

COLUMBIA UNIVERSITY
GRADUATE SCHOOL OF ARCHITECTURE, PLANNING AND PRESERVATION

Fall 2017

A4229 Studies in Tectonic Culture

Instructor: Kenneth Frampton

Teaching Assistant: Taylor Zhai Williams (tzw2111@columbia.edu)

Class Meetings: Wednesday, 9 - 11 am, 200 South Fayerweather (RED lecture room)

The tectonic proffers itself today as a critical strategy largely because of the current tendency to reduce architectural form to a spectacular image. This new found emphasis on structure and construction may be seen as a response to the postmodern drive towards the scenographic. This theatrical preoccupation has been accompanied by the general dissolution of stable references in the late modern world.

Greek in origin, the term *tectonic* derives from the term *tekton*, signifying carpenter or builder. It is related to the Sanskrit *taksan*, referring to the craft of carpentry and to the use of the axe. Remnants of a similar term can also be found in Vedic, where it again refers to carpentry. In Greek it appears in Homer, where it alludes to the art of construction in general. The poetic connotation of the term first appears in Sappho where the *tekton*, the carpenter, assumes the role of the poet. Thus the meaning of the term undergoes an evolution as it passes from being something specific and physical to a more generic notion of making, touching on the poetic.

The concept of the *tectonic* as a "poetic of construction" was first elaborated in nineteenth century German architectural theory. The architectural scholar, K.O. Muller would define it in 1850 as pertaining to "a series of arts which form and perfect dwellings and places of assembly ...we call this class of artistic activities tectonics. Their highest point is architectonics which rises above the trammels of necessity and may become powerfully representative of deep feelings."

Gottfried Semper was to endow the term with similar connotations in his break with the classic Vitruvian paradigm of *utilitas*, *fermitas*, and *venustas*. He arrived at this rupture with the publication of his Four Elements of Architecture in 1852, wherein a new ethnographic theory of culture divides the primitive hut into four basic elements; (1) earthwork, (2) hearth, (3) framework/roof, and (4) a light-weight enclosing membrane. Semper went on to classify the process of building and, by extension, craft production into two basic procedures; into the *tectonics* of the frame, in which light-weight, linear components are assembled so as to embody a spatial matrix and the *stereotomics* of the earthwork, formed out of the repetitious stacking of heavy-weight units. That this last implies load-bearing masonry of some kind, be it stone or mud-brick. This is confirmed by the etymology of stereotomic, breaking down into *stereo*, stone and *tomia*, cutting. This *tectonic/stereotomic* distinction was reinforced by the fact that in German there is a differentiation between two classes of wall, between *Die Wand*, a screen-like woven fabric, such as we find in a wattle and daub wall and *Die Mauer* alluding to the thick, heavy-weight masonry enclosures used in fortification.

In his 1963 essay, Structure, Construction, and Tectonics, Eduard Sekler distinguishes between the *structure* as the fundamental anti-gravitational principle of built form, *construction* as a particular assembly of techniques to achieve this form and *tectonics* as an expressive interaction between these modes. He writes:

"When a structural concept has found its implementation through construction the visual result will affect it through certain expressive qualities which clearly have something to do with the play of forces and corresponding arrangement of parts in the building yet cannot be described in terms of construction and structure alone. For these qualities which are expressive of a relation of form to force, the term tectonic should be reserved."

This lecture traces the emergence of the tectonic in the evolution of 19th and 20th century architecture. It will examine the role played by structure and construction in the development of modern form. It will reconsider the so-called autonomy of architecture not only in terms of space and form but also from the standpoint of the poetics of construction, as this has made itself over the past 150 years. The basic text for this course is my book Studies in Tectonic Culture (1995).

Lecture Schedule:

Lecture 1: (Sept. 6) The Scope of the Tectonic: 19th and 20th Century Architecture

Lecture 2: (Sept. 13) Greco-Gothic & Neo-Gothic

Lecture 3: (Sept. 20) The Rise of the Tectonic: Core Form and Art Form

Lecture 4: (Sept. 27) Frank Lloyd Wright and the Text-Tile Tectonic

Lecture 5: (Oct. 4) Auguste Perret and Classical Rationalism

No Lecture (Oct. 11)

Lecture 6: (Oct. 18) Mies van der Rohe: Avant-Garde and Continuity

Lecture 7: (Oct. 25) Louis Kahn and the New Monumentality

Lecture 8: (Nov. 1) Jørn Utzon and Transcultural Form

No Lecture (Nov. 8)

Lecture 9: (Nov. 15) Carlo Scarpa and the Adoration of the Joint

No Lecture (Nov. 22)

Lecture 10: (Nov. 29) Postscriptum: The Tectonic Trajectory

Course Requirements:

These may be satisfied either by researching and writing a paper of some 3,500 to 5000 words, fully footnoted, illustrated, etc. or by building a tectonic model as part of a team.

Listed below are a series of hypothetical paper topics given as an example. You may choose to tackle one of these or to develop your own topic in consultation with the tutor:

1. "The Influence of J. N. L. Durand on Karl Friedrich Schinkel" (fn. 16, p. 395)
2. "The Place of Architecture in the Philosophy of Arthur Schopenhauer" (fn. 26, p. 396)
3. "Richard Streiter's Critique of Karl Boltcher" (fn. 48, p. 367)
4. "Auguste Choisy and the Evolution of Perret's Théâtre des Champs-Élysées" (fn 25, p. 398)
5. "Maria Bottero's Comparison Between Sullivan, Wright and Kahn" (fn. 9, p. 402)

The following works are listed below as the potential subjects for a study model. In each instance the subject is listed together with a required scale and the recommended number of students for each model. In most instances a sectional model will be asked for and the point of the cross-section has to be approved by the tutor. A model drawing has also to be approved before beginning construction.

1. Sikia House, Greece, 1951. Aris Konstantinidis. $1\frac{1}{2}''=1'$ (2 persons)
2. Baranzate Church, Vialba, Italy, 1959. Mangiarotti and Morassutti. $\frac{3}{4}''=1'$ (2 persons)
3. Sainsbury Centre, University of Norwich, UK. Norman Foster. $\frac{3}{4}''=1'$ (2 persons)
4. Arcosolium, Brion Cemetery, Italy, 1978. Carlo Scarpa. $1\frac{1}{2}''=1'$ (2 persons)
5. Porto Petro House, Majorca, Spain, 1974. Jørn Utzon. $1\frac{1}{2}''=1'$ (2 persons)
6. Kimbell Museum, Texas, USA, 1972. Louis Kahn. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
7. Reader's Digest, Tokyo, Japan, 1951. Antonin Raymond. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
8. Théâtre de l'Exposition des Arts Décoratifs, Paris, France. 1925. $\frac{1}{2}''=1'$ (4 persons)
9. Herbert Jacobs House, Wisconsin, USA, 1936. Frank Lloyd Wright. $\frac{1}{2}''=1'$ (4 persons)
10. Gatti Wool Works, Rome, Italy, 1953. Pier Luigi Nervi. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
11. Maison Week End, La Celle-Saint-Cloud, France, 1934. Le Corbusier. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
12. Maison Jaoul, near Paris, France, 1956. Le Corbusier. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
13. House at Norrköping, Sweden, 1964. Sverre Fehn. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)
14. Zanussi Rex, Pordenone, 1961. Gino Valle. $\frac{3}{4}''=1'$ (3 persons)
15. La Rinascente, Rome, Italy, 1961. Albini and Helg. $1''=1'$ (3 persons)
16. Nordic Pavilion, Venice, Italy, 1962. Sverre Fehn. $1''=1'$ (2 persons)
17. Basketball Stadium, Badelona, Spain, 1991. Esteve Bonell and Francesc Rius. $\frac{3}{4}''=1'$ (6 persons)
18. Maravillas School, Madrid, Spain, 1962. Alejandro de la Sota. $\frac{3}{4}''=1'$ (3 persons)
19. 3000 Seat Hall, 1982. Viollet-le-Duc. $\frac{1}{2}''=1'$ (2 students)
20. Barnes House, Nanaimo, Canada, 1996. Patkau Architects. $\frac{3}{4}''=1'$ or $1''=1'$ (2 persons)

READINGS

Lecture 1: (Sept. 6) The Scope of the Tectonic: 19th and 20th Century Architecture

Studies in Tectonic Culture (chap 1)

Eduard Sekler, "Structure, Construction & Tectonics" in Structure in Art and in Science, Brazil, New York, 1965, pp 89-95.

Giorgio Grassi: "Avant Garde and Continuity" Oppositions No: 21, IAUS MIT Press Summer 1980, pp 25-32.

Ignacio Sola de Morales, "Critical Discipline", Oppositions No: 23, 1981, p. 141-150.

Lecture 2: (Sept. 13) Greco-Gothic & Neo-Gothic

Studies in Tectonic Culture (chap 2)

H. Damisch, "The Space Between: A Structuralist Approach to the Dictionnaire," Architectural Design Profile 27, v. 50, nos. 3/4, 1980, pp 84-89.

Viollet-le-Duc, Eugène-Emmanuel, Dictionnaire raisonné de l'architecture française du XIe au XVIe siècle, New York: George Braziller Inc, 1990, pp 1-30.

Lecture 3: (Sept. 20) The Rise of the Tectonic: Core Form and Art Form

Studies in Tectonic Culture (chap 3)

Gottfried Semper, The Four Elements of Architecture & Other Essays, translated by Harry Mallgrave & Wolfgang Herrmann, Cambridge University Press, 1989. See in particular pp 74-129.

Karl Bötticher, "Die Tektonik der Hellenen (Potsdam: 1844)" in Oechslin, Werner, Otto Wagner, Adolf Loos, and the Road to Modern Architecture, Cambridge: Cambridge University Press, 2002, pp188-198.

Mitchell Schwarzer, "Ontology & Representation in Karl Bötticher's Theory of Tectonics" JSAH 52, September 1993, pp 267-280.

Lecture 4: (Sept. 27) Frank Lloyd Wright and the Text-Tile Tectonic

Studies in Tectonic Culture (chap 4)

John Sergeant, "Woof and warp: a spatial analysis of Frank Lloyd Wright's Usonian Houses", Environment and Planning B, 1976, v. 3, no. 2, pp 211-224.

Frank Lloyd Wright, "In the Cause of Architecture VIII, Sheet Metal and a Modern Instance", Architectural Record, October 1928. Reprinted in the Cause of Architecture: Essays by Frank Lloyd Wright for the Architectural Record, 1908-1952, edited by Frederick Gutheim, New York, 1975, pp 217-219.

M.F. Hearn, "A Japanese Inspiration for Frank Lloyd Wright's High-Rise Structures", Journal of the Society of Architectural Historians, v. 2, no.1, March 1991, p. 68-71.

Lecture 5: (Oct. 4) Auguste Perret and Classical Rationalism

Studies in Tectonic Culture (chap 5)

Auguste Perret, "Contribution to a Theory of Architecture" in Karla Britton, Auguste Perret, London: Phaidon, 2001, pp 238-243. (Larger reproduction to be distributed in class.)

Lecture 6: (Oct. 18) Mies van der Rohe: Avant-Garde and Continuity

Studies in Tectonic Culture (chap 6)

Fritz Neumeier, "1926: Stimuli, Critique, and Orientation", The Artless Word, MIT Press, 1991. pp 162-236.

Philip C. Johnson, Mies van der Rohe, The Museum of Modern Art, New York, 1947, (1975 edition).

Lecture 7: (Oct. 25) Louis Kahn and the New Monumentality

Studies in Tectonic Culture (chap 7)

Maria Bottero, "Organic and Rational Morphology in the Architecture of Louis Kahn," Zodiac 17, 1967, p. 240-245.

Louis Kahn, "Monumentality," pp 577-588. Paul Zucker (ed.), New Architecture and City Planning New York, 1944.

Lecture 8: (Nov. 1) Jørn Utzon and Transcultural Form

Studies in Tectonic Culture (chap 8)

Jørn Utzon, "Platforms and Plateaus: Ideas of a Danish Architect", Zodiac 10, 1962, pp 113-126.

Kim Dirckinck-Holmfeld, "Utzon and Tradition", Jørn Utzon and the New Tradition, Copenhagen, 2005, Danish Architectural Press, pp 13-51.

Lecture 9: (Nov. 15) Carlo Scarpa and the Adoration of the Joint

Studies in Tectonic Culture (chap 9)

Marco Frascari, "The Tell-the-Tale Detail", Via No. 7, 1984, University of Pennsylvania

Hubert Damisch, "The Drawings of Carlo Scarpa", Carlo Scarpa: The Complete Works, 1985, New York, Rizzoli

Lecture 10: (Nov. 29) Postscriptum: The Tectonic Trajectory

Studies in Tectonic Culture (chap 10)