

## 2.7. *Critical Industry Issues*

The PACE Roundtable Meeting is an annual event in which industry members, students and faculty members join together to discuss leading issues plaguing the construction management industry. This year's theme is "Innovation and Leadership in Changing Construction Markets". Interactive sessions were held throughout the day focusing on topics such as Integrated Design Management I – The Role of the CM in Design, Integrated Design Management II – Constructability and VE in Design, and Leadership Jump-Start for Entry Level Employees.

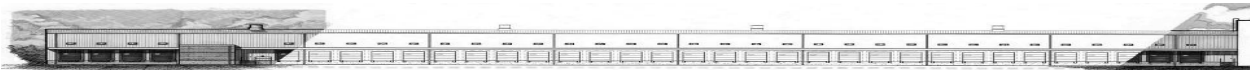
### 2.7.1. Integrated Design Management I – The Role of the CM in Design

#### ***BRIEF OVERVIEW***

One of the key motivators for construction managers as part of the design team is due to the reduced quality of construction drawings and specifications. There is a continuously declining trend to minimize Architect's design fees. Reducing the fee for architects causes a multitude of problems to occur such as reduced construction details and limited number of responses to RFI's. Many Construction Managers are finding themselves developing solutions to engineering problems and producing construction details which are to be utilized in the field. CM firms are finding themselves purchasing Errors & Omission Insurance on projects.

#### ***PROJECT APPLICATION***

The CM role on this project is a direct result from reduced design fees. FedEx is trying to save money by reducing Osborn's design fee, resulting in several hardships. The current construction drawings have been compiled from two similar projects developed by two different design firms. The integration of both sets of construction drawings were intended to develop a master set, which will be used to reproduce this building several times. One problem with the current drawing set is the over engineering of select systems. One of the projects was in Texas, where there is a large factor of safety for uplift of the building due to tornados and strong winds. Money was not allotted for Osborn to redesign the uplift component of the structural system resulting in an extremely over-engineered, which has increased construction costs due to additional labor and material.



Another problem that has occurred is the number of Requests for Information (RFI's) that will be answered. FedEx is simultaneously constructing two identical buildings in an effort to reduce architect's fees. The number of RFI's being asked has increased significantly due to the multitude of people looking at the construction drawings. Osborn has set a maximum number of RFI's that will be answered. As a result, many of the RFI's are being answered by the CM firm.

## 2.7.2. Integrated Design Management II – Constructability and VE in Design

### ***BRIEF OVERVIEW***

Value engineering (VE) and constructability are closely related on many projects. Constructability reviews are usually conducted after a set of drawings is released. Value engineering efforts are cost cutting ideas or reductions in scope. Value engineering is divided into two subcategories: cost savings and value added. Typically to add value to a project, select systems, typically mechanical or HVAC, are analyzed and Life Cycle Costs and Return on Investment costs are evaluated for alternate systems. Determining these costs will help owners and engineers choose systems, which will be both energy and cost efficient.

### ***RESPONSE***

The collegiate definition of value engineering is increasing the value of a system without increasing project costs. I was surprised to discover that owners and CMs analyze the construction drawings and specifications, trying to discover “low hanging fruit”. Low hanging fruit was described as something that was blatantly obvious such as cable tray specifications. Recently, a project manager saved an owner several thousand dollars on cable trays. The cable trays specified for a central telecommunications room was the same type and size as a single cable that needed to run over one thousand feet. Over three thousand feet of cable tray was reduced to accommodate the single strand of LAN cable resulting in cost savings of several thousand dollars per run. I was amazed to discover that architects and engineers are not developing systems that are the most efficient but systems that are the easiest to draw. Architects are supposed to act in the best interest of the owner.

### ***PROJECT APPLICATION***

Value engineering and cost savings are the responsibility of the owner, architect, construction managers, and sub-contractors. Ellsworth Electric, the electrical subcontractor on the project, continuously analyzes equipment and devices before installation for over engineering or over specification. Many architects are unaware of identical or comparable products. Ellsworth Electric is responsible for saving FedEx several thousand dollars.

Cost reduction alternatives have been developed and implemented by Gilbane. The continuously rising price of steel has been negatively affecting many projects. As a cost savings idea Gilbane suggested fiber reinforced concrete to be substituted for steel reinforced concrete. The availability of fiber reinforced concrete was a plausible alternative to steel reinforced concrete, which saved vital project time and reduced the overall project costs.

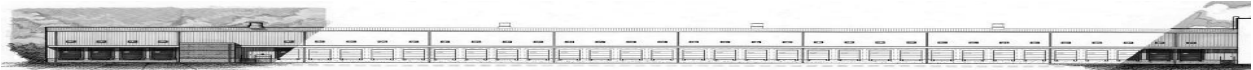
### 2.7.3. Leadership Jump-Start for Entry Level Employees

#### ***BRIEF OVERVIEW***

Leadership skills are essential for all entry level employees to succeed in an organization. To help students identify their strengths and weaknesses, several Penn State University professors developed online professional development training courses. These courses help students develop management and leadership skills beyond the typical classes offered through the Architectural Engineering program. The focus of this session was to help students identify leadership qualities and traits that are desired by construction management firms.

#### ***RESPONSE***

I was not surprised by the traits that are desired by construction management organizations. I served four years in the United States Air Force and participated in management training classes. Most people either know if they are able to lead a group or if they fit into the group as a follower. Some can make the transition from a follower to leader, but the best leaders are ones who have a natural aptitude for leadership. An industry member stated their best mason was given a promotion to a foreman position



and as a result they lost their best mason and gained their worst foreman. Many people do not want the extra responsibility or they are content as a laborer.

***PROJECT APPLICATION***

As an intern for Gilbane Building Company, I worked directly for the project manager. I was incorporated into the management team, working closely with the project engineer, superintendent, and office engineer. I was given as much responsibility as I was able to handle.