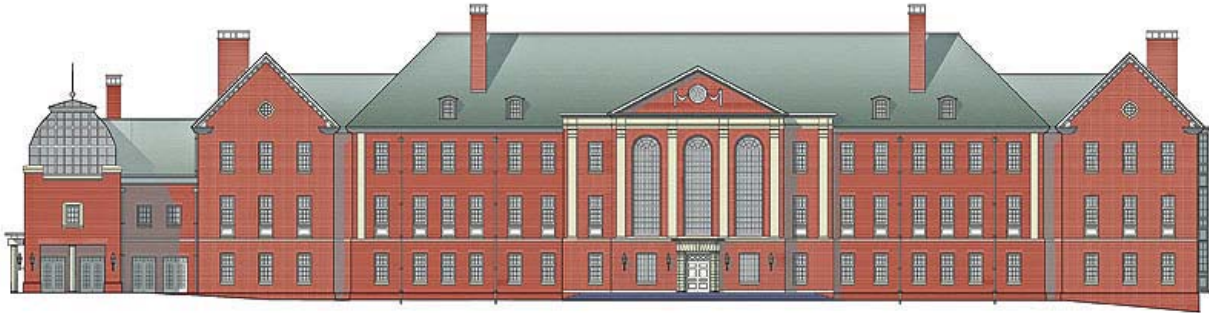


Integration of DOAS and Make-Up Air Systems in a Multiple-Use Facility



Ann & Richard Barshinger Life Science & Philosophy Building
Franklin & Marshall College
Lancaster, PA

Brian Ault
The Pennsylvania State University
Architectural Engineering
Mechanical Option

Faculty Advisor:
Dr. William Bahnfleth

April 9, 2008

Ann & Richard Barshinger Life Science & Philosophy Building

Franklin & Marshall College, Lancaster, Pennsylvania

Architect: Einhorn Yaffee Prescott
GC / CM: Turner Construction



ARCHITECTURE / GENERAL

- 104,000 SF LABORATORY / INSTRUCTION FACILITY
- CONSTRUCTION: DECEMBER 2005 – AUGUST 2007
- OCCUPIED BY THREE COLLEGE DEPARTMENTS, TWO PREMIER PROGRAM AREAS
- BRICK FACADE TO MATCH OLDER STYLES ON CAMPUS
- 120-SEAT LECTURE HALL AND ATRIUM USED FOR COLLEGE & COMMUNITY EVENTS
- SOUTH ROOF GREENHOUSE, BASEMENT OBSERVATION VIVARIUM
- VERMONT SLATE ROOF
- NUMEROUS STUDENT LOUNGE SPACES



MECHANICAL

- (2) 50,000 CFM AHUS ON ROOF, (1) 15,000 CFM AHU IN BASEMENT
- (2) 25,000 CFM AND (1) 15,000 CFM EXHAUST FANS ON ROOF
- GLYCOL ENERGY RECOVERY LOOP BETWEEN EXHAUST AND MAKE-UP AIR
- 550 TON CENTRIFUGAL CHILLER IN CENTRAL UTILITIES BUILDING
- COOLING TOWER ON ROOF, ROOM FOR EXPANSION
- MP STEAM FED FROM CENTRAL CAMPUS SERVICES (4880MBH HTX)
- LP STEAM SUMMER BOILER ON ROOF (3392 MBH)

CONSTRUCTION

- DESIGN – BID – BUILD PROJECT
- \$39M GMP CONTRACT
- EXTENSIVE ROCK EXCAVATION
- ONGOING CAMPUS SERVICES RENOVATIONS



STRUCTURAL

- STEEL BRACED FRAME STRUCTURE
- CONCRETE SLABS ON COMPOSITE METAL DECK
- 8" CMU EXTERIOR BACKUP WALLS
- BRICK EXTERIOR FACADE
- PRE-CAST CONCRETE PANELS (DECORATIVE)
- LIMESTONE LINTELS & CAPSTONE

ELECTRICAL / LIGHTING

- 15KV, 3 PHASE DELTA BUILDING POWER FEED
- 1300 KVA TRANSFORMER (15KV – 480/277Y)
- 350KW 480/277Y STANDBY DIESEL GENERATOR
- 277V T-8 LINEAR FLUORESCENT LIGHTING
- 120V INCANDESCENT ACCENT LIGHTING

Table of Contents

Acknowledgements	iii
1.0 – Executive Summary	1
2.0 – Background	2
3.0 – Existing Conditions	3
3.1 – Architecture	3
3.2 – Historical Requirements	3
3.3 – Building Envelope	3
3.4 – Construction	4
3.5 – Electrical	4
3.6 – Lighting	4
3.7 – Structural	5
3.8 – Supporting Systems	5
3.8.1 – Fire Protection	5
3.8.2 – Transportation	5
3.8.3 – Telecommunications	5
4.0 – Existing Conditions – Mechanical Systems	6
4.1 – System Location and Space Allocation	6
4.2 – Controls	6
4.3 – Central Plant	7
4.4 – Air Systems	7
5.0 – ASHRAE Standards Analysis	9
5.1 – ASHRAE 62.1-2007	9
5.2 – ASHRAE 90.1-2004	10
6.0 – Mechanical System Redesign – Depth Study	11
6.1 - Air-Side System and Operation	11
6.2 – Envelope Alterations	14
6.3 – Internal Loads	15
6.4 – Central Plant	15
6.5 – Energy Storage	17
6.6 – Energy Recovery	18
6.7 – Economic Impact	19
6.8 – Mechanical Breadth Conclusions	22

7.0 – Electrical System – Breadth 1	.	.	.	.	.	.	.	.	23
8.0 – Structural Loads – Breadth 2	.	.	.	.	.	.	.	.	26
9.0 – Conclusions & Recommendations	.	.	.	.	.	.	.	.	28
10.0 – References	29
11.0 – Appendix A – Electrical Breadth	30
12.0 – Appendix B – WLHP Data.	35

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