

## **EXECUTIVE SUMMARY**

The following document is a thesis report that focuses on the in-depth study of the Warrenton Aquatic and Recreation Facility. The report is divided into four major sections: Project Overview, Construction Ethics Research, Fabric Duct Mechanical Breadth, and Structural Column Breadth.

The project overview portion of the paper is designed to give the reader an introduction to the projects systems and construction components. This portion of the project contains project systems descriptions, the project team summary, local conditions, site layout planning, and project estimate and schedule logistics.

The second portion of this report is designed to take a detailed look at the practice of ethics in the construction industry. The analysis highlights ethical problems within the industry, shows results from an ethical need survey, details the creation of the construction ethics program, and quantifies the results of using the program before making a final recommendation based on the collective research.

Fabric ductwork analysis is the subject of the first breadth. This section describes the different advantages of fabric duct compared to the prescribed double walled spiral aluminum ductwork that is currently in the Warrenton Aquatic and Recreation Facility. Also contained in this portion of the report is a cost analysis, schedule analysis, structural impacts analysis, and finally a conclusion based on the findings.

The last portion of the report is a detailed design and comparative analysis comparing the specified cast in place concrete columns, structural steel columns, and reinforced masonry pilasters. The comparisons consist of cost analysis, schedule analysis, and constructability analysis. A conclusion is then made based on the best possible structural column for the aquatic spaces of the building.