietnam Internship Report**

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### **Introduction**

In the Vietnam Internship Program (VIP), a total of seven graduate students, five from construction management and two from structural divisions, stayed in Ho Chi Minh City (HCMC) from December 29, 2019 to January 11 2020. Each student stayed in both the Chan Phuong Engineering (CPE) and the Authentic Collaboration leads up to Sustainable Construction (ACSC) companies for one week each. This document describes the program objectives, expectations from both the author and the hosts, work experiences, cultural experiences and suggestions resulted from this internship of the author.

### **Program Objectives**

My objective for this internship is because I have never been to Vietnam before. I also haven't had experience an internship abroad before. I am convinced that this program would give me a unique international experience I'm looking for a successful professional life in the future.

### **Personal and Host's Expectations**

During the internship period I expect to gain more international experience. Working in our home country is now considered mainstream, having international experience can only be obtained through this kind opportunity. I also think that an ideal workplace should have a cross cultural team in it to increase variety and cultural sensitivity. Moreover, from this experience, because we worked in Vietnam, we also expect to learn more about Vietnam work ethics.

On the other hand, I expect to contribute by expressing opinion about construction industry best practice in Indonesia and Taiwan.

### **Work Experiences**

We start the internship at CPE and then moved to ACSC on the second week. Over the course of two weeks period we manage to learn these. First obviously we have to learn about project life cycle in Vietnam. Typically, the project in Vietnam have these stage:

1. Decision of The Project  
Investor or project initiator usually start by making a decision whether to build a project or not.
2. Look for The Place  
After the project initiator conclude they want to build certain project they will look for the right place to construct the project.
3. Feasibility Study  
Feasibility study is the assessment whether a project is technically and financially sound to be executed.
4. Investment License  
After the owner think that such project is technically and financially feasible, they should bring this proposal to the government to gain investment license before the project kick off.
5. Choose Designer/PM  
The owner then chooses designer/PM for the project. This selection process can be an open bid or directly selected by the owner.
6. Appoint Designer/PM  
In this phase a designer/PM officially selected by the owner to build the project.
7. Design Phase  
The selected designer/PM then design the project based on the client's need
8. Permitting Phase  
Before the construction start, the project must secure a construction permit from local authorities.

9. Construction Phase

The construction firm build the project according to the agreed specification.

10. Hand Over

Handing over the finished project is the last stage of a construction project phase.

For design Phase itself can be breakdown into three distinct part:

1. Conceptual Design

Conceptual design is the earliest form of a design process. Usually it is included a broad outline of what to build in form of sketches or models.

2. Development Design

Development design would be the intermediary between conceptual design and detail design. Design changes in this stage would harder to alter than conceptual design but still relatively easier than detail design.

3. Construction Detail Design

Construction detail design is the detail type of design. These drawings would be what the engineers on site use as a guide to construct the building.

4. As-Built Design

As-built design is what actually built on site. Sometimes due to certain circumstances there several difference between detail design and as built design. These disparities need to be recorded for future maintenance of a structure.

Other than that, the bid type that is commonly used in Vietnam are:

1. Lump Sum

This type of construction contract is the most common type of construction contract in Vietnam and the world. In this type of contract, the construction cost would be defined and concluded before the construction, therefore the owner knows exactly the final price in advance. The advantages for this type of contract would be the reduced risk borne by the owner. On the other hand, the disadvantages for this type of contract would be contractor bidding higher price because of the escalating risk involved.

2. Design & Build

Design build is the type of contract where the same entity design and build the project in oppose to the traditional construction where there are two bidding process for each step. Owner usually prefer this type of contract because it saves time because of its fully integrated feature. However, an owner needs to put more attention for this type if contract, they must only use this type of contract when they truly believe the contractor capability.

3. Cost + Fix Fees

Usually when it is impossible to guess how much a construction cost is. Owner is strongly encouraged to use a cost-plus fix fee. In this type of contract, the contractor would reimburse the construction cost and finally net a profit based on the fixed fees agreed with the owner. The fixed fee part could be overhead cost and agreed profit margin with the owner. Compared to other type of contract, this is the most flexible type of contract.

4. Unit Rate x Quantity

Also know as unit pricing contract is the type of construction contract where the contractor got paid based on quantity of work performed measured in construction site. Each of this unit price such as labor, material, equipment, overhead, and profit attributable to that scope of work.

Move on to Bill of Quantities (BoQ). A bill of quantities is a document that used in tendering process in the construction industry in which materials, parts, and labor included price are itemized. The quantities are measured in number such as area, volume or weight. Because it is a detailed document, Bill of quantity always created after the detailed engineering design are all finished. The format of bill of quantity in Vietnam is the same with the rest of the world. It is a plus point for making people from other background understand it as well.

Moreover, in Vietnam we observe two distinct concrete construction method, those method are:  
Conventional concrete column construction method

1. Column layout work

The very first step of a column work is specifying where to build the column. Rope is a common tool utilized for this step.

2. Column reinforcement work

After finishing marking the column location, the next step is putting the reinforcement bar according to detailed engineering design agreed with the owner.

3. Column formwork

After that, we can continue by putting the column framework. This framework needs to tightly sealed to prevent leaking when pouring the concrete.

4. Concrete pouring

The final step would be pouring the concrete. There two methods for concrete pouring, the manual one or using a concrete pump, in the project we saw in Vietnam, they use the concrete pump.

Precast

In oppose to traditional concrete construction mentioned above, in Vietnam, the precast construction method is also getting trendier, our correspondence on site mentioned that using precast concrete saves construction time and make the concrete quality easier to maintain because usually fabrication process is in a more controlled environment compared to in-situ construction.

Sika Waterbar

Sika Waterbar is widely used in the construction project in Vietnam. The purpose of this device is to minimize water leakage from lower part of the building by extending the path for water to ingress to ensure better sealing. Construction project usually apply this in a part of construction where a leakage is commonly found such as split formwork. Sika Waterbar is commonly made of Flexible Thermoplastic PVC to increase durability.

Site visit

We saw a wide variety of factory construction project. The typical project life cycle is relatively short is Vietnam, it could only take for only six months. I learn from high tech facility design class that a semiconductor factory could be built in eleven months. I thought that duration is already impressive. But according to discussion and after extensive observation, the factory in Vietnam are usually simpler in design therefore relatively easier to construct compared to high tech facility design commonly found in Taiwan. Safety standard a bit different. Safety shoes was not always provided by the companies. I advise future interns to provide it on their own.



### Comparison between Taiwan and Vietnam

There are several differences between Taiwan and Vietnam construction practice. For example, in Taiwan the BIM contract is usually a request by client while in Vietnam usually BIM contract is something that initiated by the contractor initiative. Other than that, in structural aspect because Taiwan is more prone to earthquake than Vietnam, the seismic design requirement in Taiwan usually is higher. Finally, like I've mentioned before, the project duration in Vietnam are generally shorter due to integrated contract and technologically less sophisticated design requirement.



### Cultural Experiences

Vietnam is a unique country. We cover several aspects of cultural experience we had in Vietnam.

#### Food Experience

For the whole two weeks, we always eat local food because it is cheap and we want to fully immersed with the Vietnamese culture. Here is the list of our most favorite food and drinks we tried.

#### Vietnamese coffee

The taste of coffee in Vietnam is way stronger than the rest of the world. Moreover, the people there prefer to add condensed milk with the coffee to compensate the bitterness. We recommend Café Vy a must visit place to represent local taste.



### Pho

This is the most famous beef noodle soup dish in Vietnam. We had the chance to try Pho 2000. This particular shop is what Bill Clinton used to eat during an official state visit. But compared to other Pho chop we had tried; this was a bit subpar. The price from of a bowl of Pho from Pho 2000 was around 80,000VND. Outside here, usually it will only cost around 50,000NTD.



### Bahn mi

We usually eat this for breakfast. It a Vietnamese sandwich with French style baguette. It is fulfilling and cheap. The filling itself is different, sometimes they have simple vegetables, egg or meat for fillings according to preference. The price usually around 20,000-45,000VND per serving. The best we ever tried is from Banh Mi Huynh Hoa.



### Juice

The juice price here is so low compared to Taiwan. That is why we drink juice almost on the daily basis. Usually we order avocado juice that costs around 40,000VND

### Travelling around HCMC

HCMC have a lot of interesting place to visit. Here is some notable place to visit.

#### War memorial museum

This museum is the most visited museum in Vietnam. The building consists of three floors. Outside of the museum we can see some display of military equipment such as tanks, artilleries and aircrafts. When we enter the museum, they have display related to Vietnam war such as collection of photos from anti-war supporter around the world. For me the interesting part would be when I saw photos of Indonesian Communist Party from 1962, a few years before the part was banned by my government. Other than that, there are several graphical contents about US war atrocities over the years. They also have some displays about some infantry equipment. The souvenir shop in this museum is a bit overpriced. It is better to buy it somewhere else.



#### Ben Thanh Market

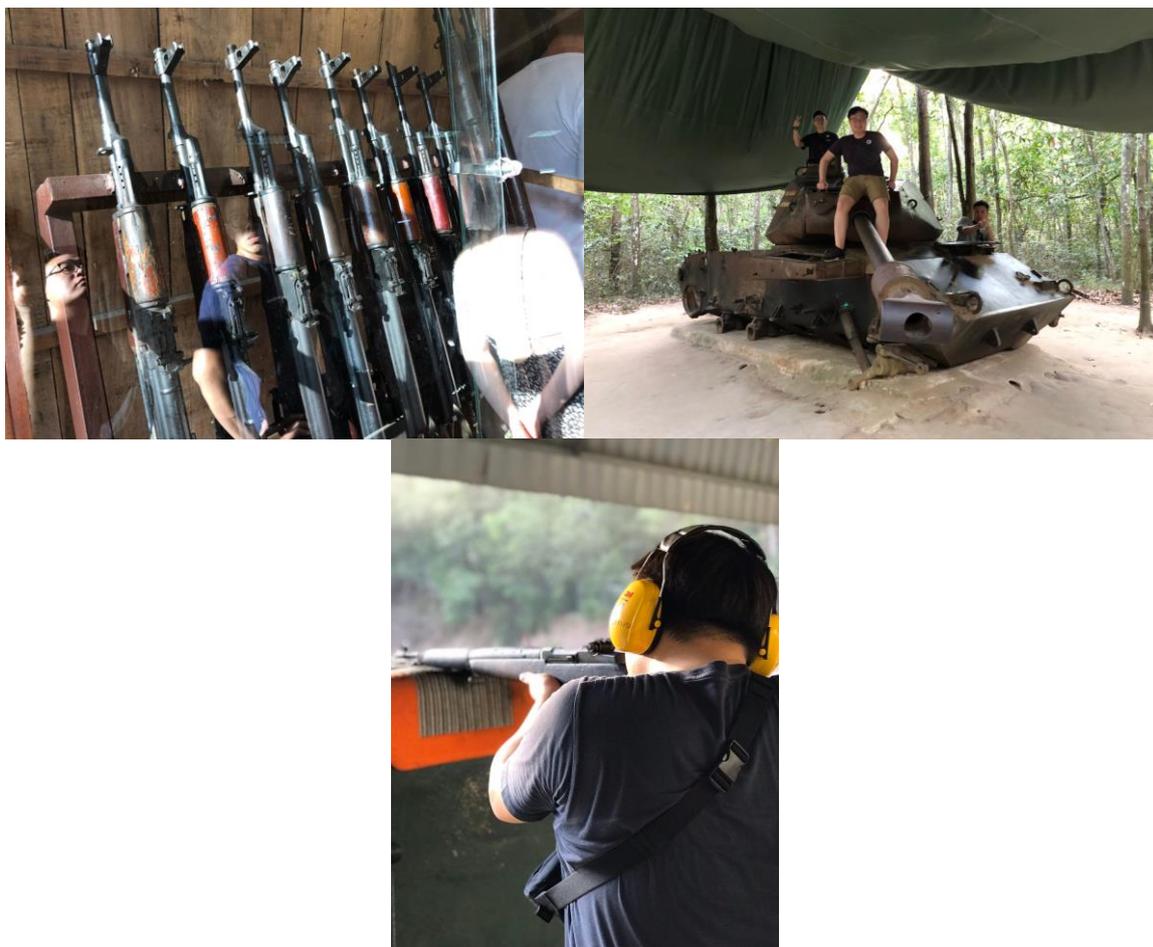
This market is the most famous traditional market in Vietnam. They sell a myriad choice of items to sell such as fruits, clothes, coffee or souvenirs. Most if the price here can be bargain, you can bargain the price here to around 50% of the original price. We purchased some fake Nike slippers, red star hat, local coffee to be brought home.

#### Cu Chi Tunnel

During Vietnam war, North Vietnamese armed militia construct and extensive underground tunnel for defense. We visited this war relic the day after new year celebration. We book the tour through an online booking website. It costs around 400NTD per person. On the tour day we decide to travel by bus to get there. It took approximately an hour to get there. Before we got there, we have to stop at a government souvenir shop for a while before proceed to Cu Chi Tunnel. We had a really wonderful tour guide that help us to explain all the artifacts and how people used to live during the war. We took a lot of photos in this site. There were a knocked down American M-60 tank there. That tank was the most commonly used by US army at the time. We also had the chance to look at a crater created by a B-52 bomber. I never expect the crater could be that big. Other than that, we also saw some reproduction of the booby trap installed by North Vietnamese during the war. The most horror part is that this booby trap was utilized not to kill the poor person but merely to disable and traumatized their peers.

After that, we went to the tunnel. The tunnel itself is not just merely tunnel. The facility inside the tunnel is actually quite impressive, they had kitchen, water well, and even hospital. We went to the tunnel, the size of the tunnel was so small, we barely fit in. Moreover, the heat inside the tunnel was unbearable.

The final part and I enjoyed the most are the shooting range. They have a wide selection of historical gun from that era. They had weapons from US such as M16 and M60 and weapons from Soviet bloc such as AK-47 and SKS. I decided to try M1 Garand because that was the only gun that I've never tried before. I spent 600,000VND for 10 bullets. Slightly expensive but okay. The recoil was massive but overall a really fun gun to shoot. That was the end of Cu Chi Tunnel tour and finally we went back to the hotel.



### Mekong River Delta

Mekong delta covering the southern part of Vietnam. It is the most productive region in agriculture in Vietnam. For this full day tour, we paid 380,000VND. We departed at 8:00AM from our apartment and it took around 1.5 hours to get to Mekong river delta. After that we arrive at the port and then we switch boat to go to the next place. Then we arrive at the village, we got introduced to some Vietnamese honey tea and tropical fruit while listening to local performer. They also have some animals for display such as bees and snakes.

After that we visit the coconut candy shop to buy some souvenir. This candy also sells Vietnamese cobra wine. We tried some free sample. The taste was interesting. Next, we took a traditional row boat to the small canal. After the ride, we switch to horse cart before arriving to the restaurant for lunch. The food was quite good. Typical traditional Vietnamese cuisine. After we were full, we took a boat ride back and then switch back to our van before we get back to the hotel.



### Independence Palace

This palace used to be the office of the south Vietnamese president before the war concluded. Ticket price to visit this place was around 40,000VND. On the outside there are a pair of T-54 Tanks used to broke in the palace during the last days of the war. The palace itself is an architecture masterpiece. The most interesting room would be the president living quarter. Other than that, the minister room and conference room are not less impressive. The basement room inside this structure were also full of antique communication equipment from the 60's made it an interesting display. There were also a Huey helicopter that used to be used by the president.



### Suggestions

I personally think two weeks is a really short period of time to actually contribute something to the company we served. I propose several alternative to mitigate this. For the first one I suggest that instead of two different companies, it is better if we just interned in one company only. One-week period was way to short even to understand the most basic tasks, if we can extend to two weeks, I expect students can learn more about the company. Other than that, I suggest that the department could extend the internship duration to at least one month. I think one-month interning is the bare minimum period of time to familiarize with specific engineering task in this type of companies. Last, I suggest to change the internship period. I personally conduct some surveys to some peers why they are reluctant to join this wonderful opportunity. Every interviewee stress that schedule conflict is the main reason why the did not sign up. This schedule conflict made students who are still taking a lot of classes wouldn't be able to join. I suggest to start the internship period during early of semester such as February or September in order to mitigate schedule conflict hence achieve ideal number of applicants.