

PRESENTATION OUTLINE

1. Introduction
 - a. Presentation Outline (1)
 - b. Building Statistics (1)
 - c. Existing Structure (3)
 - d. Redesign (1)
2. Base Steel Redesign
 - a. Layout (2)
 - b. ETABS Model (2)
 - c. Results (2)
3. Progressive Collapse (1)
 - a. References and Level of Protection (1)
 - b. Tie Force Method (3)
 - c. Alternative Path Method
 - i. Purpose/ References (1)
 - ii. Procedure (4)
 - iii. Removal of Column F5 (5)
 - iv. Removal of Column A.8-2.4 (3)
 - v. Non-Linear Analysis (2)
 - d. Enhanced Local Resistance (3)
 - e. Atrium Façade Analysis (3)
4. Architecture Breadth (3)
5. Construction Management Breadth (2)
6. Conclusion (2)

Total Number of Slides: 45



Brian Rose

AE Senior Thesis Presentation
General Office Building



Introduction

Headquarters Expansion
Greater Washington D.C. Area
Office, Retail, Daycare

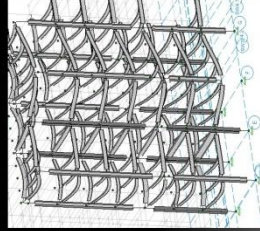


Presentation Outline

- **Introduction**
Base Steel Redesign
Progressive Collapse
Tie Force
Alternative Path
Enhanced Local Resistance
Architectural Breadth
Conclusions

Alternative Path Columns

Removal of Column F5 at 1st Story



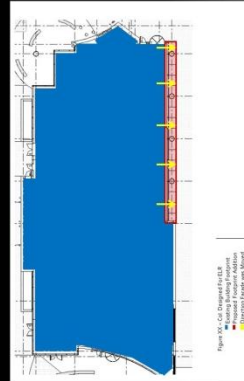
Existing Column Results					
Location	Size	$P_u/\phi P_n$	$M_u/\phi M_n$	m-factor	Interaction
Exterior Moment Column	W14x113	1.54	0.55	Force Controlled: 1.0	2.03
Interior Gravity Column	W14x120	2.10	0.00	Force Controlled: 1.0	2.10

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- Tie Force
- Alternative Path
- Enhanced Local Resistance
- Architectural Breadth
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Alternative Path

Existing Ground-Level Plan



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Existing Exterior Atrium View

