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Thesis Oral Presentation Overview

Sears Centre Oral Presentation Overview

Presentation Structure

- ❖ Preliminary Analysis- “Problem Statement”
- ❖ Industry/ Project Problem Identification
 - Critical Industry Research Methods*
 - Technical Analysis – “Breadth Studies”*
- ❖ Proposal Description

“DB/ DBO” + “FSM” = “DBOM”

Union Markets impact on Pre-cast Selection

FF&E Risk Construction Procedures – (1) Determining if there is a more cost effective and less time intensive placement method (2) Sizing equipment for maximum use at minimum cost

FF&E Load Truss Evaluation for Scoreboard and Audio upgrade
Implementation of “SIPS” for Suite Construction

Thesis Problem Statement

As Ryan Companies' premier plan prototype, the Sears Centre has adopted a delivery strategy which is atypical of previous arena developments. A composite of industry conditions, market forces and owner preferences form the guidelines for this solution. Ambiguity amongst construction professionals exist when exploring this project delivery method.

A selection tree needs to be generated documented (1) project constraints (2) schedule time frames (3) market forces (4) contract types and (5) the level of owner aggression driving the project – that best warrant the DBOM process.

Industry Problem Identification

Sports facilities, event venues and convention centers have been delivered using a wide variety of PDS (s). Emerging technologies have merged the newest PDS (s) “DB/DBO” w/ Facilities Management to create “DBOM”.

1. What are the benefits to using this PDS for large scale projects vs. previous methods?
2. Based on contractor's strategic plans and growth strategies, is this the most suitable method when considering various contract types?

Thesis Problem Statement

Much of the project complexity for the Sears Centre is contained in the various building systems used. Preliminary analyses have identified four key areas to either reduce cost, maintain value and or decrease coordination discrepancies.

❖ *Driving Forces: CCO Turnover/ Soft Opening Date*

Project Specific Problem Identification

Issue #1

The most notable system is the envelope/ cladding system. Envelope and cladding systems are composed of (3) types of metal panels and (2) types of concrete panels. Early evaluation has also identified overturning issues attributed to light building weights. A masonry panel assembly should be analyzed to provide a cost affective alternative to the (5) component envelope system, in effect adding necessary weight to the overall structure, counteracting overturning and uplift forces on the foundation.

Project Specific Problem Identification

Issue #2

Pre-cast concrete will be used on this project for critical members of the superstructure, i.e. bowl columns, beams and seating risers. After conversing with the Design-Build Entity it was determined that the force guiding this selection is the Chicago union market for concrete construction.

The basic evaluation will be focus on whether the overall cost for using union erectors and non-union manufacturers exceeds cost associated for union installation of cast-in-place concrete.

Project Specific Problem Identification

Issue #3

The FF&E Package is essential to the on time delivery of this facility. Specific attention ought to be given to efficient placement methods of the ice-distribution system and rink construction. It is important to determine when the ice-system consultant ought to be involved, especially since CIMCO is a non-domestic company headquartered in Ontario, CN. What is the typical procurement, and sequence for floor construction/implementation and system testing, how can this process be “trimmed”?

As a breath study the appropriate size to maximize distribution and minimize system cost has to be determined; what is the minimum size of equipment to maximize system efficiency. “Life-Cycle cost”

Project Specific Problem Identification

Issue #4

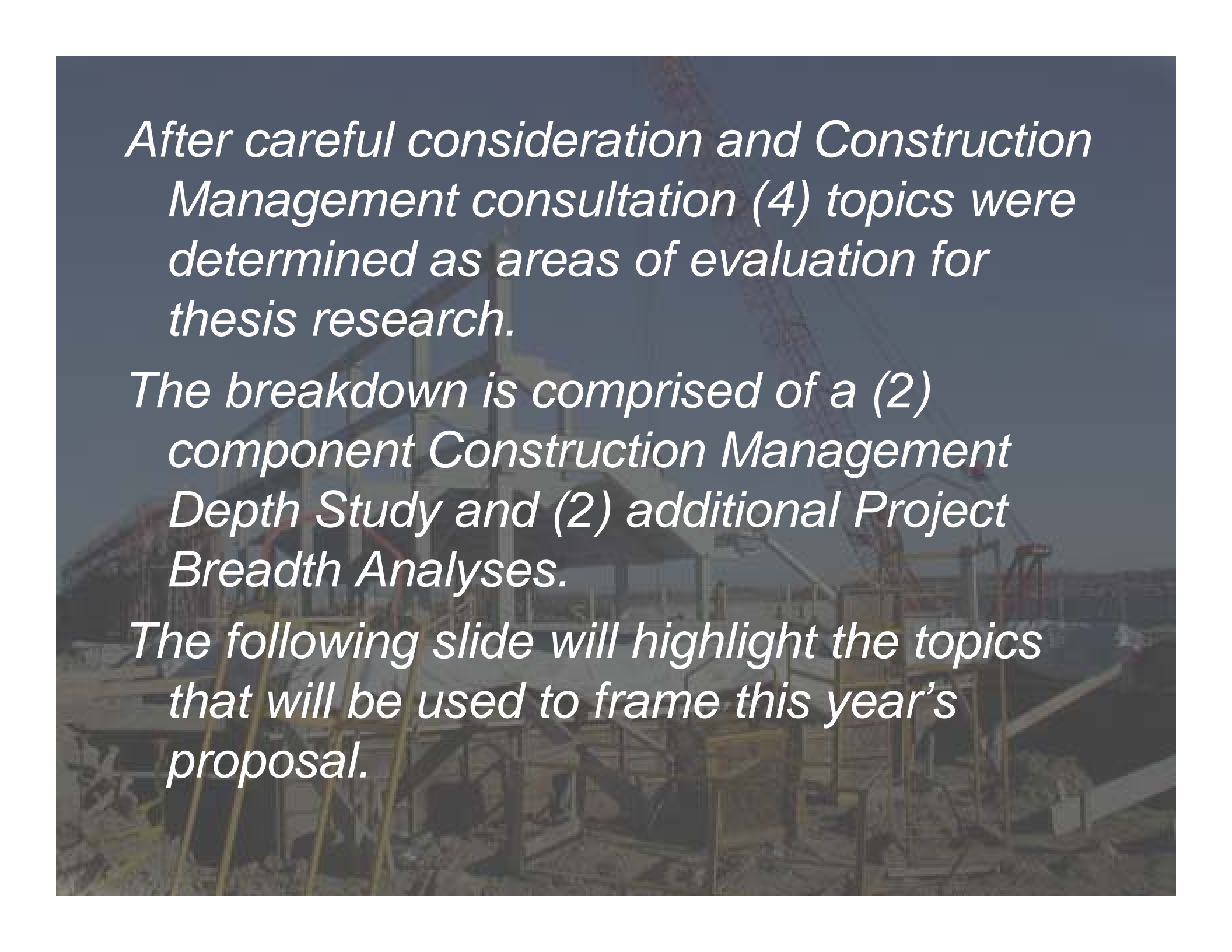
In keeping with Value Engineering and Constructability review, a feasibility analysis should be conducted documenting truss loading for future audio and video systems. Several sports arenas have installed new audio systems, LCD displays and truss suspended scoreboard clusters in an effort to draw large scale sports events. Although the Sears Centre is sized for 9,500 patrons this issue may be worth the evaluation since the long term goal of the facility is to house athletic tournaments.

Issue # 5

(42) Suites are contain in this facility, since size requirements are similar “SIPS” may be a viable option to schedule compression.

Permission to Evaluate the following for Thesis Proposal.

1. “DB/ DBO” + “FSM” = “DBOM”
2. Union Markets impact on Pre-cast Selection
3. FF&E Risk Construction Procedures – (1) Determining if there is a more cost effective and less time intensive placement method. (2) Evaluating equipment size for maximum use at minimum cost.
4. FF&E Load Truss Evaluation for Scoreboard and Audio upgrade
5. Implementation of “SIPS” for Suite Construction



After careful consideration and Construction Management consultation (4) topics were determined as areas of evaluation for thesis research.

The breakdown is comprised of a (2) component Construction Management Depth Study and (2) additional Project Breadth Analyses.

The following slide will highlight the topics that will be used to frame this year's proposal.

Thesis Topics

Construction Management Depth

1. “DBOM” as the preferred PDS for Arena Projects
2. Recapturing pre-cast manufacturing and procurement cost by using CIP concrete construction in the Chicago Area

Breath Analysis (1)

- ❖ Revising Building Enclosure system with pre-manufactured masonry assemblies

Breath Analysis (2)

- ❖ Analysis of Best Practices for Ice-Rink construction/ installation and maintenance