

Unknown Data Center
Somewhere, USA
4.12.2011



Daniel Suter
Construction Management
AE Senior Thesis Presentation
The Pennsylvania State University

Project Overview

Analysis One: Alternate Roof Systems

- Electrical Breadth

Analysis Two: Façade Redesign

- Structural Breadth

Analysis Three: Tablet PC's

Conclusions

Questions

Project Overview

Analysis One: Alternate Roof Systems

- Electrical Breadth

Analysis Two: Façade Redesign

- Structural Breadth

Analysis Three: Tablet PC's

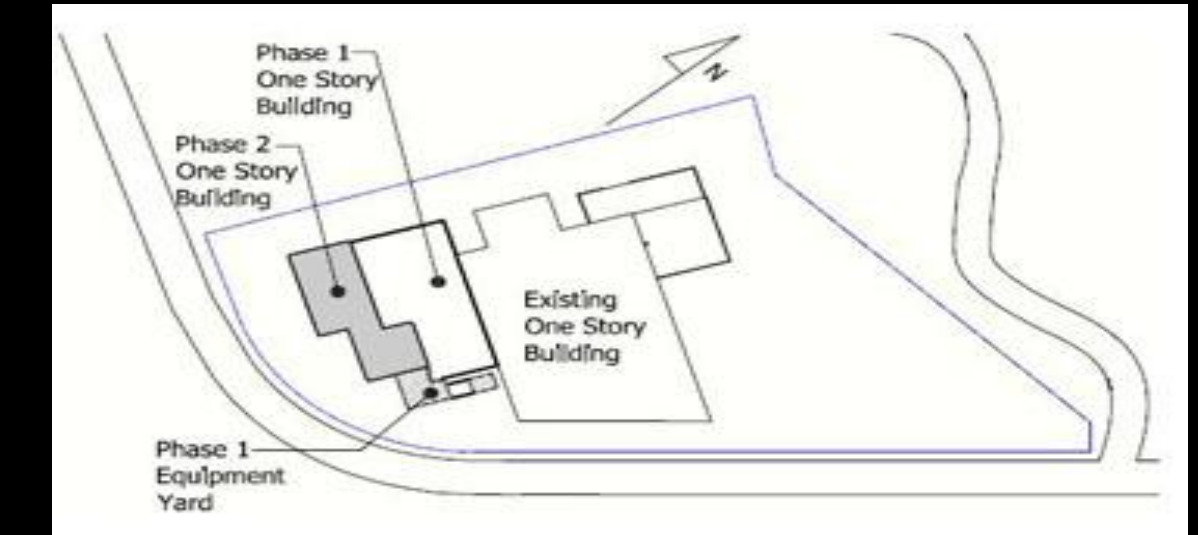
Conclusions

Questions

PROJECT OVERVIEW

- **Owner**
Anonymous
- **Occupancy Type**
Business
- **Size**
17,445 SF
- **Cost**
\$ 50 Million (Design+Construction)
- **Construction Duration**
December 2008 – August 2010
- **Delivery Method**
Design-Bid-Build

Unknown Data Center
Somewhere, USA



Project Overview

Analysis One: Alternate Roof Systems

- Electrical Breadth

Analysis Two: Façade Redesign

- Structural Breadth

Analysis Three: Tablet PC's

Conclusions

Questions

ANALYSIS ONE – Alternate Roof System

○ Opportunity

The Data Center's roof construction primarily constructed with EPDM fully adhered to concrete slab on deck. On top of the EPDM is interlocking insulation board covered with UV protection fabric and is topped off with interlocking concrete pavers. This type of roof was selected for sound isolation purposes. The primary problem is that the owner is not utilizing the opportunity to implement green/solar roofing systems to increase to performance of his/hers building. In addition, the current roof constructed includes various amounts of materials and two different

○ Objective

The expected outcomes from this analysis will conclude that a PV panel roofing system will be more beneficial to the owner because of the type of building it is. The effects on duration and cost will be affected in a negative way, but the life cost cycle will make up for the longer duration and cost to the owner

Unknown Data Center
Somewhere, USA



Project Overview

Analysis One: Alternate Roof Systems

- Electrical Breadth

Analysis Two: Façade Redesign

- **Structural Breadth**

Analysis Three: Tablet PC's

Conclusions

Questions

Structural Breadth

- **Overview:**

In attempt to redesign the current architectural precast panels. This analysis will include redesigning the 20 foot parapet walls, while collaborating with the architect. Different size beams and columns may arise through the structural calculations that will be performed.

3D Model Insert