

COLUMBIA UNIVERSITY GRADUATE SCHOOL OF ARCHITECTURE, PLANNING  
AND PRESERVATION

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Studies in Tectonic Culture

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The tectonic suggests itself today as a critical strategy largely because of the current tendency to commodify architectural form. In some respects, this interest arises out of a reaction to Robert Venturi's concept of the "decorated shed." In this sense it is response to the current fashion for treating architecture as though it were little more than an expendable mise en scene. This amortizable scenographic approach has been accompanied by the general dissolution of references in the late modern world. With the possible exception of applied science, the precepts governing many discourses today have become rather unstable. It is no longer self-evident that the once progressive trajectory of modernization will have a positive outcome.

Greek in origin, the term tectonic derives from the term tekton, signifying carpenter or builder. This in turn stems from the Sanskrit taksan, referring to the craft of carpentry and to the use of the ax. Remnants of a similar term can also be found in Vedic, where it refers again 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. This meaning undergoes further evolution as the term passes from being something specific and physical, such as carpentry, to a more generic notion of making, bordering on the poetic.

That the idea of tectonic was consciously revived in nineteenth century German thought is evident from the all too tautological definition of the term in English where it means quite simply pertaining to building. That the term acquired an altogether richer connotation in Germany is suggested in an 1850 definition provided by the architectural scholar, K.O. Muller who was to define it 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."

Strongly influenced by Muller, Gottfried Semper was to endow the term with similar connotations in his categorical break with the Vitruvian paradigm of utilitas, fermitas, and venustas. Semper announced 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, is indicated by the etymology of stereotomic, breaking

down into stereo, stone and tomia, cutting. This tectonic/stereotomic distinction was reinforced in German by the fact that the language differentiates between two classes of wall, between Die Wand, indicating a screen-like woven fabric, such as a wattle and daub wall and Die Mauer signifying a massive fortification.

In a 1963 essay entitled Structure, Construction, and Tectonics (1963), Eduard Sekler distinguished between structure as the fundamental ordering principle, of a work construction as a particular physical manifestation of this principle and tectonics as an expressive form representative of the other two modes.

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 course seeks to trace the presence of the tectonic idea in the evolution of modern architecture. It attempts to re-examine twentieth century architecture from the point of view of the role played by structure and construction in the development of modern form. The lecture sequence will address itself to the so-called autonomy of architecture not so much in terms of space and form but rather from the standpoint of a poetics of construction as this has made itself manifest over the past 150 years.

Bibliography and Course Requirements: In the bibliography given below, all the texts included within the class reader are indicated with an asterisk. The remaining titles will be put on reserve. Students may fulfill the requirements of this course through three alternative options; (a) a 3500-5000 word essay on a topic to be agreed with the instructor, (b) a group study model of an unbuilt work to be agreed upon with the instructor and (c) a take-home examination to be issued on the occasion of the last lecture. The first two options will only remain available up to lecture No. 7.

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### Lecture Schedule & Readings

#### **Lecture 1: (Sept. 6) Introduction: Notes on the Scope of the Tectonic**

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

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

Ignasi Sola de Morales, "Critical Discipline", Oppositions No: 23, 1981, p. 146. \*



Eduard F. Sekler, "The Stoclet House by Josef Hoffman," pp., 228-244. Douglas Fraser, Howard Hibberd, Milton LeVine (ed.) Essays in the History of Architecture presented to Rudolf Wittkower, Phaidon, London, 1967.\*

## **Lecture 2: (Sept. 13) Graeco-Gothic & Neo-Gothic: The Anglo-French Origins of Tectonic Form**

Robin Middleton, "The Abbe de Cordemoy and the Graeco-Gothic Ideal: A prelude to Romantic Classicism" Journal of the Warburg & Courtland Institute, v. 25 nos. 3-4, July-Dec. 1962, pp.278-320.

Robin Middleton, "Viollet-le-Duc, Eugene Emmanuel," Macmillan Encyclopedia of Architects, vol. 4, New York, 1982, pp. 324-332.

David T. Van Zanten, "Labrouste, Henri," Macmillan Encyclopedia of Architects, vol. 2, New York, 1982, pp. 592-596.

H. Damisch, "The Space Between: A Structuralist Approach to the Dictionnaire," Architectural Design Profile 27, v. 50, nos. 3/4, 1980, pp. 88-89.\*

Phoebe Stanton, "A.W. N. Pugin", MacMillan Encyclopedia of Architects, New York, 1982, V.3, pp. 484-497.

## **Lecture 3: (Sept. 20) The Tectonic Idea and the Prussian Enlightenment**

Rosemarie Haag Bletter, "On Martin Fröhlich's Gottfried Semper", Oppositions 4, October 1974, p. 148.\*

Wolfgang Hermann, Gottfried Semper. In Search of Architecture, MIT Press, pp. 3-83; 174-244.

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; 181-214.

Barry Bergdoll, "Karl Friedrich Schinkel" in Macmillan Encyclopedia of Architecture vol. 3, pp. 679-692.

Kurt W. Forster, "Schinkel's Panoramic Planning of Central Berlin", Modulus 16, Charlottesville, Virginia, 1983, pp. 65 & ff.\*

Barry Bergdoll, "Friedrich Gilly" in Macmillan Encyclopedia of Architects, Vol: 2, pp. 205-207.

Carolin van Eck, Organicism in nineteenth century architecture, Architectura & Natura, Amsterdam 1994.

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

#### **Lecture 4: (Sept. 27) Hendrik Petrus Berlage and the Tectonic Synthesis**

Helen Searing, "Hendrik Petrus Berlage", Macmillan Encyclopedia of Architects, Vol: 1, pp. 185-189.

Sergio Polano (ed), Hendrik Petrus Berlage, Rizzoli, New York, 1988. This work carries a series of essays by G. Fanelli, Vincent van Rossen, Jan de Heer and by Berlage himself, pp. 9-98.

Pieter Singelenberg, H.P. Berlage, Haentjens Dekker & Gumbert, Utrecht, 1972, pp. 1-85; 169-195.

#### **Lecture 5: (Oct. 4) Otto Wagner and the Culture of Ringstrasse**

Heinz Geretsegger & Max Peintner, Otto Wagner 1841-1916, Praeger, New York, 1970, pp. 9-104.

M. Tafuri, "Am Steinhof, Centrality and Surface in Otto Wagner's Architecture", Lotus 29, 1981, pp. 73-91.\*

Otto Wagner, Modern Architecture, translated by Hally Mallgrave, Getty Center, 1990, pp. 61-80, 91-99.

Harry Francis Mallgrave editor, Otto Wagner: Reflections on the Raieiment of Modernity, Getty Center, Los Angeles, 1993.

#### **Lecture 6: (Oct 11) Frank Lloyd Wright and the Textile Tectonic**

Roula Geraniotis, "Gottfried Semper and the Chicago School", Paper delivered at the Buell Center, Columbia University, 1988.\*

Barry Bergdoll, "Primordial Fives: Frank Lloyd Wright, Gottfried Semper and the Chicago School", Paper delivered at the Buell Center, Columbia University, 1988.\*

David Van Zanten, Owen Jones in the MacMillan Encyclopedia of Architects, vol. 2, p. 514.

Louis Sullivan, "Suggestions in Artistic Brickwork" (1910). Reprinted in The Prairie School Review 4 (Second Quarter), pp. 24-2.

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.\*

Sigfried Giedion, Space Time and Architecture, 15th Editions, HUP, Cambridge, Mass., 1967.\*

M.F. Hearn, "A Japanese Inspiration for Frank Lloyd Wright's High-Rise Structures", Journal of the Society of Architectural Historians, Vol: 2, N.1, March 1991, p. 70.\*

John Sergeant, Frank Lloyd Wright's Usonian Houses, Whitney Library of Design, New York, 1984, pp. 15-86; 122-136.\*

Jack Quinan, Frank Lloyd Wright's Larkin Building, The Architectural History Foundation, New York, 1987, pp. 21-110.\*

### **Lecture 7: Auguste Perret and Structural Classicism**

Bruno Reichlin, "The Pros and Cons of the Horizontal Window, The Perret - Le Corbusier Controversy", Daidalos 13, September 1984, pp. 71-82.\*

Auguste Perret, Contribution a une theorie de l'architecture, (unpaginated), Cercle d'etudes architecturales, Andre Wahl, Paris, 1952 (first published in Das Werk 34-35, Feb. 1947).\*

Peter Collins, Concrete: The Vision of a New Architecture (A Study of Auguste Perret & His Precursors), Faber & Faber, London 1949. 1959 Edition, pp. 153-287.\*

Vittorio Gregotti, "Auguste Perret, 1874-1974. Classicism and Rationalism in Perret," Domus, no. 534, May 1974, p. 19.\*

Henri Bressler, "Windows on the Court", Rassegna 28, Milan, 1979.\*

### **Lecture 8: (Oct. 18) Mies Van der Rohe: Avant Garde & Continuity**

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

Peter Carter, "Mies van der Rohe: An appreciation on the Occasion, This Month, of his 75th Birthday" Architectural Design, v. 31, March 1961, p. 100.\*

Colin Rowe, "Neoclassicism and Modern Architecture," Part II, Oppositions, September 1973, New York, Institute for Architecture & Urban Studies, p. 18.\*

Fritz Neumeyer, The Artless Word, MIT Press, 1991.\*

Massimo Cacciari, "Mies's Classics", Res 16, Journal for Anthropology & Aesthetics, Autumn 1988, Cambridge University Press, pp. 13 & 14.\*

Wolf Tegethoff, Mies van der Rohe. The Villas & Country Houses, MOMA New York, 1984.\*

### **Lecture 9: (Nov. 8) Louis Kahn: Modernization and Monumentality**

Paul Zucker (ed.), New Architecture and City Planning New York, 1944, "The Need for a New Monumentality," S. Giedion (with F. Leger, L. Sert), pp. 549-568 (also in Architecture, You and Me, S. Giedion, Cambridge, 1958, pp. 25-39).\*

Architectural Design, n. 4, April 1961, Louis Kahn, "Form and Design," p. 145.\*

Louis Kahn, "Toward A Plan for Midtown Philadelphia," Perspecta 2, 1953, p. 23.\*

Louis Kahn, "Order in Architecture," Perspecta 4, 1957, p. 64.\*

Alexandra Tyng, Beginnings: Louis I. Kahn's Philosophy of Architecture, Wiley & Sons (New York 1984).

Nell E. Johnson (ed.), Light is the Theme: Louis I. Kahn and the Kimbell Art Museum, Fort Worth, Texas, 1975.

### **Lecture 10: (Nov. 11) Jorn Utzon: The Pagoda and the Podium**

Jorn Utzon, "Ideas of a Danish Architect," Zodiac 10, 1962 (pp. 112-140).\*

The Work of Jorn Utzon, Arkitektur, Denmark, vol. 14, n.1 1970.

Philip Drew The Third Generation: The Changing Meaning of Architecture, Praeger, New York, 1972.

"A New Personality: Jorn Utzon," Zodiac 5, 1959 (pp. 70-105).\*

"Address" by Utzon, Lasdum, Foster. RIBA Journal, vol. 85, n. 10, October, 1978 (pp. 425-427).\*

S. Giedion, "Jorn Utzon & The Third Generation" Zodiac 14 (pp. 36-47) (Added to the later edition of Space, Time & Architecture).

### **Lecture 11: (Nov 15) Carlo Scarpa: The Logos of Techne**

Giuseppe Zambonini "Process and Theme in the Work of Carlo Scarpa," Perspecta 20, 1983, pp. 21-42\*

Marco Frascari, "Facade Design: an Ancient Wisdom of Italians," Diadolos no: 6, Berlin.\*

Marco Frascari, "The Tell-the-Tale Detail" Via 7, MIT Press.\*



## **Lecture 12: (Nov. 22) The Tectonic Trajectory**

Esteve Bonell. "Civic Monuments," Architectural Review, July 1990, pp. 69-74.\*

\_\_\_\_\_, "Velodromo a Barcelona," Casabella 519, Dec. 85, pp. 54-64.

Esteve Bonell & Francesc Rius. "Velodrome, Barcelona," Architectural Review, May 1986, pp. 88-91.

Fjeld, Per Olaf. Sverre Fehn: The Thought of Construction, Rizzoli New York, 1983.

Herman Hertzberger. "Place, Choice and Identity," World Architecture/Four, London, 1967, pp. 73-74.

\_\_\_\_\_. "Architecture for People," A+UP, 77:03, March 1977, pp. 124-46.\*

Arnulf Luchinger. Herman Hertzberger: Buildings and Projects 1959-1986. The Hague, 1987.

\_\_\_\_\_. "Dutch Structuralism," A+U, 77:03, March 1977, pp. 47-65.

Raphael Moneo. "The Idea of Lasting," Perspecta 24. Journal of Yale School of Architecture.\*

Agnoldomenico Pica. Pier Luigi Nervi. Rome, 1969.

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