BREADTH TOPICS

When implemented, any mechanical system redesign will consequently alter other buildings systems. After feedback from advisors, the following acoustical and construction management breadths will be analyzed during the 2009 Spring Semester. If for any reasons problems arise with obtaining information regarding the current acoustical levels, an architectural breadth will be performed instead.

1. ACOUSTICAL BREADTH

The driving decision to switch from fan coil units to chilled beams was the reduction in acoustical interference in the space. The acoustical performance of the chilled beams in the offices and discussion classrooms will be analyzed to make sure they meet standardized noise criteria for the activities that will take place. By reducing the distracting vibrations and rattling that occurred with the fan coil units, the overall productivity of the students and tenants will increase. During this analysis, and attempt to obtain information regarding the current acoustical conditions will be made, and comparison calculations between the fan coil units and chilled beams will be performed.

2. CONSTRUCTION MANAGEMENT BREADTH

One of the most appealing qualities about chilled beams is the ability to bring together several services in an integrated unit. A full range of building services (apart from heating, ventilating and air conditioning), can be incorporated into the beam. These include uplighting or downlighting, fully addressable lighting solutions and fire alarms and sprinkler heads. By integrating fire protection and/or lighting features into the beam, a reduction in costs and on-site installation time is almost assured. The breadth would explore the potential savings on the construction costs and installation schedule.

ARCHITECTURAL BREADTH

By installing the supplemental radiant flooring the in lobby/atrium space, the initial construction cost for the mechanical system will definitely increase. Although the system, in congruence with the displacement ventilation, will enhance the thermal comfort of the occupants, it might be possible to reduce the amount of heat gain/loss in the space. This will be done through altercations of the glass curtain wall system that runs the entire length of the space. If these changes to the façade are made, elevation drawings will be updated to show how the aesthetics of the building were altered. Enhancing the thermal properties of the glazing, adding additional shading devices or changing a certain percentage of the wall to a different material are all viable options to help decrease the loads. As a result, the air handling unit can reduce in size, and the extra boiler capacity needed to heat the radiant flooring will be minimized.

JANUARY '09

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
				1	2	3
					OBTAIN COST AND SCHEDULE INFORMATION FROM LANDAU OVER BREAK	
4	5	6	7	8	9	10
11	12	13	14	15	16	17
	CL ASSES RESUME	Researched chill beams, displacement ventilation and radiant flooring	Researched chill beams, displacement ventilation and radiant flooring	Contacted Trox and and Halton about active chilled beam modeling programs	Conduct research on how to model chilled beams and radiant flooring in TRACE.	Conduct research on how to effectively model the change in diffuser location for lobby
18	19	20	21	22	23	24
Continue researching modeling techniques for new energy analysis	**NO CLASS**	CREATE NEW TRACE FILES for chilled beams, DV & radiant floor combonation	CREATE NEW TRACE FILES for chilled beams, DV & radiant floor combonation	CREATE NEW TRACE FILES for chilled beams, DV & radiant floor combonation	CREATE NEW TRACE FILES for chilled beams, DV & radiant floor combonation	
25	26	27	28	29	30	31
ORGANIZE load data and energy consumption	**(ASHRAE TRIP) MILESTONE #1- Complete new energy model**	**ASHRAE TRIP**	**ASHRAE TRIP**	ORGANIZE load data and energy consumption	Begin Equipment Selection	

FEBRUARY '09

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Equipment Selection	Equipment Selection	Equipment Selection	Equipment Layout and design	Equipment Layout and design	Equipment Layout and design	
8	9	10	11	12	13	14
Equipment Layout and design	**MILESTONE #2- Complete equpiment selection and layout**	Cost Analysis	Cost Analysis	Cost Analysis	Cost Analysis	
15	16	17	18	19	20	21
Compare results, including energy consumption, operating costs and construction costs	Compare results, including energy consumption, operating costs and construction costs	Recalculate LEED points according to Version 2.2	Recalculate LEED points according to Version 2.2	Recalculate LEED points according to Version 2.2	Begin research on acoustical breadth **THON**	**THON**
22	23	24	25	26	27	28
Research acoustical breadth components **THON**	**MILESTONE #3- Complete cost analysis and LEED recalculation**	Obtain information on acoustical performance of chilled beams	Perform any modeling to do with acoustic breadth	Perform any modeling to do with acoustic breadth	Modeling Analysis	

MARCH '09

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1	2	3	4	5	6	7
Modeling analysis	Compare FCU performance to chilled beams	Begin research on CM breadth	Work on CM breadth	Work on CM breadth	SPRING BREAK IN CABO	SPRING BREAK
8	9	10	11	12	13	14
SPRING BREAK	SPRING BREAK	SPRING BREAK	SPRING BREAK	SPRING BREAK	SPRING BREAK	SPRING BREAK
15	16	17	18	19	20	21
SPRING BREAK	**MILESTONE #4- Complete first thesis breadth; have started second**	Work on CM breadth	Work on CM breadth	Finalize CM breadth	Finalize CM breadth	Start compiling information needed for final report
22	23	24	25	26	27	28
Compile information	Compile Information	Organize Final Report	Organize Final Report	Organize Final Report	Begin written work on Final Report	Work on final report
29	30	31				
Work on final report	Work on final report	Work on final report				

APRIL '09

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
			1	2	3	4
			Work on final report	Work on final report	Proofread report, begin Powerpoint presentation	Proofread report, Powerpoint presentation
5	6	7	8	9	10	11
Proofread report, Power point presentation	Powerpoint presentation	Powerpoint presentation	**FINAL REPORTS DUE-5PM**	Practice Presentation	Practice Presentation	Practice presentation
12	13	14	15	16	17	18
Practice Presentation	**FACULTY JURY PRESENTATIONS**	**FACULTY JURY PRESENTATIONS**	**FACULTY JURY PRESENTATIONS**	**FACULTY JURY PRESENTATIONS**	**FACULTY JURY PRESENTATIONS**	
19	20	21	22	23	24	25
26	27	28	29	30		