

Samantha deVries  
11141 Georgia Avenue  
Structural Option  
Advisor: Dr. Boothby

Presentation Outline:

1. Building Introduction (7 slides for section)
  - a. Building Description, site and statistics (2)
    - i. General Information
    - ii. Site and Location
  - b. Existing Gravity System (3)
    - i. Foundations
    - ii. Concrete portion
    - iii. Steel addition
  - c. Existing Lateral System (2)
    - i. Concrete portion
    - ii. Steel Addition
2. Problem Statement (2 slides for section)
  - a. Discuss Lightweight addition and building reuse (1)
  - b. Use of wood in taller buildings (1)
3. Introduction to Heavy Timber in Taller Buildings (6 slides for section)
  - a. Cross Laminated Timber (2)
    - i. Introduce
    - ii. Pros and Cons
  - b. Environmental Impact (1)
  - c. Fire-Safety (2)
    - i. Fire resistance
    - ii. Code discussion
    - iii. Topics requiring further research
  - d. Additional Considerations (1)
    - i. (Just list these quickly to acknowledge)
4. Proposed Solution (3 slides for section)
  - a. Proposed Gravity System (1)
  - b. Proposed Lateral System (1)
  - c. Encapsulation Method (1)
5. Gravity Redesign (6 slides for section)
  - a. CLT Floor Panel Design (2)
    - i. Strength Design
    - ii. Deflections Design
    - iii. Fire Performance Design Approach
  - b. Glulam Girder Design (2)
    - i. Strength and Deflections

- ii. Fire Performance
  - c. Glulam Column Design (2)
    - i. Strength, Deflections, Fire Performance similar to other elements
  - d. Comparison to Existing System (1)
- 6. Lateral redesign (5 slides for section)
  - a. Lateral redesign intro (1)
  - b. Lateral System Behavior (3)
    - i. Semi-Rigid Diaphragm assumption
    - ii. modeling assumptions and behavior
    - iii. Drift and in-place deflection discussion
  - c. Shear wall design (1)
  - d. Comparison to Existing System (1)
- 7. Breadth Introduction (4 slides for section)
  - a. Introduce (1)
    - i. Briefly mention mechanical (will not be discussed in detail)  
Introduce CM
  - b. CM breadth (2)
    - i. Schedule Analysis
    - ii. Cost Analysis
  - c. Comparison to existing system (1)
- 8. Conclusion (1)
- 9. Acknowledgements (1)
- 10. Appendix (may include slides of sample calcs)