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.
Course Location: Gallatin, Room 432
Meeting Times and Dates: July 8- August 14, Mondays and Wednesdays, 5:30-8:30

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

Contact Information: dgstudio@aol.com
Office Hours: Mondays and Wednesdays, 4:45-5:15, Room 431

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.
Academic Integrity and Plagiarism:

"As a Gallatin student you belong to an interdisciplinary community of artists and scholars who value honest and open intellectual inquiry. This relationship depends on mutual respect, responsibility, and integrity. Failure to uphold these values will be subject to severe sanction, which may include dismissal from the University. Examples of behaviors that compromise the academic integrity of the Gallatin School include plagiarism, illicit collaboration, doubling or recycling coursework, and cheating. Please consult the Gallatin Bulletin or Gallatin website: http://gallatin.nyu.edu/academics/policies/integrity.html

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* and/or *New York: A Documentary Film* on 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: Write a statement on park problems and recommendations. Complete the booklet.

   Write a short statement about the park problems and suggestions for park improvements for the booklet. Include images to illustrate your idea. Complete any unfinished pages of the book, such as photographs, maps, text, and/or diagrams. Add titles, references, and rendered cover image.

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: 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.

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: 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.

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: 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.

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: 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.  

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: 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.  

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: 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.  

11. Eleventh Class: Adaptive Reuse and Neighborhood Redevelopment  
a. Discussion: Reviving a Troubled Urban Community  
b. Film: Bogota: Building a Sustainable City and/or Adaptive Reuse in the Netherlands  
c. Reading: Steffen, pp. 29-98  
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.  

12. Twelfth Class: Future Technologies for Cities  
a. Discussion: Final Presentations of Projects  
b. Film: sequence from Who Killed the Electric Car?  

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

ANALYSIS OF WASHINGTON SQUARE PARK

The NYC Parks Commission is interested in improving Washington Square Park. They have asked for proposals, examining the existing conditions and providing ideas for improvements. They may want to add a kiosk, a work of art, or landscaping. Proposals must begin with an analysis of current conditions. The analysis will include historical research, a photographic study of current conditions, maps and diagrams of the park, drawings, and a critique of park problems. The proposal can be a small structure to introduce a new facility, a landscape concept, or a general planning proposal that improves park services.

First Part: Create a photographic essay of Washington Square Park. Develop one 11” x 17” page on each topic listed below. Write a title and add a few paragraphs of text on each page.

1. Art and Structures: art, buildings, fountains, major spaces
2. Landscape and Paving: trees, grass, hedges, bushes, flowers, stones, paving, seating
3. People and Functions: playground, chess, dog run, general seating, other activities
4. Issues and Problem Areas: the homeless, areas not being used, awkward signs or fences

Second Part: Develop a masterplan of Washington Square Park. The plan can be created by walking through the park or looking down at the park from Kimmel or another building on Washington Square. Since the layout is somewhat symmetrical, some areas of the plan can be reproduced from a template of one area. Make 6 copies of the basic masterplan. Draw diagrams of the following planning concepts. 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

Third Part: Write an introduction to the booklet, which describes the history of the park and a description of its current use and significance. Choose a photograph that best expresses your idea of Washington Square Park for the cover of your booklet. Create a rendering from your photograph or a freehand drawing of the park. The rendering can be made by tracing a photograph and developing the image in pencil or ink. Color may be added later. Photoshop can be used if a student is uncomfortable with drawing. To create the rendering:

1. Print a copy of a photograph of the park. Trace the photograph as a line drawing in either ink or pencil. Make three photocopies of the line drawing for the purpose of experiments.
2. Do several short experiments on the copies. Create a “slice of the rendering” to explore light and shadow. Express black, white, and at least three shades of gray, if using pencil. If using ink, show various degrees of light and darkness in dots or lines of varied density.
3. Experiment with various ways of depicting a tree, grass, sky, water, and other elements.
4. Optional: To try color; experiment on another copy with colored pencils or markers.

Fourth Part: Write a short critique of the park, describe existing problems; include images to illustrate the comments. Add a brief statement of suggestions and/or proposals for improving the park.
SPATIAL ORGANIZATION

In this exercise, the planning process is experienced in a three dimensional exercise, exploring forms and spatial organizations. It begins with the construction of a massing model, a kit-of-parts that serves as a basis for experimenting with various spatial arrangements. The massing model includes several types of Platonic solids. Using paper, foam core, clay, or cardboard; create the following pieces:

**Platonic Solids**

1. six cubes ..................... 1" wide x 1" deep x 1" high
2. two cylinders ..................... 2" high x 1" diameter
3. two pyramids ..................... 2" high x 1" square base
4. four tall rectangular boxes........ 3" high x 1" x 1" square base

**Base:** Make a base for the model in cardboard or foam core, 11"x 17.” Draw a 1”x 1” grid on the base

1. Layout a design for each of the following spatial arrangements, using the model to explore various possibilities. **Do not glue the pieces.** Keep them free for further exploration and presentation of designs
   a. create a plan that emphasizes the grid
   b. create a plan that emphasizes a centralized concept
   c. create a plan that has an organic or clustered concept
   d. create a plan that uses a linear concept

2. Draw a plan of each concept, so that you’ll remember each design. Begin by making at least 4 copies of the grid base, then indicate the location of pieces for each layout in following manner:
   a. a square represents a cube
   b. a circle represents a cylinder
   c. a triangle represents a pyramid
   d. a rectangle represents a rectangular shaped piece

**THE DESIGN PROJECT**

1. Create a proposal for improving the park or the alternative site. Write a description of the concept and draw a plan. Indicate the location of your proposal on a map. You can either create a new structure in the park, like a small outdoor theater, snack bar, pavilion, or bicycle storage area. Or, if you don’t wish to design a building, you can introduce a work of art, improve a system, such as signage, lighting, information, or trash collection, or work on a paving or landscape.

2. Develop the plan of the project. Identify the parti and historical references. Choose the materials and create text, details, and diagrams as in the analysis project. Refine the plan and site plan based on critique.

3. Create an elevation of the design. Develop a two dimensional drawing of your proposed design, showing the vertical concept of the project. Pull it up from the plan along a single line of reference.

4. Develop a three dimensional image of the design as an axonometric, computer model, or perspective sketch. As an alternative to the 3-D assignment, you can create a more extensive information page on the design, materials, and planning systems, or build an architectural model. Complete the booklet with an introduction, parti, and historical reference pate, site map, plan, elevation, and three dimensional image.