

A Book Report on *Big Dams and Other Dreams* by Donald Wolf

Executive Summary

This study talks about a portion of the construction requirement for the Hoover Dam. The Hoover Dam was a landmark construction project because in 1931 – when construction of the dam started – it was the largest concrete structure that mankind had attempted to build. Thus, it was a tremendous challenge because there was no precedent for a project of this magnitude. The focus of this study is the planning and preparation phase of the project. This is one of the most interesting component of the construction project because it did not only require engineering skills but also the ability to manage thousands of workers and how to provide their needs while working in a remote location.

Keywords: dams, concrete structure, engineering

INTRODUCTION

Hoover Dam was a mammoth undertaking which was awarded to a consortium known as the Six Companies, Inc. The task given to the consortium was to build the biggest concrete structure ever created. There was no precedent and there was no manual or book that they can consult to help them anticipate and overcome every obstacle that appears on their way. But the contractors and engineers decided that it was worth risking as the United States just recently went through a severe economic depression in 1931, the year they started construction. It was welcome news for everyone especially those who wanted to work and receive decent wages.

The challenges were as huge as the project itself. Hoover Dam had to be constructed in a “desolate canyon where summer temperatures rarely dropped below 100 degrees, and the prospect of driving mammoth tunnels through four miles of granite ... to place the biggest dam in history in the path of the Colorado River...” (Wolf 4). Even a person without an engineering background can easily surmise that this project required the housing and mobilization of thousands of workers as well as the efficient transportation of materials miles away from the site.

PLANNING AND PREPARATION

Before any work could be done the consortium mentioned above had to secure the contract to work on multi-million dollar government project. Thus, they had to make meticulous calculations in order to win the bid for Hoover Dam. They had to know how long it would take to complete the project (it took seven years to finish this gigantic undertaking). Besides, they had to calculate the cost of the project, the materials and human resources needed to build Hoover Dam as well as a profit they wanted to make.

The researchers from the consortium had to conduct different studies to get

the idea about soils present here, the preparations needed to be done prior to moving people and materials to the place. The engineers had to build a scale model of the dam in order to know more about a material-handling approach (Wolf 6). The estimates had to be accurate. If wrong calculations resulted in the project overprice, they would not win the bid. If the price was too low, a financial catastrophe would definitely happen.

After securing the contract the company had to prepare the site and bring in construction materials, equipment, engineers, and thousands of workers needed for cleaning up the site and performing the tasks necessary for tunneling and highly specialized underground work (Wolf 5). One of the first things that had to be done was to build the facilities that would allow the housing and feeding of thousands of men. As a result, Boulder City was built for the families of the workers (Wolf 36). Surely the construction of the giant dam is not as simple as constructing an ordinary building.

The final preparation required the construction of a road that connected Boulder City and Black Canyon where the dam would be built. Apart from this, there was a need to create a railroad link for getting the materials and the equipment. And finally, the engineers had to intercept the river in the upstream portion so that the downstream would become a “dry gulch in which the work of building the dam would be done” (Wolf 37). All these things had to be completed before the serious work on the dam could be started.

SUMMARY

This book written by Donald Wolf is an important contribution to the science of building super-structures such as giant dams. It helps future engineers to understand the necessity of elaborate planning and the hard work needed in the planning and

preparation phase to ensure the success of the project. It is a testimony not only to the engineering skills required to build a mammoth concrete structure but also to the management skills needed to make sure that an efficient workforce is provided with all the things they must perform at an optimum level.

If a chief engineer, a superintendent or a foreman hadn't even bothered to create a mini-city for housing, feeding, and providing the daily needs of the workers and their families, these men would not have been able to concentrate on their work. If the leaders had not planned ahead and had not hired thousands of people, then there would not have been enough workforce to finish the job on time. If they had not made preparations and had not constructed roads and railroads, the materials would not have reached the construction site and the project would have been delayed costing the company millions of dollars in penalties as per a contract agreement.

The author of the book also casts light on the stage which goes before the bidding of a project. This stage includes site studies as well as the construction of scale models to provide a visual representation of the project to the customer and to be able to respond to challenges the company may face during the working process at the construction site.

CONCLUSION

Before taking this assignment I was not very familiar with the intricacies of building huge structures like giant dams. Although I assumed that hundreds or even thousands of workers were needed for a project as big as Hoover Dam, I had no idea that the contractors needed to construct so many things beforehand to succeed. It was surprising to find out that they even had to build a city to house and feed their workers and families. In addition, the logistical problem was so challenging because of the need to transport tons of materials and equipment from the city to the work

site. It was not only a test of engineering skills but of resource management skills as well.

Works Cited

Wolf, Donald. *Big Dams and Other Dreams: The Six Companies Story*. Norman:
University of Oklahoma Press, 1996.