

AIRPORT TERMINAL EXPANSION - EASTERN UNITED STATES

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Structural

With a temporary elevated corridor running through the center of the site a congestion issue is presented. The first aspect of this breadth will be to attempt to relocate where the pedestrians can transit between terminals. After the pedestrians have been rerouted there is an opportunity to



completely demolish the existing building (concrete columns). With the absence of existing construction on site the congestion issue will be resolved. There will be a need to replace the existing concrete columns with the structural system of steel that is used in the remainder of the building. Through the installation of new steel, in place of the concrete columns, there will be a more predictable structure for the engineers to evaluate structural submittals. This, hopefully, will alleviate the issues that occurred in the project with cracks appearing in the existing concrete columns as the

building was loaded. Also, there was an issue of the baggage handling conveyers' hangers that exceeded the load bearing capacity of the existing steel. This issue possibly could have had a less expensive solution than what was decided upon, drilling through the existing concrete columns to install plates. Finally, there may be discovered that the project schedule would be overall reduced since the need for erecting and demolishing the three temporary corridors will not be necessary.

Mechanical / Architectural

With current energy situation in the United States the industry is attempting to utilize any efficient building techniques to conserve energy. This breadth will explore how a dual-façade could improve the current energy use by the existing HVAC system. The idea of a dual-façade has been around for years but has many been used in Europe, since the energy costs there have been much higher than the US for years. Also, this portion of the thesis presentation will look at the viability of photovoltaic cells being implemented and determine whether or not the impact is significant enough to support the cost of installation. Unfortunately, it may be concluded that the photovoltaic cells will not be sufficient enough to support the building, which then will lead into the architectural implementation similar to the GREENPIX Zero Energy Media Wall in Beijing China. The architectural aesthetics of the photovoltaic cells combined with LEDs will tell a story of the cities willingness to progress to a more sustainable future in building design.