1. Introduction (1 slide)
2. Project Introduction (1 slide)
    a. Project Team
        i. Contractors, Owner, Architects
    b. Building Location, Cost, Scope
3. Presentation Outline (1 slide)
4. Analysis 1: Driving Collaboration with Lean Construction (6 slides)
    a. Collocation
        i. What is it?
        ii. How it can be used on 900 16th Street
            1. Site Plans and possible locations
        iii. How it is beneficial?
    b. Last Planner
        i. What is it?
            1. What are the steps
        ii. What should and should not be used on 900 16th Street
5. Analysis 2: Exterior Façade Redesign (7 Slides)
    a. Existing Conditions
    b. Proposed Alternative System
        i. Definition of system composition
        ii. Transportation to site
    c. Schedule Analysis
    d. Cost Analysis
6. Structural Breadth (3 slides)
    a. Comparison of average weight of panels
    b. Calculations showing structural system adequacy
7. Mechanical Breadth (3 slides)
    a. Definition of spaces used for analysis
    b. Comparison of façade system R-values and system performance
8. Analysis 3: VE of Prismatic Curtainwall Glazing Units (5 slides)
    a. Explain the curtainwall system in detail and the risks associated with procuring material from current manufacturer
    b. Introduce the proposed alternative manufacturer
        i. Comparison of the two methods
    c. Cost Analysis
        i. Initial costs followed by the costs associated to fix issues
    d. Schedule Analysis
9. Recommendations (1 slide)
10. Final Remarks (1 slide)

900 16th Street NW

Washington, DC

Final Presentation
AE Senior Thesis 2016

Douglas Watson
Construction Management
Advisor – Rob Leicht

Analysis Background

Problem

Erection of precast façade system is time consuming

Proposed Solution

Implementation of an alternative façade system

Goals

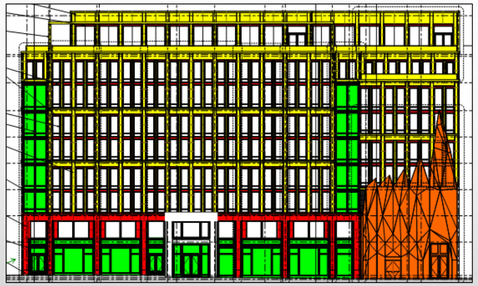
Reduction in the installation duration

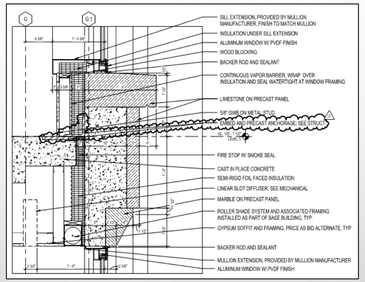
Reduction of exterior façade system costs

Increase ease of installation

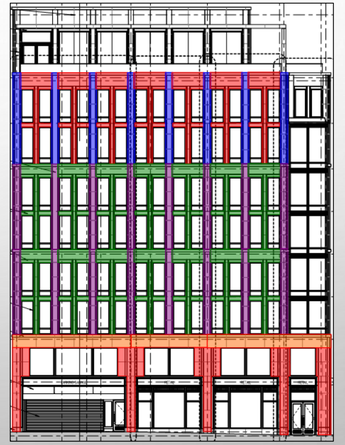
Improved thermal performance of exterior wall system

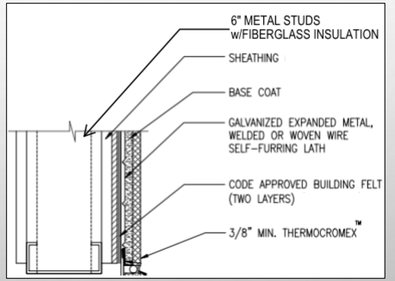
Existing Facade





Alternative Facade



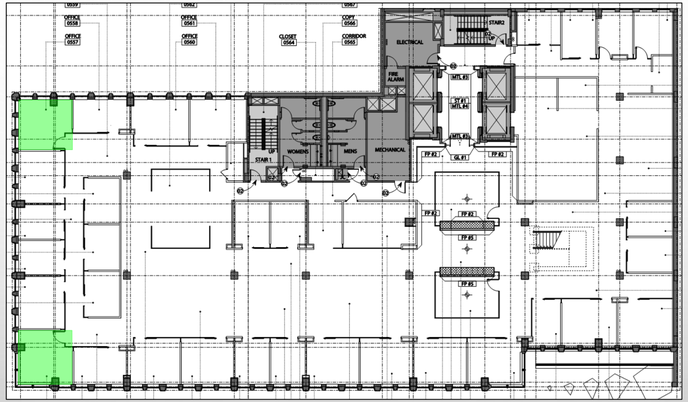


Analysis Description

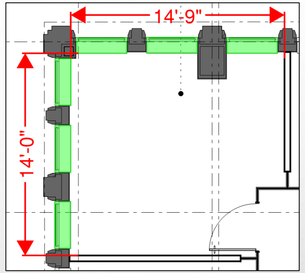
Issue Changing the façade of the building could change the mechanical loads

Goals Determine if the current mechanical system performs adequately with the alternative façade

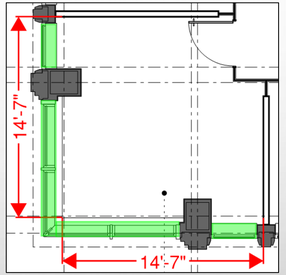
Level 5 Floor Plan



Office 0557



Office 0546



Room Characteristics

Space	*Exterior Wall*	*Length*	*Height*	*SF of Wall*	*% Window Coverage*
Office 0557	West	14'-9"	11'-2 1/2"	165 SF	50%
	South	14'-0"	11'-2 1/2"	157 SF	50%
Office 0546	South	14'-7"	11'-2 1/2"	164 SF	68%
	East	14'-7"	11'-2 1/2"	164 SF	68%

Analysis Background

Problem — Manufacturer Location created extended turn around time on material

Proposed Solution — Locate Manufacturer of prismatic curtainwall glazing units within the United States

Goals — Reduction of material procurement duration

Reduction in cost of prismatic curtainwall system

Cost Analysis

Initial Base Costs

Manufacturer	*Delivery Method*	*Cost of Delivery*	*# of Shippments*	*Total Delivery Costs*	*Cost of Material & Labor*	*Total Cost*
Original	Sea Freight	$ 12,000.00	3	$ 36,000.00	$ 282,295.00	$ 318,295.00
Alternative	Truck	$ 19,577.58	3	$ 19,577.58	$ 326,293.00	$345,870.58

Costs Associated with Impacts

Manufacturer	Delays		
	Design/Fab	*Broken Glazing Units*	*Improper Fabrication*
Original	$ 276,000.00	$ 58,125.00	$ 119,865.00
Alternative	$ 13,000.00	$ 49,603.00	$ 125,257.00
Difference	$(263,000.00)	$ (8,522.00)	$ 5,392.00