The Ohio State University
Knowlton School of Architecture
Architecture 626
Building Construction I

AU 2008
Professor Michael Cadwell
GA's: Neal Clements, Arienne Longstreth,
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COURSE DESCRIPTION

Architecture 626 provides students with a working knowledge of the technical and cultural implications of wood construction. The recurrent theme of Architecture 626 is ecological, an understanding of the physical environment as the dynamic of interdependent systems, natural and manmade, intrinsic and extrinsic to their sites. This ecological understanding of the physical environment marks a fundamental shift from the industrial, utilitarian understanding that preceded and, to a large degree, precipitated it. Building construction directly reflects this new understanding of the physical environment, because it is the most common means by which we reconfigure that environment. Architecture 626 instills within the student an understanding that even the most prosaic construction, the single-family house, has implications that ripple from the details of the wood light frame, to the planning of suburbia, to the harvesting of natural resources, to the dynamics of global climates.

Lectures follow but are not restricted to Fundamentals of Building Construction, Materials, and Methods by Edward Allen (fourth edition, available at SBX.) Allen's text is supplemented by readings that underscore an ecological understanding of construction (see attached schedule). While Allen's text outlines a broad palette of materials and methods, weekly readings and lectures underscore their cultural implications.

Lab exercises supplement readings and lectures. There are three types of labs. In the first, students gain a hands-on understanding of ecological construction principles. In the second, students draw details of historic and contemporary architecture that articulate these principles. In the third, students apply principles and precedents to small-scale building designs. Thus, Architecture 626 links direct experience, established practices, and student invention to a profound ecological understanding of building technology.

GENERAL POLICIES

All Architecture 626 documents can be found on Carmen. The Carmen site provides the course syllabus, lab descriptions, review outlines, lecture PowerPoints, and examples of student work. To save resources, hard copies of course material are not provided.

All grades are based on uniform criteria established by Professor Cadwell and computed as follows:

$$\text{Final Grade} = \frac{\text{lab average} + \text{exam average}}{2} +/- \text{class participation}$$

Note a final grade can vary up to six points depending upon class participation. Over the quarter, each student will be called upon during lectures as many as three times. A student who answers correctly gains one point, a student who answers incorrectly gains no points, and an absent student looses one point. The studio section with the highest combined total will be rewarded in a substantial (though, as yet, undisclosed) fashion.

Final grades are converted to letter grades as follows:

A	100.0 - 92.8	C+	79.4 - 76.2	E	< 59.5
A-	92.7 - 89.5	C	76.1 - 72.8		
		C-	72.7 - 69.5		
B+	89.4 - 86.2				
B	86.1 - 82.8	D+	69.4 - 66.2		
B-	82.7 - 79.5	D	66.1 - 59.5		

No credit will be given for assignments submitted late or for unexcused absences from labs and exams. Extensions and make-up exams are granted only by Professor Cadwell, only in the case of serious illness or family death, and only after written documentation has been provided (i.e., doctor's letter or newspaper obituary.) *Unless it is a life or death situation, get the work done.*

Professor Cadwell's email address is cadwell.1@osu.edu and his office telephone number is 292-3174. Office hours are 2:30 – 3: 30 PM on Tuesdays and Thursdays in 277 Knowlton Hall.

COURSE SCHEDULE AND ASSIGNMENTS

date	lecture/lab	reading	lab intro
Week 1			
1. Th, Sept 20	1. Introduction to Ecological Construction		Lab #1
Week 2			
2. Tu, Sept 25	2. Site: Vernacular to Industrial	Allen, Chapter 1	
3.	Lab #1, "Ecology of OSU Wetlands"		
4. Th, Sept 27	3. Site: Industrial to Ecological	McKibben, *The End of Nature*	Lab #2
Week 3			
5. Tu, Oct 2	4. Site Ecologies	Allen, Chapter 2 (19-27,38-42,55-69)	
6.	Lab #2, "Construction I: Forest to Timber"		
7. Th, Oct 4	5. Building Ecologies	Cronon, *Changes in the Land*	Lab #3
Week 4			
8. Tu, Oct 9	6. Building on the Earth	Burns & Kahn, *Site Matters*	
9.	Lab #3, "Case Study I: Timber Detail"		
10. Th, Oct 11	7. Wood Fundamentals: Cell to Arch	Allen, Chapter 3	Lab #4
Week 5			
11. Tu, Oct 16	8. Wood: Reconfigured Resource	Allen, Chapter 4	
	Lab #4, "Case Study II: Timber Construction"		
12. Th, Oct 18	9. Timber: Vernacular to Contemporary	Harrison, *Forest: The Shadow of Civilization*	
Week 6			
13. Tu, Oct 23	10. Wood Light Frame Evolution	Allen, Chapter 5 (145-168)	Lab #5
	no lab		
15. Th, Oct 25	**Midterm**		
Week 7			
16. Tu, Oct 30	11. Framing a House I	Allen, Chapter 5 (169-199)	
17.	Lab #5, "Construction II: Wood Light Frame"		
18. Th, Nov 1	12. Framing a House II	Kwok & Grondzik, *Green Studio Handbook*	Lab #6
Week 8			
19. Tu, Nov 6	13. Roof: Convention vs. Collection	Allen, 200-205, 597-600, and 625-641	
20.	Lab #6, "Case Study III: Ecological House 1"		
21. Th, Nov 8	14. Wall: Barrier vs. Breath	Kwok & Grondzik, *Green Studio Handbook*	Lab #7
Week 9			
22. Tu, Nov 13	15. Wall Cladding: Skin vs. Hair	Allen, Chapter 6 (205-234)	
23.	Lab # 7, "Case Study IV: Ecological House 2"		
24. Th, Nov 15	16. Wall Fill: Solid Breath	Schittich, *Solar Architecture*	Lab #8
Week 10			
25. Tu, Nov 20	17. Wall Finishes: Sustainable Tactics	Allen, Chapter 7	
26.	Lab # 8, "Construction III: Ecological Shelter"		
Th, Nov 22	**Thanksgiving, no class**		
Week 11			
27. Tu, Nov 27	18. Conclusions: An Ecological Summary	McDonough & Braungart, *Cradle to Cradle*	
	no lab		
Th, Nov 30	Final Reviews, no class		
Final Exam	**Wednesday December 10, 11:30-1:18**		