

Syllabus

Architectural Visualization since 1900

Reinhold Martin

Teaching Assistants:

Hollyamber Kennedy, Peter Minosh, Daniel Talesnik, Norihiko Tsuneishi

A4326 (or A4024, Part I)

Monday 11am-1pm

Wood Auditorium, Avery Hall

Spring 2014

As a rule, architects do not build. They draw, write, annotate, diagram, model, map, sketch, photograph, animate, and otherwise visualize objects, spaces, territories, and processes; they make visual and verbal presentations; they compile visual and written analyses and reports; and they issue visual and written instructions.

This lecture course surveys these activities across the twentieth century through selected episodes in the history of architectural visualization in a variety of geographic and cultural contexts. The approach is thematic and follows a loose chronology built around concepts, problems, and practices associated with international modernism and its aftermath. In and through these, we will observe architectural knowledge being constructed, drawings and buildings interacting, and ideas, techniques, and imagery circulating.

Each lecture considers a specific issue within the history of architecture, technology, and visualization since around 1900. A limited number of drawings, models, photographs, films, and other visual artifacts are analyzed in depth. Some readings situate these examples historically, while others offer conceptual orientation. Though formally a history and theory lecture, the course brings together concerns shared among different aspects of the GSAPP architecture curriculum, including visual studies, the technology sequence, and the design studios.

The course also introduces students to the material infrastructures and interfaces through which architectural conventions move across national, cultural, and geographic boundaries. The history of architectural visualization in the twentieth century is also a history of globalization. It entails translation, standardization, reproduction, transformation, location, and circulation. In this context, the term "modern architecture" is redundant. Since, what the century's dominant discourse calls "architecture" is by definition a modern phenomenon that has codified visually a variety of building cultures and practices.

Material covered in the lectures and readings includes diagrams, travel sketches, orthographic and axonometric projections, perspectives, representations of movement, construction drawings, maps, models, architectural and aerial photographs, renderings, and digital documents, from 1900 to the present.

Course Requirements

Students are required to attend all classes, complete the required readings, and complete the class assignments.

ALL STUDENTS

Each week a one-page reading response (250-300 words) will be due by Sunday at midnight on Courseworks. The response should address all of the required texts, unless you explicitly indicate otherwise. Each response should have a title, to give a sense of the argument you are making. Please briefly read through your section classmates' posts before class on Monday.

FOR THOSE ENROLLED IN A4024 (Architectural Drawing & Representation II):

Students are expected to complete ONLY Required Readings. Additional materials listed as Further Reading and as Further Reference are

suggested for those wishing to read more deeply in a given subject.

You will receive comments from your instructor every fourth session. As there is no final paper or exam required for this course, attendance, participation in seminar discussion and weekly reading responses will determine your overall grade.

FOR THOSE ENROLLED IN A4326 (Architectural Visualization since 1900):

Students are expected to complete BOTH Required Readings AND Further Readings. Additional materials listed as Further Reference are suggested for those wishing to read more deeply in a given subject, or those writing research papers.

In addition to the reading responses, there will be two assignments during the semester: A 500-word (max.) paper abstract and research bibliography and a final research paper of 15 pages (max.), plus illustrations.

All papers should be 12-point double-spaced and follow bibliographic, footnoting, and other guidelines outlined in the Chicago Manual of Style (available as an E-Books through CLIO).

For A4236 (Architectural Visualization since 1900) only: One required book, Erwin Panofsky, Perspective as Symbolic Form [1927], is available purchase in Bookculture (West 112th St. between Broadway and Amsterdam Ave.).

All required and further readings are available on Courseworks or through e-journals on different online databases as indicated (JSTOR, MUSE, WILEY ONLINE, etc.). Most books are available in Avery Library. E-Books are listed as such and may be accessed through CLIO. E-journals may be accessed through the Columbia University Libraries "Databases" at: <http://library.columbia.edu/>

Grading

Grades for the class will be determined as follows:

FOR THOSE ENROLLED IN A4024 (Architectural Drawing & Representation II)

This portion of the class will constitute 50% of your total grade, as follows:

Reading responses	35%
Class participation	15%

FOR THOSE ENROLLED IN A4326 (Architectural Visualization since 1900)

Reading responses	20%
Class participation	20%
Final paper	60%

Students should adhere to standard guidelines regarding academic honesty, such as those described in the GSAS Statement on Academic Honesty, available at:

<http://www.columbia.edu/cu/gsas/rules/chapter-9/pages/honesty/index.html>

Required Text (A4236 Architectural Visualization since 1900, only):

Erwin Panofsky, Perspective as Symbolic Form [1927] trans. Christopher S. Wood (New York: Zone Books, 1991)

[SHOULD BE READ BY WEEK 5]

Logistics

The first half of the class each week will be a lecture, from 11:00-11:45 in Wood Auditorium. Following that, the class will divide into discussion sections from 12:00-1:00 in the assigned classrooms. Students enrolled in Architectural Drawing 2 will be assigned sections run by the Teaching Assistants, and those enrolled in Architectural Visualization since 1900 will attend the section run by Prof. Martin.

Schedule and Readings

Week 1 Media: From Representation to Communication

27 January 2014

Required Reading

Robin Evans, "Architectural Projection," in Eve Blau and Edward Kaufman, eds. Architecture and Its Image: Works from the Canadian Centre for Architecture (Montréal: Canadian Centre for Architecture, 1989), 18-35.

Marshall McLuhan, Understanding Media: The Extensions of Man (New York: McGraw-Hill, 1964), Chap. 1, "The Medium Is the Message," 7-21.

Further Reading

Vilém Flusser, "On the Theory of Communication [1986]," in Writings, trans. Erik Eisel (Minneapolis: University of Minnesota Press, 2002), 8-20.

Friedrich A. Kittler, Gramophone, Film, Typewriter [1986], trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999), Preface, xxxix-xli.

Friedrich A. Kittler, Optical Media: Berlin Lectures 1999, trans. Anthony Enns (Malden, MA: Polity Press, 2010), Chap. 3, "Optical Media," 118-224.

Marshall McLuhan, Understanding Media: The Extensions of Man (New York: McGraw-Hill, 1964), Chap. 2, "Media Hot and Cold," 22-32.

Further Reference

Catalogue of the Andrew Alpern Collection of Drawing Instruments at the Avery Architectural and Fine Arts Library Columbia University in the City of New York (New York: Trustees of Columbia University in the City of New York, 2010)

James S. Ackerman, Origins, Imitation, Conventions: Representation in the Visual Arts (Cambridge: MIT Press, 2002), Chap. 2, "The Origins of Architectural Drawing in the Middle Ages and Renaissance," 27-65. EBOOK

Mario Carpo, The Alphabet and the Algorithm (Cambridge: MIT Press, 2011), Part 2, "The Rise," 50-79.

Mario Carpo, "Drawing with Numbers: Geometry and Numeracy in Early Modern Architectural Design," Journal of the Society of Architectural Historians 62, No. 4 (December 2003): 448-469. JSTOR

Mario Carpo and Frédérique Lemerle eds., Perspective, Projections, and Design: Technologies of Architectural Representation (New York: Routledge, 2007), selections.

Hubert Damisch, The Origin of Perspective, trans. John Goodman (Cambridge: MIT Press, 1994), Chap. 2, "Perspective, a Thing of the Past?" 22-40.

Robin Evans, "Translations from Drawing to Building," in Evans, Translations from Drawing to Building (Cambridge: MIT Press, 1997), 153-193.

Jacques Guillerme and Hélène Vérin, "The Archaeology of Section," trans. Stephen Sartarelli, Perspecta 25 (1989): 226-257. JSTOR

Hans-Ulrich Gumbrecht and Karl Ludwig Pfeiffer, eds., Materialities of Communication, trans. William Whobrey (Stanford: Stanford

University Press, 1994)

Ian Hacking, Representing and Intervening: Introductory Topics in the Philosophy of Natural Science (New York: Cambridge University Press, 1983), "Reals and Representations," 130-146.

Friedrich A. Kittler, "Perspective and the Book," trans. Sarah Ogger, Grey Room 5 (Fall 2001): 38-53. JSTOR

Friedrich A. Kittler, "On the Relation of Art and Techne," lecture, European Graduate School, <http://www.egs.edu/faculty/friedrich-kittler/videos/the-relation-of-art-and-techne/>

Werner Oechslin, "Architecture, Perspective, and the Helpful Gesture of Geometry," Daidalos 11 (March 1984): 38-54.

Alberto Pérez-Gómez and Louise Pelletier, Architectural Representation and the Perspective Hinge (Cambridge: MIT Press, 1997)

Werner Szambien, "Architectural Drawings at the Ecole Polytechnique in Paris at the Beginning of the Nineteenth Century Daidalos 11 (March 1984): 55-64.

Week 2 Translation: The Movement of Information

3 February 2014

Required Reading

Hyungmin Pai, The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America (Cambridge: MIT Press, 2002), Chap. 2, "The Portfolio and the Academic Discipline," 40-73.

Further Reading

Bruno Latour, "Drawing Things Together," in Michael Lynch and Steve Woolgar, eds., Representation in Scientific Practice (Cambridge: MIT Press, 1990), 19-68.

Richard A. Moore, "Academic 'Dessin' Theory in France after the Reorganization of 1863," Journal of the Society of Architectural Historians 36, n. 3 (October 1977): 145-174. JSTOR

Mark A. Hewitt, "Beaux Arts Representation and the Golden Age of American Draftsmanship." Classicist 3 (1996): 27-34.

Annie Jacques, "The Programmes of the Architectural Section of the École des Beaux Arts, 1819-1914," in Robin Middleton, ed. The Beaux-Arts and Nineteenth-Century French Architecture (London: Thames & Hudson, 1982), 58-65.

Further Reference

Zeynep Çelik, "Le Corbusier, Orientalism, Colonialism," Assemblage 17 (April 1992): 58-77. JSTOR

Le Corbusier, Journey to the East, ed. Ivan Žaknić, trans. Ivan Žaknić with Nicole Pertuiset (Cambridge: MIT Press, 1987)

Banister Fletcher, A History of Architecture on the Comparative Method for Students, Craftsmen & Amateur [1896], 4th rev. ed. (London: B.T. Batsford, 1901) EBOOK

Julien Guadet, Éléments et théorie de l'architecture: cours professé a l'École nationale et spéciale des beaux-arts, 4 v. (Paris: Librairie de la construction modern, 1901-1904) EBOOK

Neil Levine, "The Competition for the Grand Prix in 1824," in Robin Middleton, ed. The Beaux-Arts and Nineteenth-Century French Architecture (London: Thames & Hudson, 1982), 66-123.

Patricia A. Morton, "Disorienting Le Corbusier: Charles-Edouard Jeanneret's 1911 Voyage d'Orient," in Tyler Stovall and Georges van den Abbeele, eds. French Civilization and Its Discontents: Nationalism, Colonialism, Race (Lanham: Lexington Books, 2003).

Gülsüm Baydar Nalbantoğlu, "Toward Postcolonial Openings: Rereading Sir Banister Fletcher's 'History of Architecture,'" Assemblage 35 (April 1998): 6-17. JSTOR

Kevin Nute, Frank Lloyd Wright and Japan: The Role of Traditional Japanese Art and Architecture in the Work of Frank Lloyd Wright (New York: Routledge, 2000)

Li Shiqiao, "Writing a Modern Chinese Architectural History: Liang Sicheng and Liang Qichao," Journal of Architectural Education 56, n. 1 (September 2002): 35-45. <http://onlinelibrary.wiley.com/doi/10.1162/104648802321019155/pdf>

Liang Sicheng (Liang Ssu-ch'eng), A Pictorial History of Chinese Architecture: A Study of the Development of Its Structural System and the Evolution of Its Types ed. Wilma Fairbank (Cambridge, MIT Press, 1984)

David van Zanten, "Architectural Composition at the École des Beaux-Arts from Charles Percier to Charles Garnier," in Arthur Drexler ed., The Architecture of the École des Beaux-Arts (New York : Museum of Modern Art, 1977), 111-323.

Week 3 The World Picture: Numbers and Standards

10 February 2014

Required Reading

Robin Evans, The Projective Cast: Architecture and Its Three Geometries (Cambridge: MIT Press, 1995), Chap. 7 "Comic Lines," 272-319.

Further Reading

Nader Vossoughian, Otto Neurath: The Language of the Global Polis (Rotterdam: NAI Publishers, 2011), Chap. 3, "Globalism," 88-141.

John Bender and Michael Marrinan, The Culture of Diagram (Stanford: Stanford University Press, 2010), Chap. 5, "Numbers," 152-197.

Peter Galison, "Aufbau/Bauhaus: Logical Positivism and Architectural Modernism," Critical Inquiry 16, No. 4 (Summer 1990): 709-752. JSTOR

Further Reference

Don Graf, Data Sheets: Thousands of Simplified Facts about Building Materials and Construction (New York: Reinhold, 1944)

Ernst Neufert, Bau-Entwurfslehre (Berlin: Bauwelt Verlag, 1936)

Planning: The Architect's Handbook (London: Architecture and Building News, 1936)

Kenchiku Shiryo Shioshu (Architectural Design Data Collection) (Tokyo: Japan Society of Architecture, 1941)

Hyungmin Pai, The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America (Cambridge: MIT Press, 2002), Chap. 8, "New Genres and New Formations," 198-235. (on Architectural Graphics Standards)

Brian Rotman, "The Technology of Mathematical Persuasion," in Timothy Lenoir, ed. Inscribing Science: Scientific Texts and the Materiality of Communication (Stanford: Stanford University Press, 1998), 55-69.

Week 4 Objects and Objectivity

17 February 2014

Required Reading

Yve-Alain Bois, "Metamorphosis of Axonometry." Daidalos 1 (September 1981): 41-58.

Claire Zimmerman, "Photographic Modern Architecture: Inside the 'New Deep,'" Journal of Architecture 9, n. 3 (Autumn 2004): 331-354. TAYLOR & FRANCIS ONLINE

Further Reading

- Peter J. Booker, [A History of Engineering Drawing](#) (London: Northgate Publishing, 1982), Chap. 17, "Axonometric Projection," 198-212.
- Bruno Reichlin, "Reflections: Interrelations between Concept, Representation, and Built Architecture," [Daidalos](#) 1 (September 1981): 60-73.
- Robin Evans, [The Projective Cast: Architecture and Its Three Geometries](#) (Cambridge: MIT Press, 1995), Chap. 9 "Rumors at the Extremities," 336-349.

Further Reference

- James S. Ackerman, [Origins, Imitation, Conventions: Representation in the Visual Arts](#) (Cambridge: MIT Press, 2002), Chap. 4, "On the Origins of Architectural Photography," 95-124. EBOOK
- Walter Benjamin, "Little History of Photography" [1931], trans. Edmund Jephcott and Kingsley Shorter, in Benjamin, [The Work of Art in the Age of Its Technical Reproducibility and Other Writings on Media](#), ed. Michael W. Jennings, Brigid Doherty, and Thomas Y. Levin (Cambridge: Harvard University Press, 2008), 274-198.
- Auguste Choisy, [Histoire de l'architecture](#) (Paris: E. Rouveyre, 1899) EBOOK
- Beatriz Colomina, [Privacy and Publicity: Modern Architecture as Mass Media](#) (Cambridge: MIT Press, 1994)
- Lorraine J. Daston and Peter Galison, [Objectivity](#) (New York: Zone Books, 2007)
- Sergei M. Eisenstein, "Montage and Architecture," with introduction by Yve-Alain Bois, [Assemblage](#) 10 (December 1989): 110-131 (read Bois intro, 110-115) JSTOR
- Richard A. Etlin, "Le Corbusier, Choisy, and French Hellenism: the Search for a New Architecture," [Art Bulletin](#) 69, n.2 (1987): 264-278.
- Thierry Mandoul, "From Rationality to Utopia: Auguste Choisy and Axonometric Projection," in Mario Carpo and Frédérique Lemerle eds., [Perspective, Projections, and Design: Technologies of Architectural Representation](#) (New York: Routledge, 2007).
- Robin Middleton, "Auguste Choisy, Historian: 1841-1909." [International Architect](#). 1.5 (1981): 37-40.
- Bernhard Schneider, "Perspective Refers to the Viewer, Axonometry Refers to the Object," [Daidalos](#). 1 (1981): 81-95.
- Massimo Scolari, "Elements for a History of Axonometry." [Architectural Design](#). 55, nos. 5-6 (1985): 73-78.
- Massimo Scolari, [Oblique Drawing: A History of Anti-Perpspective](#) (Cambridge, MA: MIT Press, 2012).

Week 5 Dynamism: Space and Time

24 February 2014

Required Reading

- Hyungmin Pai, [The Portfolio and the Diagram: Architecture, Discourse, and Modernity in America](#) (Cambridge: MIT Press, 2002), Chap. 7, "Scientific Management and the Discourse of the Diagram," 163-197.

Further Reading

- Walter Benjamin "The Work of Art in the Age of Its Technological Reproducibility" [1936], trans Edmund Jephcott and Harry Zohn, in [Benjamin, Selected Writings 1935-1938](#), ed. Michael W. Jennings, Howard Eiland, and Gary Smith (Cambridge: Harvard University Press, 2002), 101-133.
- Stephen Kern, [The Culture of Time and Space 1880-1918](#) (Cambridge: Harvard University Press, 1983), Chap. 6., "The Nature of Space," 131-180.
- Anson Rabinbach, [The Human Motor: Energy, Fatigue, and the Origins of Modernity](#) (Berkeley: University of California Press, 1990), Chap. 4,

“Time and Motion: Etienne-Jules Marey and the Mechanics of the Body,” 84-119.

Further Reference

Rudolf Arnheim, Art and Visual Perception: A Psychology of the Creative Eye, [rev. ed., orig. 1954] (Berkeley: University of California Press, 1976), Chap. 8, “Movement,” 372-409; Chap. 9, “Dynamics,” 410-443.

Marta Braun, Picturing Time: The Work of Étienne-Jules Marey (1830-1904) (Chicago: University of Chicago Press, 1992)

Jimena Canales, A Tenth of a Second: A History (Chicago: University of Chicago Press, 2009), Introduction, 1-19. EBOOK

François Dagognet, Étienne-Jules Marey: A Passion for the Trace, trans. Robert Galeta and Jeanine Herman (New York: Zone Books, 1992)

Sigfried Gideon, Mechanization Takes Command: A Contribution to Anonymous History (New York: Oxford University Press, 1948)

Linda Dalrymple Henderson, “The Image and Imagination of the Fourth Dimension in Twentieth-Century Art and Culture,” Configurations 17, n. 1-2 (Winter 2009): 131-160. MUSE (online)

Gyorgy Kepes, Language of Vision (Chicago: Paul Theobald, 1944) EBOOK

El Lissitzky, “A. and Pangeometry” [1925], in Lissitzky, Russia: An Architecture for World Revolution, trans. Eric Dluhosch (Cambridge: MIT Press, 1970), 142-149.

Detlef Mertins, “Architectures of Becoming: Mies van der Rohe and the Avant-Garde,” in Terence Riley and Barry Bergdoll, eds., Mies in Berlin (New York: Museum of Modern Art, 2001), 106-133.

László Moholy-Nagy, “Production, Reproduction,” in Moholy-Nagy, Painting Photography Film [1925], trans. Janet Seligman (Cambridge: MIT Press, 1969), 30-31.

László Moholy-Nagy, The New Vision: From Material to Architecture [1928], trans. Daphne M. Hoffman (New York: Brewer, Warren & Putnam, 1932)

László Moholy-Nagy, Vision in Motion (Chicago: Paul Theobald, 1947)

Frederic J. Schwartz, Blind Spots: Critical Theory and the History of Art in Twentieth Century Germany (New Haven: Yale University Press, 2005), Chap. 2 “Walter Benjamin and the Avant-Garde,” 37-102.

Bernhard Siegert, “Eupalinos, or The Master Shipwright: The Threshold between Land and Sea as a Design Tool,” Configurations 18 (2010): 421-439. MUSE (online)

Week 6 Horizon as Symbolic Form: Plans and Grids

3 March 2014

Required Reading

Peter Collins, “The Origins of Graph Paper as an Influence on Architectural Design,” Journal of the Society of Architectural Historians 21, No. 4 (December 1962): 159-162. JSTOR

Le Corbusier, Towards an Architecture [1923], trans. John Goodman (Los Angeles: Getty Research Institute, 2007), “Three Reminders to Architects, III Plan,” 115-130, and “Regulating Lines,” 131-144.

Rosalind E. Krauss, The Originality of the Avant-Garde and Other Modernist Myths (Cambridge: MIT Press, 1985), “Grids,” 8-22.

Werner Oechslin, “Raumplan versus Plan Libre,” Daidalos 42 (15 December 1991): 76-83.

Further Reading

Henry Plummer, “The Horizon Reveries of Frank Lloyd Wright,” Daidalos 21 (15 December 1991): 110-121.

Bruno Reichlin, “The Pros and Cons of the Horizontal Window: The Perret-Le Corbusier Controversy,” Daidalos 13 (15 September 1984): 64-

78.

Wolf Tegethoff, "On the Development of the Conception of Space in the Works of Mies van der Rohe," Daidalos 13 (15 September 1984): 114-123.

Further Reference

Yve-Alain Bois, Painting as Model (Cambridge: MIT Press, 1990), Part II, Sect 1, "The De Stijl Idea," 101-122.

H. Allen Brooks, "Frank Lloyd Wright and the Wasmuth Drawings," Art Bulletin 48, No. 2 (1966): 193-202.

Le Corbusier, Le poème de l'angle droit (Paris: Fondation Le Corbusier, 1989)

Arthur Drexler, The Drawings of Frank Lloyd Wright (New York: Horizon Press, 1962)

Arthur Drexler, ed., The Mies van der Rohe Archive, Vols. 1-20 (New York: Garland, 1986-1992)

John Elderfield, "Grids," Artforum 10 (May 1972): 52-59.

Clement Greenberg, "Abstract, Representational, and so forth" [1954] in Greenberg, Art and Culture: Critical Essays (New York: Beacon Press, 1961), 133-138.

K. Michael Hays, "Odysseus and the Oarsmen, or, Mies's Abstraction Once Again," in Detlef Mertins ed. The Presence of Mies (New York: Princeton Architectural Press, 1996), 235-249.

Rosalind E. Krauss, "The Grid, the /Cloud/, and the Detail," in Detlef Mertins ed. The Presence of Mies (New York: Princeton Architectural Press, 1996), 133-148.

Rosalind E. Krauss, The Optical Unconscious (Cambridge: MIT Press, 1993), Chap. 1, 1-30.

Bruce Brooks Pfeiffer, Frank Lloyd Wright Drawings: Masterworks from the Frank Lloyd Wright Archives (New York: Abrams, 1990)

Max Risselada, ed., Raumplan versus Plan Libre: Adolf Loos / Le Corbusier (Delft: Delft University Press, 1987)

Week 7 Systems: Pattern Seeing

10 March 2014

Required Reading

Antoine Picon, Digital Culture in Architecture: An Introduction for the Design Professions (Basel: Birkhäuser, 2010), Chap. 1 "People, Computers, and Architecture: An Historical Overview," 15-57.

Further Reading

John Harwood, The Interface: IBM and the Transformation of Corporate Design 1945-1976 (Minneapolis: University of Minnesota Press, 2011), Chap. 2, "The Architecture of the Computer," 59-99.

Reinhold Martin, The Organizational Complex: Architecture, Media, and Corporate Space (Cambridge: MIT Press, 2003), Chap. 2, "Pattern Seeing," 42-79.

Further Reference

Larry Busbea, Topologies: The Urban Utopia in France, 1960-1970 (Cambridge: MIT Press, 2007), Chap. 1, "Spatial Culture in France, 1960-1970," 9-31.

Eric DeBruyn, "Topological Pathways of Post-Minimalism," Grey Room 25 (Fall 2006): 32-63.

Sean Keller, "Fenland Tech: Architectural Science in Postwar Cambridge," Grey Room 23 (Spring 2006): 40-65. JSTOR

György Kepes, The New Landscape in Art and Science (Chicago: Paul Theobald, 1956)

György Kepes, Module, Proportion, Symmetry, Rhythm (New York: George Braziller, 1966)

György Kepes, Sign, Image, Symbol (New York: George Braziller, 1966)

György Kepes, Education of Vision (New York: George Braziller, 1965)

György Kepes, The Nature of Art and Motion (New York: George Braziller, 1965)

György Kepes, Structure in Art and Science (New York: George Braziller, 1965)

György Kepes, The Man-Made Object (New York: George Braziller, 1966)

György Kepes, Arts of the Environment (New York: George Braziller, 1972)

Friedrich Kittler, Optical Media: Berlin Lectures 1999, trans. Anthony Enns (Malden, MA: Polity Press, 2010), Chap. 3, "Optical Media," 118-224; Chap. 4, "Computers," 225-230.

Claus Pias, "'Hollerith Feathered Crystal:' Art, Science and Computing in the Era of Cybernetics," trans. Peter Krapp, Grey Room 29 (Winter 2008): 110-133. JSTOR

Lancelot Law Whyte, Aspects of Form: A Symposium on Form in Nature and Art (London: Lund Humphries, 1951)

Spring Break (no class)

17 March 2014

Week 8 From Above, From Below: Contested Territories

24 March 2014

Required Reading

Laura Kurgan, Close Up at a Distance: Mapping, Technology, and Politics (New York: Zone Books, 2013), "Introduction," 9-38.

Tom McDonough ed., The Situationists and the City (New York: Verso, 2009), Chap. 6, "The Critique of Urban Planning," 139-167. Selected Situationist texts.

Further Reading

Vittoria Di Palma, "Zoom: Google Earth and Global Intimacy," in Di Palma, Diana Periton, and Marina Lathouri, eds., Intimate Metropolis: Urban Subjects in the Modern City (New York: Routledge, 2009), 239-270.

Anthony Vidler, "Photourbanism: Planning the City from Above and from Below," in Vidler, The Scenes of the Street and Other Essays (New York: Monacelli Press, 2011), 317-328.

Further Reference

Beatriz Colomina, "Enclosed by Images: The Eameses Multimedia Architecture," Grey Room 2 (Winter 2001): 5-29. JSTOR

Paul Edwards, The Closed World: Computers and the Politics of Discourse in Cold War America (Cambridge: MIT Press, 1996), Chap. 4, "From Operations Research to the Electronic Battlefield," 113-145. EBOOK

David Gissen, "Drawing Air: The Visual Culture of Bio-political Imaging," in Marco Frascari, Jonathan Hale, and Bradley Starkey, eds., From Models to Drawings: Imagination and Representation in Architecture (London: Routledge, 2007), 155-167.

Ernst Gombrich, "Mirror and Map: Theories of Pictorial Representation," Philosophical Transactions of the Royal Society of London, Series B, Biological Sciences 270, n. 903 (13 March 1975): 119-149. JSTOR

Tanis Hinchcliffe, "Aerial Photography and the Postwar Urban Planner in London." London Journal. 35.3 (2010): 277-288.

John Macarthur, "Landscape and Prospect from the Picturesque to Aerial Photography," In Steven Jacobs and Frank Maes eds., Beyond the Picturesque (Ghent: Stedelijk Museum voor Actuele Kunst, 2009), 209-219.

John Macarthur, The Picturesque: Architecture, Disgust and Other Irregularities (New York: Routledge, 2007)

Eyal Weizman, Hollow Land: Israel's Architecture of Occupation (New York: Verso, 2007), Chap. 7, "Urban Warfare: Walking through Walls," 185-220.

Catherine de Zegher and Mark Wigley, eds. The Activist Drawing: Retracing Situationist Architectures from Constant's New Babylon to Beyond (Cambridge: MIT Press, 2001)

Week 9 Risk: The International Division of Labor

31 March 2014

Required Reading

Andrew Saint, Architect and Engineer: A Study in Sibling Rivalry (New Haven: Yale University Press, 2007), Chap. 5, "Reconciliation," 364-429.

Further Reading

Ulrich Beck, Risk Society: Towards a New Modernity, trans. Mark Ritter (London: Sage, 1992), Chap. 1, "On the Logic of Wealth Distribution and Risk Distribution," 19-50. EBOOK

Felicity D. Scott, Architecture or Techno-utopia: Politics after Modernism (Cambridge: MIT Press, 2007) Chap. 8, "Shouting Apocalypse," 208-245.

Further Reference

Peter J. Booker, A History of Engineering Drawing (London: Northgate Publishing, 1982)

Reinhold Martin, Utopia's Ghost: Architecture and Postmodernism, Again (Minneapolis: University of Minnesota Press, 2010), Chap. 3, "Language: Environment c. 1973," 49-67.

David E. Nye, "Energy in the Thought of R. Buckminster Fuller," in Hsiao-Yun Cho and Roberto G. Trujillo eds., New Views on R. Buckminster Fuller (Stanford: Stanford University Press, 2009), 86-98.

Felicity D. Scott, "Fluid Geographies: Politics and the Revolution by Design," in Hsiao-Yun Cho and Roberto G. Trujillo eds., New Views on R. Buckminster Fuller (Stanford: Stanford University Press, 2009), 160-175.

Eyal Weizman, The Least of All Possible Evils: Humanitarian Violence from Arendt to Gaza (London: Verso, 2012), Chap. 3, "The Best of All Possible Walls," 65-98.

Week 10 Black and White and Color: Form/Figure/Context

7 April 2014

Required Reading

Colin Rowe and Robert Slutzky, "Transparency: Literal and Phenomenal," in Rowe, The Mathematics of the Ideal Villa and Other Essays (Cambridge: MIT Press, 1976), 159-183.

Further Reading

Robert Venturi, Complexity and Contradiction in Architecture (New York: Museum of Modern Art, 1966), Preface, 18-21; Chap. 3, "Ambiguity," 27-30; Chap. 4, "Contradictory Levels: The Phenomenon of 'Both-And' in Architecture," 30-38; Chap. 5, "Contradictory Levels Continued: The Double-Functioning Element," 38-45.

Klaus Herdeg, The Decorated Diagram: Harvard Architecture and the Failure of the Bauhaus Legacy (Cambridge: MIT Press, 1983), Preface, vi-vii; and Chap. 3, "Teaching: A Critique of the Gropius Method," 78-97.

Colin Rowe, "The Mathematics of the Ideal Villa" [orig. 1947], in Rowe, The Mathematics of the Ideal Villa and Other Essays (Cambridge: MIT Press, 1976), 1-27.

Further Reference

Christopher Alexander, Notes on the Synthesis of Form (Cambridge: Harvard University Press, 1964)

Robin Evans, "Not To Be Used for Wrapping Purposes," AA Files 10 (Autumn 1985): 68-78; also in Evans, Translations from Drawing to Building (Cambridge: MIT Press, 1997).

K. Michael Hays, Architecture's Desire: Reading the Late Avant-Garde (Cambridge: MIT Press, 2010), "Repetition," 51-88.

Klaus Herdeg, Formal Structure in Indian Architecture (New York : Rizzoli, 1990)

Klaus Herdeg, Formal Structure in Islamic Architecture of Iran and Turkistan

(New York : Rizzoli, 1990)

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Week 11 Computerization Takes Command

14 April 2014

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Week 12 Visualizing Change: The Line of the Anthropocene

21 April 2014

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Final papers due (for A4326)

9 May (by 5pm, PDF by Dropbox on Courseworks)

Entry requirements and selection procedures will vary according to the course of study, so it is important to check specific entry qualifications within our online prospectus for your choice of course. Required and preferred subjects. Some of the programmes we offer require you to have studied a subject or subjects to a certain level before commencing your undergraduate studies. These are specified in the programme entry requirements as compulsory subjects. What Are Course Requirements - BestOfCoursesbestofcourses.com Course Requirements. COVID-19 Update. We understand that the pandemic is still interfering with an applicant's ability to take classes in person or for a letter grade. We will continue to accept courses taken from 2020-2021 online and for pass/not pass. Required Courses. Please review the descriptions carefully and note that these are minimum prerequisite course requirements. Completed courses must have been taken for letter grades. UK entry requirements (UG) | Study at King's College London | King's College London kcl.ac.uk Choosing Your Courses. 6.1 General Information. Degree and Program Completion: Students are wholly and ultimately responsible for ensuring their academic programs meet UTSC's regulations in all respects, including: completeness and correctness of course selection, compliance with prerequisite and corequisite requirements, completion of program requirements, completion of degree requirements and observance of all academic regulations and deadlines. Course Pre-requisites nus.edu.sg Basic course requirements for the General Externship Program: An externship in the General Program requires students to complete fieldwork hours, which vary depending on the credit hours sought, and participate in a corresponding seminar, which is not separately graded. Credit Students may earn two (2), three (3) or four (4) credit pass/fail hours in a single semester. Course Requirements | Integrated Program in Neurosciences mcgill.ca Course Requirements Please note that academic preparation and planning may be different during the pandemic. Please refer to our COVID-19 FAQ Academics section for the most up to date information. Medical, dental, veterinary, and other health professions schools require a strong foundation in the sciences. 395 learned More Courses. Get Course. Course Requirements - Weber State University. Good weber.edu. International Entry Requirements: What's my degree score... warwick.ac.uk