Designing the Future City

In the 19th century, thousands of factories were created in cities, which increased the demand for transportation, housing, water and resources. The urban fabric of many existing cities became severely overcrowded as millions of people migrated from struggling farms to industrial areas. The population of London doubled, rising from two million to four million people. New York’s population rose from two hundred thousand to a sprawling metropolis of 3.4 million. The rapid growth in urban areas led to problems of air pollution, water pollution, traffic congestion, and slum housing.

In the 20th century, architects and planners also faced profound cultural changes. In the first fifty years there were two World Wars, revolutions in Russia and China, inflation in Europe and depression in the U.S. After each major conflict, there were shortages in housing, resources, and infrastructure. In most cases, the old design solutions could no longer be utilized, for the physical and emotional landscapes had changed. New concepts were needed for cultures emerging from difficult circumstances.

Throughout the 20th century, there were also a series of technological changes. The Machine Age, the Automobile Age, the Space Age, and the Information Age were among the most significant trends. Each of these eras introduced new issues in cities. Development of the automobile brought millions of vehicles into cities and led to the construction of highways, parking lots, gas stations, and traffic systems. The Space Age led to the creation of airports and prefabricated housing projects. The Media and Information Age led to new fiber optics systems and greater demand for energy and resources.

In the late 20th century, the need for new urban visions became apparent. The world population had tripled in only sixty years. Fourteen cities had populations of over ten million people and the number of megacities was expected to double within twenty years. Architects and planners were searching for new strategies to establish sustainable environments, based on renewable energy systems, green architecture, and environmental planning concepts.

This workshop introduces the basic issues of planning and designing sustainable cities. It begins with a brief study of the historical evolution of cities and the physical systems of the urban form, including land use, transportation, parks, infrastructure, services, and resources. Using New York as a prototype, social and environmental problems are discussed; and planning issues, such as function, circulation, zoning, spatial organization, landscape, and art are also explored. Design concepts, such as the creation of symmetry, axis, rhythm, repetition, and massing are also examined.

Students develop several types of projects to explore urban issues. The course begins with a site analysis that includes a photographic essay, urban planning diagrams, drawings, and map studies of land use and existing conditions that lead to the creation of a design solution. One project involves the creation of a series of abstract models in spatial organization and town planning. Another exercise focuses on solutions for specific sites, such as design proposals to improve an existing neighborhood, park, or vacant space in the New York grid. Students are also asked to write a statement that explores new systems for the future, such as recycling, bicycle transportation, or services for the homeless. The paper includes an examination of related historical models, followed by an application to sites in the current city.
Required Reading

Goodman, Donna, *A History of the Future*

Recommended Reading on Urban Topics

Architecture for Humanity, editors, *Design Like You Give a Damn*
Barnett, Jonathan, *The Elusive City*
Duany, Andres, Elizabeth Plater-Zyberk, and Speck, Jeff, *Suburban Nation*
Eaton, Ruth, *Ideal Cities*
Howard, Ebenezer, *Garden Cities of Tomorrow*
Jacobs, Jane, *The Death and Life of Great American Cities*
Koolhaas, Rem, *Delirious New York*
Kostof, Spiro, *The City Shaped*
Kunstler, James Howard, *Geography of Nowhere*
Le Corbusier, *The City of Tomorrow and its Planning*
Mumford, Lewis, *The City in History*
Pawley, Martin, *Architecture vs. Housing*
Powell, Kenneth, *City Transformed*
Ross, Michael Franklin, *Beyond Metabolism*
Venturi, Robert, and Scott Brown, Denise, *Learning from Las Vegas*

Criteria for Grading:
- class participation
- quality of analysis in planning and design projects
- quality of design concepts and project development
- quality of visual and verbal presentations
- individual improvement throughout the semester

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Materials: Available at Blick Art Store, Pearl Paint, or most large art supply stores

- 12” roll of inexpensive white tracing paper (20 yds. or 50 yds.)
- 24” T-square, metal is better than wood or a Parallel Ruler
- House plan and Plumbing Template – Pickett 1150i or equivalent
- Inexpensive Lead or Pencil Sharpener
- Drafting Board (and board cover, if needed)
- Design and Layout Kit or the following tools:
  - Lead holder and 2 Leads (H or 2H) or Pencils with H or 2H leads
  - Pencil Eraser and Ink Eraser
  - 12” Architectural Scale (triangular) or a Ruler (in inches)
  - 2 Triangles (30, 60, 90 degrees and 45 degrees)

Students should also have access to a camera, computer, basic drawing and model building tools.
Designing the Future City: Outline of Topics

1. First Class: Introduction: Spatial Organizations and Environmental Issues
   a. Discussion: Overview of Issues related to Density, Environment, and Spatial Considerations
   b. Film: Sequences from New York A Documentary Film on the 1811 grid plan and/or the experimental film, Koyaanisqatsi
   c. Reading: Goodman, pp. 7-9, 22-50
   d. Assignment: Observation and Recording: Create a Photographic Study of Washington Square
      1. People and Functions: playgrounds, chess, bocci ball, picnic tables
      2. Art and Structures: buildings, statues, the arch, the fountain
      3. Landscape and Design Details: signs, furniture, types of trees and plants
      4. Park Problems: Crime, homelessness, garbage, bad usage of park space

2. Second Class: The Industrial Revolution
   a. Discussion: 19th Environmental issues, the Debate on Industrialization, the Role of Subways
   b. Film: Sequence in New York: A Documentary Film on Central Park and/or River of Steel on subways
   c. Reading: Goodman, pp. 53-68
   d. Assignment: Develop a master plan of Washington Square Park. Make 6 copies of the master plan.
      Draw diagrams of the following concepts on the copies. Create a key for each map.
      1. Function: Create a map of major park functions, also show seating areas
      2. Landscape and Circulation: Create a map of landscaped areas and paths
      3. Structures and Art: Create a map indicating structures and public art
      4. Park Problems: Create a map designating park problems

3. Third Class: The Machine Age in Europe
   b. Film: Scenes from Metropolis & New York: A Documentary Film on the Triangle Shirt Factory fire
   c. Reading: Goodman, pp. 91-94, 99-108, 11-120
   d. Assignment: Rendering
      Complete the map study as discussed in class. Choose one of your photographs to serve as the basis of a rendering. Make few copies of the photograph and then trace and render the image as discussed in class. The rendering will be placed on the cover or introductory page of your booklet. Write a short description of the neighborhood, which will serve as an introduction to your booklet.

4. Fourth Class: The Machine Age in America
   a. Discussion: Early Industrial Designers, the Streamlined Era, WPA infrastructure, Tall Buildings
   b. Film: Sequence from New York: A Documentary Film on construction of the Empire State Building
   c. Reading: Goodman, pp. 123-152
   d. Assignment: Study Model for Spatial Organization Exercise
      Create a study model, based on class discussion. Develop models of four spatial organizations and create diagrams of each layout. Include a grid, a linear concept, a centralized concept, and an organic arrangement. Do not glue down the pieces. Bring the diagrams and the model to class.
5. Fifth Class: The Automobile Age

a. Discussion: The impact of automobiles and mass production on housing and planning
b. Film: Sequence from New York: A Documentary Film on the highway projects of Robert Moses
c. Reading: Goodman, pp. 161-163, 166-178, 186-193
d. Assignment: Create a New Design Concept for the utilization of a space within the park

Study the proposed site. Create an idea for designing this space. It could be based on the concept of a small building like a greenhouse or museum, an outdoor facility, such as a small stage, green market, or bocci court; or a practical facility for the homeless, a bicycle repair shop, or recycling center. Write a brief description of the proposal as an introduction to the design. Draw a diagram of the site plan.

6. Sixth Class: The Space Age

a. Discussion: Hi-Tech Design, Lightweight and Mobile Architecture, Reaction Against Modernism
b. Film: Portland: A Sense of Place and/or scenes from the film, New York: A Documentary Film on destroying Penn Station and other landmarks
c. Reading: Goodman, pp. 195-212, 218-226
d. Assignment: Develop the Basic Plan of the Project

Using tracing paper, develop the site plan into a full proposal, based on class discussion. Show the landscaping, structures, outdoor seating, art, and other elements as needed. If your design includes a building, draw a floor plan and an elevation of the building at a larger scale as shown in class.

7. Seventh Class: The Media and Information Age

a. Discussion: Impact of Economic Change on Cities, Adaptive Reuse and Urban Redevelopment
b. Film: Sequences from the film, Roger and Me
c. Reading: Goodman, pp. 229-268
d. Assignment: Redesign the Concept, based on class critique

Rework the design, based on critique. Develop research on the choice of landscape, paving, art, furniture, and other elements. Choose specific materials, plants, and details. Create a presentation.

8. Eighth Class: The Environmental Age

a. Discussion: Tall Buildings, Eco-tourism, Green Architecture, and Sustainable Infrastructure
b. Film: The Green Apple
c. Reading: Steffen, pp. 191-262
d. Assignment: Develop a model or a three-dimensional drawing of the design

Develop either a three dimensional drawing or a model of the design. The drawing can either be an isometric or a perspective, drawn by hand or using Sketch-up or another computer program. It should portray the true scale of the project and the intended materials and composition of the site.

9. Ninth Class: Struggling Economies and Informal Cities

a. Discussion: Refugees Settlements and Issues of Disaster Relief
b. Film: Energy for a Developing World
c. Reading: Steffen, pp. 299-378
d. Assignment: Create a Presentation of Important Elements and Concepts

Create the final pages for the booklet that express the parti or design and planning concepts; historical references, choices of materials and details, spatial organization, functional, and environmental concepts. Add written commentary as needed. Add the new pages, illustrating design development to the photographic study, maps, and park problems analysis.

10. Tenth Class: Urban Transportation Systems and Linear Parks

   a. Discussion: Multiple Transportation Systems, Integrating Public Parks and Movement Systems
   b. Film: *China: From Red to Green*
   c. Reading: Steffen, pp. 121-189
   d. Assignment: Scan the project into the computer to create a final presentation or build a model

Prepare for final presentation. If time permits, build a model of your design. It can be made of foam core, cardboard, or wood, as discussed in class. It can be conceived as a “massing model.” Or scan the project into the computer for a final presentation, using powerpoint or a similar program.

11. Eleventh Class: Adaptive Reuse and Neighborhood Redevelopment

   a. Discussion: Reviving a Troubled Urban Area
   b. Film: *Bogota: Building a Sustainable City* and/or *Adaptive Reuse in the Netherlands*
   c. Reading: Steffen, pp. 29-98
   d. Final Presentations

Note: Some of the films on the schedule may be changed due to availability.