Scott Hall in the Mall
Scott Hall from Junction Hollow
Section: Scott Hall at the Mall
Scott Hall Site Plan
The Mall View: Existing
The Mall View: Proposed
View to Hamerschlag: Existing
View to Hamerschlag: Proposed
View from Hamerschlag: Existing
View from Hamerschlag: Proposed
View at Wean Entry: Existing
View at Wean Entry: Proposed
Courtyard View: Existing
The Arthur C. Ruge Atrium
The Porter Arch: Existing
The Porter Arch: Existing
The Porter Arch: Proposed
Scott Hall Elevation Precedents: Hamerschlag Hall
Scott Hall Elevation Precedents: Hamerschlag Hall Analysis
Scott Hall Elevation Precedents: Baker and Porter Halls
Scott Hall Elevation Precedents: Baker and Porter Halls Analysis
Scott Hall Elevation Precedents: Baker and Porter Halls Details

Shear

Polychrome
Scott Hall North Wing: Unfolded Elevation
Scott Hall North Wing: Unfolded Elevation Program
Scott Hall North Wing: Unfolded Elevation Design
Scott Hall South Elevation: Dichroic Sun Shades
Dichroic Glass

Carnegie Mellon University Nano-Bio-Energy Technologies Building
Scott Hall: Connectivity to Wean Hall

Level 8
Level 7
Level 6
Level 5
Level 4
Level 3

Wean Hall
Scott Hall from Forbes Avenue: Dichroic Sun Shades
Ceramic Frit Examples

Carnegie Mellon University Nano-Bio-Energy Technologies Building

Office Building, London, UK
Alsop Architects

Lab Building, New Haven, CT.
Behnisch Architects
Hamerschlag Hall Details: Ceramic Frit on Glazing

60% Coverage

40% Coverage

25% Coverage

Partial Window View
Why are Labs so Energy Intensive?

- 100% Outside Air
- Minimum Air Change Rates
- 24/7 Operation
- Fume Hoods
- Large Equipment Heat Loads
- Cleanliness and Environmental Stability
What are we doing about it?

Key Concepts

- Minimize air flow through the building without compromising internal or external safety
- Maximize energy recovery from the exhaust air without internal or external safety
- Use low pressure drop (friction) systems for moving air
- Carefully select all system components for system operation at maximum efficiency
Special Measures for Cleanrooms

40% filter coverage, 500 fpm face velocity
• 100% filter coverage, 350 fpm face velocity

Prefilters on Recirculation Air Handlers
• No prefilters on Recirculation Air Handlers (due to higher filter coverage)

24/7/365 Air Handlers operation
• Recirculation Air Handlers turn down to 50% using timeclock and occupancy sensors

150 cfm/LF constant volume wetdeck exhaust
• 125 cfm/LF wetdeck exhaust, with turn down to 50 cfm/LF

500 fpm face velocity of make-up air unit
• 350 fpm face velocity of make-up air unit
Non-Laboratory & Public Spaces

- Water-based cooling using chilled beams
- Variable air volumes
- Demand controlled ventilation
- Heat recovery / air cascade
- Lighting / Daylighting control
- Chilled water cascade
- Hydronic perimeter heating
CONSTRUCTION PHASING
Site Layout Phase 1
Retaining Wall and Mass Excavation

- Fourth Quarter 2012
- Roberts Drive coordinated and maintained
- Parking at FMS Storage Lot restricted
- Access to Roberts loading dock maintained

Access to Roberts Hall loading dock maintained
Lower lot graded and utilized for equipment and laydown
Access to Roberts Drive maintained
Temporary closures during drilling progress
Site Layout Phase 3
Courtyard and North Wing Structure Core/Shell and Fitout

- Third Quarter 2013 - Through Completion Mid 2015
- Start structure erection
- Limited access to Roberts Drive
- Limited access to Roberts loading dock
- Office trailers located in Porter Lot
- Material storage located across train tracks
- Hamerschlag Bridge, Wean, and Porter entrances maintained
- Crane situated on site

Main Construction Site Access
Limited access to Roberts Drive during construction
Fenced and gated material prep and storage area
Limited access to Roberts Hall loading dock
Construction trailers

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Site Layout Phase 2
North Wing Foundations and Utilities

- First & Second Quarter 2013
- Start Heavy Foundation and Utility work
- Roberts Drive maintained
- Limited access to Roberts loading dock
- Trailers and material storage space located across train tracks

Main Site Construction Access

Construction trailers

Access to Roberts Drive maintained

Limited access to Roberts Hall loading dock

Fenced and gated material prep and storage area

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Site Layout Phase 4 - Site and Mall Work

- First Quarter 2015 - Through Second Quarter 2015
- Courtyard Landscaping
- Rework of Wean Courtyard
- Final Grade and Planting of North Wing Slope
- Site walks and paving
- Demobilization of trailers and lower railroad lot

- Demobilization of lower lot laydown area
- Final Grad and Planting of North Wing Slope
- Courtyard Landscaping and rework of Wean Courtyard
- Demobilization of trailers

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THE END