MINDANAO STATE UNVIERSITY - GENERAL SANTOS DRAINAGE SYSTEM

A Special Problem Presented to
The Faculty of the Graduate Programs in Engineering
CENTRAL PHILIPPINE UNIVERSITY

In Partial Fulfillment
Of the Requirements for the Degree
MASTER OF ENGINEERING - CIVIL ENGINEERING

By

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January 25, 2001

Introduction

Structure is built with a specific purpose. So, it is paramount that a study or design should be made prior to the construction. The ultimate objective of design is to provide, in precise, concise, easy to comprehend form, all the information necessary for construction of the project. Traditionally, designers provide this information in drawing or plans that show what is to be constructed and in specifications that describe materials and equipment to be incorporated into the project.

All colleges and universities have one common objective. This is to provide " Quality Education", but Quality Education does not rely solely on classroom instructions but likewise to its environment. Therefore environmental problem must be given great attention in order to make university campuses conducive for learning.

Mindanao State University - General Santos City (MSU-GSC) is situated at Barangay Fatima, General Santos City. Its 150- hectare campus with uneven terrain is facing Sarangani Bay. Some of the campus roads are not concreted and drainage system does not exist. In this campus, this special problem entitled; "MSU-GSC Drainage System" will be implemented soon.

In Mindanao State University - General Santos City (MSU-GSC), surface runoff or flood is an ordinary scenario during heavy rains. Faculty and students find it hard to transfer from one building to another because of this. Consequently, some students are late in attending their next classes and others may even opt not to attend their classes. For this reason, the researcher finds that this special problem entitled "MSU-GSC Drainage System" is just right and fitting as a solution to the problem.

Statement of the Problem

Residential areas surrounding MSU-GSC campus have no drainage system. Specifically Barangay Fatima, which is situated at the eastern side of the campus and in much higher elevation. During heavy rains, the accumulated surface runoff from areas, which are in higher elevation moves towards the west following the contours which has lower elevation. Consequently, the route of this runoff passes through the campus and continues to go down in the western side, another residential area is much more affected because of this problem.

During rainy days, neighboring areas that are lower in elevation will be flooded. Flood obviously ruins roads, gardens and even some important infrastructures. It is even a threat to everyone's health because it carries bacteria that may cause sickness.

This problem has been existing for so long. For this reason, the researcher feels that this problem must be attended to immediately before it causes more damage not only in the campus but to its neighboring areas as well. The researcher came up with this design entitled "MSU-GSC Drainage System" in which seeks if not eradicate, curtails the effects of the surface runoff in this area.

Scope and Limitation

The study is limited to the 150- hectare campus of MSU-GSC. It focuses on the construction of a drainage system that will ultimately solve the flooding problem of the campus and provides an effective sewerage system. It considers only some of the

important aspects of the project. This includes the computation of the dimensions of the drainage canals and culverts. Its location, plans or drawings and some detail which are important during construction.

This study does not include the blue prints of the design and the estimates or the total cost of the project. Total cost refers to the labor and material expenses, which are included in the requirements of the local government for the release of the construction permit. Likewise, it does not include " PERT-CPM" or the schedule of activities, which is vital during the construction period.