RISE OF THE MODERN CITY
TALL BUILDINGS IN MoMA'S COLLECTION

A Guide for Educators

Department of Education at The Museum of Modern Art

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A NOTE TO EDUCATORS

It is our pleasure to present this new guide for educators, which explores the development of the skyscraper in urban environments through The Museum of Modern Art's rich collection. This guide is informed by issues posed by the selected works in a variety of mediums (architecture and design, drawing, photography, and prints), but its organization and lesson topics are created with the school curriculum in mind, with particular application to social studies, visual art, history, and language arts. Lessons are accompanied by writing, research, and hands-on, art-based activities that encourage students to make connections between the works discussed and their environment.

The goal of this guide is to introduce students to the design and construction of skyscrapers and to demonstrate to teachers the variety of ways in which architecture can be used in the classroom. The guide's purpose is not just to explicate works of art, but also to demonstrate how images and historical information can be integrated into different subject areas as well as project-based learning in the classroom.

The works featured in this guide were selected for their innovative design and their influence on the development of modern urban life. The guide has been organized chronologically, so that students can reflect on the stylistic and technological changes that took place during the twentieth century. Students will be introduced to significant ideas in art and culture from this period, and by comparing a variety of mediums and artistic styles, they will be able to practice observation, articulation, and discussion skills, and will further develop their visual literacy.

USING THE EDUCATORS GUIDE

The five lessons that comprise this guide—**A New Way of Looking**, **Rise of the Modern City**, **Vertical Thinking**, **Exploring the Design Process**, and **Designing for the Future**—may be used sequentially or as independent units. The lessons include an introduction to key principles followed by a close examination of each work, including formal analysis and historical context. Discussion questions lead students through their own formal analysis of the artwork and help them create connections between information and visual evidence. The activities that conclude each lesson encourage students to synthesize what they have learned about the work and carries the lesson into the broader curriculum or relates it to skills students are practicing in the classroom.

IMAGES

All of the questions, discussions, and activities in this guide are based on the images on the accompanying CD-ROM. Carefully examine each image prior to showing it to your students. Your classroom should be equipped with a computer and LCD projector.

ACTIVITIES

The Activities section is intended to help students make connections between their own experiences and the concepts presented in the lesson. Through these activities, students will begin to develop a language for discussing and looking at architecture and art. Feel free to tailor the activities to the skill level of your students.

The materials in this guide provide suggestions for in-depth research projects on specific artists or artistic movements. We encourage you to add your own topics to those we have included.

FOR FURTHER CONSIDERATION AND SELECTED BIBLIOGRAPHY AND RESOURCES

Additional discussion questions, research projects, and ideas for field trips are included in this section. A Bibliography and Resources section has been included for teachers and students to use in conducting research. The recommended resources provide further information for classroom activities, as well as on the artists, artworks, and historical topics in this guide.

GLOSSARY

A glossary of architectural and art historical terms (in bold upon first mention in each lesson) is included at the end of the guide.

SETTING THE SCENE

UNDERSTANDING ARCHITECTURE

Architecture is the science behind the design and construction of buildings and structures. The word "architect" is of Latin derivation, from a word that means "master builder." Architects design the buildings and structures in which we live, work, and play. The architecture we experience every day would not be possible without the vision of the architect combined with the structural expertise of the engineer. The architect creates the overall vision of the way the building will look and how it will be used. It is the job of the engineer, specifically a structural engineer, to make the building stand up, ensuring its safety and stability. In addition to the architect and the engineer, there are many other people, such as model makers and draftspeople, who take part in the design process from beginning to end.

- **Ask your students to describe an experience they have had as part of a team of people.**
- **Have them imagine the steps involved in designing and constructing a building. Ask them what choices need to be made at each step.**
- **Ask your students what kinds of tools and materials architects and engineers might need to do their work.**

As a follow-up to your discussion, consider contacting your local chapter of the American Institute of Architects to locate an architect in your community and invite him or her to your classroom to speak with your students. Visit Red Studio (www.moma.org/redstudio), MoMA's Web site for teenagers, which features video footage of teens interviewing artist and architect Vito Acconci.

THINKING ABOUT TALL BUILDINGS

The history of tall buildings dates back hundreds, even thousands, of years, during which architects and engineers have attempted to build ever-taller structures, from ancient pyramids and cathedrals to modern-day **skyscrapers**. Over the years, advances in engineering and materials have enabled architects to design and create different types of tall buildings commonly used for offices accommodating many occupants, but also housing hotels, apartments, hospitals, or museums. Structures change over time, responding to the environment as well as to the needs of the people who inhabit them.

The term "skyscraper" was coined in the 1880s after the first tall buildings were constructed in Chicago, Illinois, where the thriving urban environment's population boom forced architects to design buildings in the only direction where there was space: up! From there, New York followed suit. For the first half of the twentieth century, only New York and Chicago had skyscrapers; in the second half of the century, skyscrapers were built in cities outside the United States and can now be found all over the world. This guide features skyscrapers designed for urban environments both in the United States and abroad.

- **Ask students how they would identify their neighborhood: urban, suburban, or rural? Have them name some characteristics of the neighborhood to support their responses.**

- **Ask students to name the types of buildings in their neighborhood and describe them.**

LESSONS

LESSON ONE: A New Way of Looking

IMAGE ONE: Berenice Abbott. American, 1898–1991. *South and DePeyster Streets, Manhattan, November 26, 1935.* 1935. Gelatin silver print, 9⅛ x 7⁹⁄₁₆" (23.2 x 19.2 cm). The Museum of Modern Art, New York. Gift of the Robert and Joyce Menschel Foundation

IMAGE TWO: Berenice Abbott. American, 1898–1991. *Exchange Place, New York.* 1933. Gelatin silver print, 9⁵⁄₁₆ x 2½" (23.7 x 6.4 cm). The Museum of Modern Art, New York. Anonymous gift

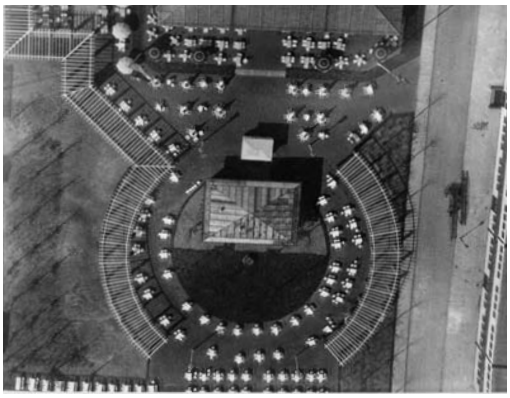

IMAGE THREE: László Moholy-Nagy. American, born Hungary, 1895–1946. *From the Radio Tower, Berlin.* 1928. Gelatin silver print, 13 ¹¹⁄₁₆ x 10¼" (34.8 x 26 cm). The Museum of Modern Art. Anonymous gift

INTRODUCTION

During the early part of the twentieth century, there were many advances in science and technology that greatly influenced the everyday lives of ordinary people. Cities started to grow and change, responding to technological advances such as the development of the railroad, the introduction of machinery in agricultural practices, the decrease in demand for manual labor, the rise of urban industries, and the placement of factories in suburbs outside the city. In response to these dramatic changes, artists developed new ways of observing and documenting their environments. Berenice Abbott and László Moholy-Nagy were two such artists. Through the **medium** of photography, they invited viewers to question what they saw in images of the built environment. In order to do this, they needed to create a new way of looking at this environment, highlighting things that people might not ordinarily see. One advance that helped in this endeavor was the replacement of early cameras, which were large and bulky objects, with lighter, hand-held versions.

LESSON OBJECTIVES

- **Students will compare and contrast works of art.**
- **Students will learn observational techniques.**
- **Students will become familiar with buildings in their community.**
- **Students will learn the terms foreground, middle ground, and background, as well as terms for describing objects such as line, color, shape, form, and pattern.**

INTRODUCTORY DISCUSSION

- **Introduce the terms line, color, shape, form, and pattern.**
- **Have students look out the classroom window and describe what they see. List the words they generate on the board. Have them look out the window again, this time covering one eye. Ask them to discuss how and why the same objects look different.**
- **Ask students to think about any recent changes that have been made in their neighborhoods. Ask them what impact these projects have had on the neighborhood.**

IMAGE-BASED DISCUSSION

- **Have your students look carefully at Abbott's *South and DePeyster Streets, Manhattan* and describe what they see, using the vocabulary they have learned.**

Abbott spent several years documenting scenes in New York City. This photograph comes from one of her series of works on the subject.

- **To help students explain what they are seeing, introduce the terms foreground, middle ground and background: There is a vendor and his cart in the foreground, a tenement building in the middle ground, and a skyscraper in the background. Point out that the size of the buildings changes from foreground to background and that the scene might look different from another viewpoint.**

- **Have students compare the sizes of the buildings in the foreground and the background. The windows in the tenement and the taller building to its left appear to be the same size. Ask them if those windows are the same size in real life. Discuss why or why not.**

- **Next, have your students look carefully at Abbott's *Exchange Place, New York*.**

- **Ask students to consider where the photographer was standing when she took this photograph. Have them imagine that Abbott was standing on the top floor of one of the tall buildings. Discuss what that photograph might look like.**

In this photograph, Abbott chose to focus on the visual effect that is created when skyscrapers are built close together. The buildings create extremely deep, narrow spaces that resemble canyons, a structure found in natural environments.

- **Ask students to describe the view in the image. Have them imagine what it would be like to be in this place. Ask them to describe what they would see and hear.**

- **Ask them where they think Abbott was standing when she took the photograph.**

- **Ask students if the viewpoint in this photograph is similar to the viewpoint in the first photograph they looked at. Discuss why or why not.**

These photographs were part of a series commissioned from Abbott by the Federal Arts Project, a program that was established by President Franklin Roosevelt in the 1930s to provide work for artists during the Depression and to expose the public to art and its importance to society. Abbott worked as a photographer in Paris before moving to New York City. When she first arrived in the United States, she was surprised by the unbelievable wealth and the heartbreaking poverty she saw in the streets of New York, and also by the contrasts created by advances in technology and construction. She saw cars, trains, and trolleys on the streets among horse-drawn milk carts. There were new skyscrapers towering over smaller, more dilapidated buildings.

- **Have your students look carefully at Moholy-Nagy's *From the Radio Tower, Berlin.***

- **Ask them to describe in detail the lines, shapes, and patterns they see.**

- **Ask them to imagine where Moholy-Nagy was when he took this photograph. Have them discuss the possibilities with a classmate and report their findings.**

Moholy-Nagy stood at the top of a radio tower in Berlin, Germany, to take this photograph in 1928, two years after the tower was built. The tower is approximately 493 feet (150 meters) tall. The viewpoint the photographer used—looking down from a position above everything else—is called an aerial **perspective**.

- **Ask students whether the photograph conveys a sense of height. Discuss why or why not.**

- **Ask them why they think the artist chose an aerial perspective.**

With this approach, Moholy-Nagy has focused our view in a very specific way. Unlike Abbott's photographs, this one illustrates a view from above. The viewpoint forces us to experience the height as if we were actually standing in the same place Moholy-Nagy was when he took the photograph. The result is not only a sense of height, but also a view of what the tower's surroundings look like from above.

- **Have students hold their right hands over their right eyes and look straight ahead. Have them move their hands farther away from their eyes and describe how the size and the shape of the objects they see change as their hands change position. Ask them if the actual size of their hands is changing and what else might explain the illusion.**

- **Have them imagine what it would be like to stand where Moholy-Nagy stood. Ask them what else they think he saw, beyond what is recorded in the photograph.**

In addition to being a photographer, Moholy-Nagy was also a painter and a teacher at the **Bauhaus**, an art and design school in Germany.

ACTIVITIES

Design Journal

For one week, have your students create a journal to record their experiences of the buildings they use over the course of each day. Have them consider the following:

- **How tall are the buildings?**

- **Do their designs make them stand out from or blend in with the rest of the neighborhood?**

- **What views do they offer from the windows?**

- **What materials are the different buildings made of?**

- **Does the design of each building correspond with its use? Why or why not?**

This journal is meant to record students' personal and individual experiences. Encourage them to make sketches, attach images cut out from magazines and newspapers, and personalize the journal in a way that clearly identifies it as his or her own. These journals can be made very easily with sturdy paper and a stapler, or regular notebooks can be decorated.

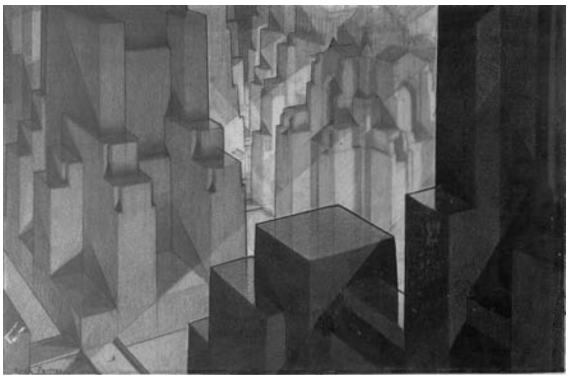

IMAGE FOUR: Hugh Ferriss. American, 1889–1962. *Buildings in the Modeling.* Aerial perspective. 1924. Conté crayon on board, 12½ x 32" (31.8 x 81.3 cm). The Museum of Modern Art, New York. Gift of Mrs. Hugh Ferriss, 1966

IMAGE FIVE: Heinz Schulz-Neudamm. German, 1899–1969. *Metropolis.* 1926. Lithograph, 36½ x 81" (92.7 x 205.7 cm). The Museum of Modern Art, New York. Gift of UFA (Universum-Film-Aktiengesellschaft)

IMAGE SIX: E. McKnight Kauffer. American, 1890–1954. *Metropolis.* 1926. Gouache on paper, 29½ x 17" (74.9 x 43.2 cm). The Museum of Modern Art, New York. Given anonymously

INTRODUCTION

At the turn of the century, technology and mechanical engineering advanced at a rapid pace. Society quickly moved away from handmade objects and toward machine-based production. This changed the way everything was produced, including buildings. To accommodate the growing population, architects started designing taller structures that could house more people and more activities. Some people believed that these tall buildings would be the ideal structures with which to create a **utopian** society; others worried that, over time, human beings would be replaced by machines and buildings. Architects and artists responded to these hopes and anxieties not only by documenting what they saw, but also by rendering **conceptual** drawings of what these future cities might look like.

LESSON OBJECTIVES

- **Students will become familiar with the industrial developments of the twentieth century and how they affected architecture and society.**
- **Students will explore the development of urban environments.**
- **Students will compare and contrast graphics and drawings.**
- **Students will create works of art that document their neighborhoods from their own perspectives.**
- **Students will learn the terms utopian and conceptual.**

INTRODUCTORY DISCUSSION

- **Give your students some background information about the industrial developments of the twentieth century and their impact on the people who were alive then. To further establish the idea, visit the Skyscraper Museum's Web site (www.skyscraper.org) for a visual timeline of tall buildings.**
- **Have students describe any new technology they can think of, such as a computer program or communication systems such as cell phones and e-mail. Ask students to consider the effect these inventions have on their lives and whether it is a positive or negative effect.**
- **Have students imagine a world without elevators, refrigerators, or cars. Discuss what their lives would be like, whether they would be different, and why or why not.**

IMAGE-BASED DISCUSSION

- **Begin by showing your students Ferriss's *Buildings in the Modeling.***
- **Ask your students to describe what they see in this drawing. It may be helpful for them to imagine that they are describing the drawing to someone who cannot see it.**
- **Using the vocabulary (line, shape, and form) from previous lessons, give your students some background information on Ferriss's drawing, while continuing to discuss what they see.**
- **Ask students whether they think it is a real or imagined place.**
- **Ask them what material they think the artist used to make this drawing and why they think he chose it.**

This is a **conceptual** drawing of a city scene—a hypothetical view of a city. Ferriss used Conté crayon, a kind of pastel that is rich in pigment and very smooth, to create this drawing. The richness of the Conté crayon helped him capture a particular mood or feeling.

- **Ask students to imagine what it would be like to step into this place. Ask them what they would see and hear and how they would feel—excited, scared, or bored.**

- **Have them write a first-person narrative of their imagined experiences.**

Ferriss often drew images of an endless series of skyscrapers hovering and surrounding a city's inhabitants. In some cases he was drawing what he actually saw; in others, he was creating imaginary cities of the future.

- **Before you show your students Neudamm's *Metropolis*, have them think about what life might be like one hundred years from now. Have them consider whether it would it be different and how. Ask them what the people and the cities would look like. After they look at Neudamm's poster, have them compare their answers to what they see.**

- **Have them describe what they see in the poster's foreground, middle ground, and background.**

This is a poster advertising *Metropolis*, a 1926 film directed by Fritz Lang. The movie takes place in 2026, one hundred years from when it was made.

Like Ferriss, Lang created art that reflected what people feared would happen to the world. He chose the medium of film to imagine the year 2026. In *Metropolis*, machines have taken over the world. The setting is a futuristic **cityscape** in which things appear distorted. This was a choice the director made; by creating a place that seems familiar but isn't, he creates a foreboding mood.

- **Next, have your students look at Kauffer's *Metropolis* poster.**

Edward McKnight Kauffer was a painter and designer living and working in England during the early part of the twentieth century. He eventually gave up painting to focus exclusively on commercial art and design. He created graphic posters for many companies and organizations, including the London Underground and the Film Society, an organization that he founded in 1925.

- **Have your students describe in detail what they see in the poster's foreground, middle ground, and background.**

In 1926, Kauffer created posters based on the film *Metropolis*. In this preparatory study, he was interested in exploring the relationship between man and machine, as were Lang and Ferriss, and chose to illustrate this through the medium of graphic design.

- **Ask students to describe how Kauffer uses form, color, and type design (the specific shapes of the letters) to convey his ideas.**

- **Have your students compare Kauffer's poster to Neudamm's *Metropolis* poster.**

- **Have your students choose and write down five words that best describe each image, concentrating on the stylistic choices the artists made. Older students should be encouraged to use adjectives instead of nouns.**

- **Next, have them write down five words that best describe the mood conveyed in each image.**

To extend the lesson, obtain a copy of the film *Metropolis* and show it to your students. After viewing the film, have them compare the two posters again. Ask them to discuss which image most effectively conveys the mood or feeling of the film. Have them support their claims with visual evidence.

ACTIVITIES

Neighborhood Study

Lead your students on a walking tour of the neighborhood. Include perspectives from worm's eye to bird's eye—trying to look at the neighborhood from different places and heights to allow for multiple viewing perspectives. Have them observe and record their experiences in their design journals. Ask them to document the sights, sounds, and smells of the neighborhood, as well as the buildings, with drawing, writing, and photography (Polaroid, digital, or disposable cameras can be used). Students should pay close attention to building height and size. To provide primary source material for their studies, students may interview people from the community about how the neighborhood has changed over the years and which buildings they feel are most important. When you return to the classroom, have each student create a two-dimensional presentation based on their observations from the walk. This can take the form of maps, writing, collages, or drawings. Have the students post their work around the classroom and invite the rest of the school and community members to come see it. If you would like to extend this project, consult the For Further Consideration section of this guide for information about a participatory design project that the students can do as a group.

Have your students consider the following when compiling research for their study:

- **What different types of buildings are in the neighborhood? Row houses, skyscrapers, single-family homes?**
- **What are they made of? Brick, steel, concrete, other materials?**
- **What are the different activities that take place there? Working, shopping, playing?**
- **What is missing from the community?**

IMAGE SEVEN: H. Blancard. Untitled (construction of the Eiffel Tower). February 10, 1888. Platinum print, 6 1/8 x 8 11/16" (15.6 x 22.1 cm). The Museum of Modern Art, New York. Purchase

IMAGE EIGHT: H. Blancard. Untitled (construction of the Eiffel Tower). April 1888. Platinum print, 6 1/8 x 8 11/16" (15.6 x 22.1 cm). The Museum of Modern Art, New York. Purchase

IMAGE NINE: H. Blancard. Untitled (construction of the Eiffel Tower). June 1888. Platinum print, 8 15/16 x 6 1/8" (22.4 x 16 cm). The Museum of Modern Art, New York. Purchase

IMAGE TEN: H. Blancard. Untitled (construction of the Eiffel Tower). August 1888. Platinum print, 8 15/16 x 6 1/8" (22.4 x 15.6 cm). The Museum of Modern Art, New York. Purchase

IMAGE ELEVEN: Fairchild Aerial Surveys, Inc. *The Mount Everest of Manhattan: The Silvered Peak of the Chrysler Building.* 1930. Gelatin silver print, 8 3/4 x 6 13/16" (22.2 x 17.3 cm). The Museum of Modern Art, New York. The New York Times Collection

INTRODUCTION

Cities were growing quickly at the turn of the twentieth century, and as a result architects began to design buildings with a vertical orientation. In 1853, Elisha Graves Otis introduced the world's first safety elevator in Yonkers, New York. This invention changed the shape of the modern world. Before then, buildings could not be built taller than five or six stories, because there was no way to transport people and objects to the higher floors; the invention of the elevator allowed buildings to rise beyond those limitations. The Otis Elevator Company is still in existence, providing elevators for many of the buildings we use every day.

In the late-nineteenth century, engineers began experimenting with new ways of using iron and steel. Traditionally these materials were used for transportation structures such as bridges, train tracks, and railway stations. Through trial and error, engineers developed steel skeletons made of vertical columns and horizontal beams to support tall buildings. The Home Insurance Building (1884–85) in Chicago was the first to be constructed with a complete steel-frame structure. Visit the PBS Web site for the television program *Building Big* (www.pbs.org/wgbh/buildingbig) to learn more about this building. These design innovations were also used in the construction of famous structures such as the Eiffel Tower, the Statue of Liberty, and the Brooklyn Bridge.

LESSON OBJECTIVES

- **Students will explore the inventions and material innovations that made the construction of skyscrapers possible.**
- **Students will become familiar with the roles of architects and engineers.**
- **Students will make connections between architecture and history.**
- **Students will learn the terms ziggurat and cladding.**

INTRODUCTORY DISCUSSION

- **Have students imagine what everyday life would be like if elevators had never been invented. Have them consider whether life would be different. Discuss why or why not.**
- **Ask students to imagine what a world without tall buildings would be like.**
- **Have students turn their ideas into a piece of creative writing.**

IMAGE-BASED DISCUSSION

- **Show your students the four photographs of the Eiffel Tower being constructed.**
- **Ask students to imagine what it would have been like to be a citizen of Paris while the tower was being constructed. Ask them if they think everyone liked the tower when it was first built.**
- **Have students imagine what purpose the tower might have served. Ask them how they think people traveled up and down it.**

At the time of its construction, the Eiffel Tower, at 1,063 feet (324 meters), was the tallest structure in the world. It was named after Gustave Eiffel, the founder of a company specializing in structural metalwork (he is also known for designing the Statue of Liberty's structural support). The company's primary focus was building structural supports for bridges and railway stations. The Eiffel Tower, which became an icon of modernity, was not surpassed in height until 1929, when the Chrysler Building was erected in New York City.

The tower, equipped with an Otis elevator, was built for the World's Fair of 1889 and was originally going to be demolished after the fair; instead, it became a defining feature of the Paris **cityscape**.

- **Next, show your students the Fairchild Aerial Surveys photograph of the Chrysler Building.**

- **Have them describe what they see using the vocabulary and concepts (such as line, shape, and form) from previous lessons.**

- **Ask them to write down five words that describe what they see in the photograph.**

- **Next, have them look at the top of the building. Ask them if the shape they see there reminds them of other forms or buildings they have seen.**

The Chrysler Building, which served as the headquarters for the Chrysler Motor Company, was designed by architect William Van Alen. At the time of its construction, the building was the tallest structure in the world at 1,046 feet (319 meters) high. The building features a steel skeleton covered with cladding—a skin of brick and metal—much like our own bodies, which have skeletons to support them and skin to protect them. The upper section of the building was styled in a **ziggurat** or "wedding cake" form. This style of building combines a pyramid shape with successively receding stories and was used as far back as the temple towers of the ancient Assyrians and Babylonians.

- **Next, have your students examine the surrounding structures and compare their size to that of the Chrysler Building.**

At the time of its construction in 1930, the Chrysler Building was the world's tallest structure and the most-decorated tall building anywhere. The building was adorned with large steel gargoyles and designs that recalled car parts such as hubcaps and mudguards. Automaker Walter P. Chrysler was interested in a building that reflected the technological advances of modern times. The design provoked a strong response from the general public; some people found it frivolous compared with the more sedate-looking buildings being constructed at the time. Legend has it that competition among architects to create the world's tallest structure led Van Alen to construct the 185-foot (56-meter) spire inside the building, keeping it hidden until the very last moment. Another myth is that the spire was designed as a dock for blimps.

- **Have your students find the spire in the photograph.**

- **Have them compare the style of the building to surrounding buildings in the neighborhood. Ask them what their opinions of the design are, whether they like it, and why or why not.**

The Chrysler Building was not the world's tallest structure for long. It was soon surpassed by the Empire State Building, which was completed the following year.

ACTIVITIES

Both the Eiffel Tower and the Chrysler Building were landmark structures of their time. Have your students research other significant constructions from the past, such as those of the Egyptians, as well as modern structures of the twentieth and twenty-first centuries.

Consult the online resources section of this guide to research more images of the Chrysler Building. Have your students pay close attention to the sculptural ornamentation that was added to the building after construction was finished. Print out 8½-x-11-inch copies of the image of the Chrysler Building and have your students design and create a new skin and ornamentation for the building with collage; provide paper in a variety of colors and textures to allow them to explore a range of possibilities. Have them share their work with a classmate and discuss what their new designs would look like towering high over the New York City skyline.

Give your students a hands-on structural-engineering experience using toothpicks, string, and gumdrops. Have them experiment with ways to make their structures stable by pushing together the materials (to create **compression**) and pulling them apart (to create **tension**). Some materials, such as bricks, are strong when compressed, and others, such as steel cables, provide tension, which keeps the building's elements from falling down.

IMAGE TWELVE: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. View of north side. Photo: Hedrich Blessing. The Museum of Modern Art, New York

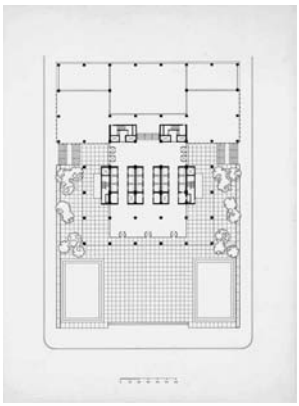

IMAGE THIRTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. Site and floor plans. Ink on illustration board, 27½ x 20" (69.9 x 50.8 cm). The Mies van der Rohe Archive

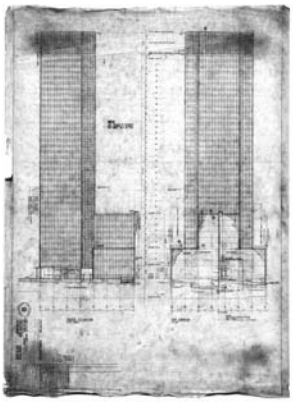

IMAGE FOURTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. North and west elevations. Pencil on ozalid, 37¼" x 52" (94.6 x 132.1 cm). Revised February 18, 1957. The Mies van der Rohe Archive

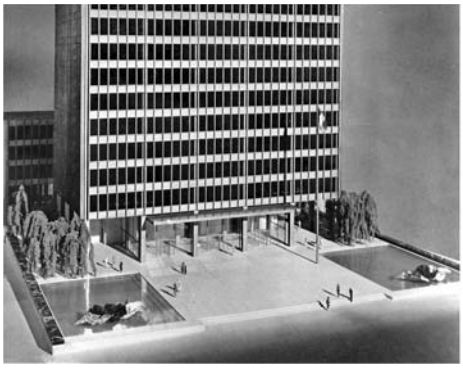

IMAGE FIFTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. Model, aerial view of plaza and lower floors. Photo: Louis Checkman. The Museum of Modern Art, New York

IMAGE SIXTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. Construction photograph showing steel frame. Photo: House of Patria. The Mies van der Rohe Archive. Gift of the architect

IMAGE SEVENTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Seagram Building, New York. 1954–58. View, office interior. Photo: Ezra Stoller. Esto Photographics

IMAGE EIGHTEEN: Ludwig Mies van der Rohe. American, born Germany. 1886–1969. Brno Chair. 1929–30. Chrome-plated steel and leather, 31½ x 23 x 24" (80 x 58.4 x 61 cm). The Museum of Modern Art, New York. Gift of Knoll International, Inc., USA

INTRODUCTION

In 1954, Joseph E. Seagram & Sons announced that in celebration of its hundreth anniversary the company would build a corporate office building in New York City to house its headquarters. The company purchased land on the east side of Park Avenue between 52nd and 53rd streets as the site for the building. Architects Ludwig Mies van der Rohe and Philip Johnson, who at the time was director of the Department of Architecture at The Museum of Modern Art, were commissioned to design the building, which was completed in 1958. The Seagram Building stands 525 feet (160 meters) tall and has forty-two floors, and the total budget for the project was $45 million. In 1983, the company sold the building to Lehman Brothers, a prominent New York financial investment firm, for $375 million. The Seagram Building (as it is still known) became an icon of modern construction, setting the style for skyscrapers in New York for years to come.

LESSON OBJECTIVES

- **Students will explore the design process through photographic documentation and architectural plans and elevations.**
- **Students will use primary-source documentation to explore the history of a building.**
- **Students will compare and contrast works of architecture and industrial design.**
- **Students will become familiar with the work of Mies van der Rohe and the International Style movement.**
- **Students will learn the terms plan, elevation, cantilever, ornamentation, and scale.**

INTRODUCTORY DISCUSSION

Mies was a prolific architect, designing homes, office buildings, banks, museums, and school buildings in the United States, Canada, and Europe. The youngest of five children in Aachen, Germany, Mies worked in his father's stone-cutting shop until he was thirteen years old, gaining valuable experience that he would later draw on as an architect. When he was nineteen, he moved to Berlin to work with Peter Behrens, an architect who specialized in the design of factories and houses. It was during this time that Mies received his first commission, a private residence for a professor at the university in Berlin. From 1930 to 1933, Mies was

the director of the **Bauhaus**, a school for art, architecture, industrial design, and crafts that was founded in 1919 in Weimar, Germany, and moved in 1928 to Dessau. Mies's position at the school coincided with the rise of Adolf Hitler, who severely restricted many freedoms and activities, including cultural and artistic production. Under political pressure from the Nazi regime, which was staunchly opposed to modern art and architecture, Mies was forced to close the school. In 1938, he came to the United States, where he became director of the architecture department at the Armour Institute of Technology (now the Illinois Institute of Technology). He died in Chicago, Illinois, in 1969.

- **As a class, discuss what the term "modern" means.**

"Modern" can mean "related to current times," but it can also indicate a particular set of ideas about form and structure that, at the time of their development, were new and experimental. "Modern architecture" is a term that refers to buildings designed in a style that first appeared in the early-twentieth century and continued through 1970.

IMAGE-BASED DISCUSSION

- **Begin the lesson by showing your students the photograph of the Seagram Building, view of north side (Image 12).**

- **Have them describe the shape of the building.**

Mies's works are often referred to as belonging to the **International Style** of architecture. Some of the distinguishing features of the International Style are sleek, simple designs; flat surfaces and rectangular shapes; and the use of materials such as glass and steel. This term was coined for a 1932 exhibition at The Museum of Modern Art called *Modern Architecture: International Exhibition*. It was an exhibition that ignited the public's interest in modern architecture.

- **Share with your students the definition of the International Style. Ask students if the design of the Seagram Building reflects the characteristics of the International Style. Discuss why or why not.**

- **Continue the exploration of the Seagram Building by showing your students the site and floor plans and the north and west elevations of the building (Images 13 and 14).**

Before construction can begin, architects and engineers create two-dimensional plans and drawings of the design and build a three-dimensional **model** of the building to clarify their intention for it. This elevation is a side view of the north and west sides of the Seagram Building. Both of these sides are visible in the photograph. The plan is a two-dimensional drawing from a bird's-eye view.

Plans and elevations serve as orientation tools for architects and engineers as the building is being constructed. Once they have refined their drawings and made all the necessary revisions, they will create a master (finished) set to serve as the official record of the project.

- **Show your students the photograph of the model of the building (Image 15).**

The three-dimensional model of the building was constructed to **scale**, according to the architect's instructions.

- **Ask students to describe what they see.**

- **Have them compare the plan and elevation to the photograph. Ask them to locate in the elevation the shapes that they see in the photograph.**

- **Ask students why they think it's necessary to create two- and three-dimensional versions of a design before it is built.**

- **Have students think about how this practice informs the final construction of the building.**

- **Show your students the construction photograph that displays the steel frame of the building (Image 16).**

This photograph was taken as the building was being built. Construction photographs, along with the plans, elevations, and models, serve as documentation of the entire project from start to finish.

- **Have students compare the construction photograph to the plan and elevation drawings.**

- **Ask them which features in the plan correspond to those in the photograph.**

- **Ask them whether all of the features in the plans are visible in the construction photograph. Discuss why or why not.**

- **Have them look at the front (west) side of the building and ask them what they see.**

In Mies's design, the building is set back ninety feet from the sidewalk, creating a plaza in front of the building. This allows people to see the building from multiple viewpoints—they can stand back and admire it or come right up close—and provides space for a flow of people and activity between the structure and the surrounding environment.

- **Show your students the photograph of the office interior (Image 17).**

- **Ask them what kinds of activities they think happen in this space.**

The Seagram Building was designed primarily as an office building, which was the most common function of skyscrapers at the time, but Mies expanded the building's use by including two restaurants and an apartment building. Both architects, Mies and Johnson, contributed to all aspects of the design, including the development of signage and way-finding throughout the building.

- **Have students make a list of all the objects they see in the photograph of the office interior. Have them gather in small groups to compare their findings with those of other students.**

- **Now show your students the Brno Chair (Image 18).**

- **Ask them if they can locate the chair in the photograph of the office interior.**

All of the objects in the office were designed to be mass-produced, including the Brno Chair. The chair was designed in 1930 for a house, also designed by Mies, in Brno, Czechoslovakia (now the Czech Republic), but it was intended for both residential and office use. The tubular steel frame of the chair is based on a **cantilever** and is a familiar style today, but at the time it was considered avant-garde. This chair is still in production and can be purchased through furniture dealers.

- **Have students compare the furniture to the building itself. Ask them what common design elements or characteristics they see.**

- **Ask students if the Brno Chair fits the ideals of the International Style movement. Discuss how.**

Nonstructural glass walls were hung on the steel frame of the Seagram Building. The glass does not contribute to the building's stability; instead, it is used like a wrapping. Mies liked to use glass, which provides light, transparency, and reflection, and made conceptual plans for many glass skyscrapers that were never built. (He didn't know it at the time, but glass is a material that would later be used in developing **sustainable** architecture.) Mies had wanted the skeleton of the building to be visible, but building codes dictated that structural steel could not be exposed because it was a fire hazard. Instead, he used nonstructural bronze I-beams to imply structure.

- **Ask your students if they can locate the I-beams in any of the images.**

The beams are visible from the outside, running vertically from the very top of the building to the bottom. Mies hoped that people would look at the building and see the illusion of structure. In keeping with his less-is-more ideal, Mies used colored glass and the skeletal structure in place of applied **ornamentation**.

- **Ask students if they feel Mies accomplished his goal of creating an illusion of structure.**

ACTIVITIES

Have your students create plan and elevation views of the classroom. They can use simple shapes to develop a key (a map legend) to identify various details, such as furniture, windows, and doors. They can introduce the concepts of scale and **ratio** by using graph paper and assigning a ratio of one box to one foot. Before they begin to draw, ask students to decide, as a group, what kind of information should be included in their maps. You can expand this lesson by asking the students to map rooms in their homes. Consult the information included in the Bibliography and Resources section of this guide for further information about plans and elevations.

As a follow-up, students can participate in You Design, an interactive activity featured on the Web site Red Studio (www.moma.org/redstudio), in which students design a school environment.

IMAGE NINETEEN: Ken Yeang. Elephant and Castle Eco Towers, London. Project: 2000. Section plan, preliminary scheme. 2000. Computer-generated model, dimensions variable. T. R. Hamzah & Yeang

IMAGE TWENTY: Ken Yeang. Elephant and Castle Eco Towers, London. Project: 2000. Model, from above. 2000. Computer-generated model, dimensions variable. T. R. Hamzah & Yeang

IMAGE TWENTY-ONE: Rem Koohlaas and Ole Scheeren. Central Chinese Television (CCTV) Tower Beijing. Design: 2002–4. Projected completion: 2008. View of building's facade. 2002–4. Computer-generated model, dimensions variable. Office for Metropolitan Architecture

IMAGE TWENTY-TWO: Rem Koohlaas and Ole Scheeren. Central Chinese Television (CCTV) Tower Beijing. Design: 2002–4. Projected completion: 2008.View within Beijing. 2002–4. Computer-generated model, dimensions variable. Office for Metropolitan Architecture

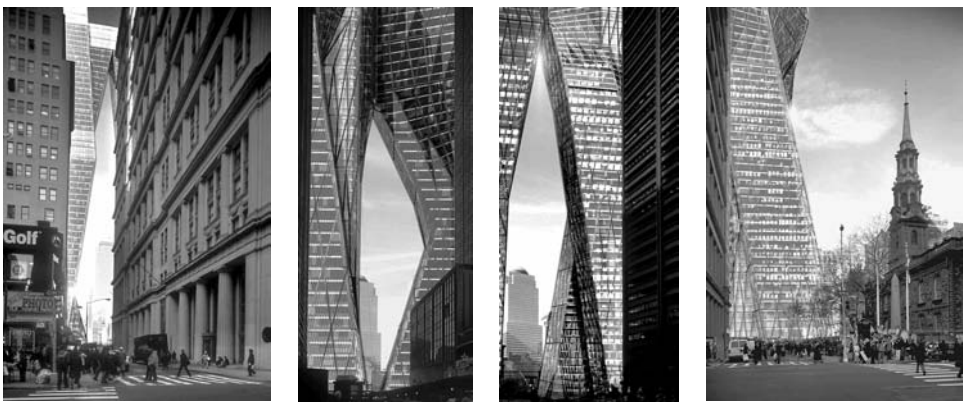

IMAGE TWENTY-THREE: United Architects (Ben van Berkel, Caroline Bos, Peter Frankfurt, Mikon van Gastel, Kevin Kennon, Greg Lyn, Farshid Moussavi, Alejandro Zaero-Polo, Jesse Reiser, and Nanako Umemto). World Trade Center, New York. Project: 2002. Views from Dey, Cortland, Fulton, and Liberty streets. 2002. Computer-generated model, dimensions variable. United Architects

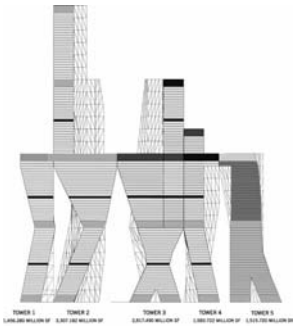

IMAGE TWENTY-FOUR: United Architects (Ben van Berkel, Caroline Bos, Peter Frankfurt, Mikon van Gastel, Kevin Kennon, Greg Lyn, Farshid Moussavi, Alejandro Zaero-Polo, Jesse Reiser, and Nanako Umemto). World Trade Center, New York. Project: 2002. Section. 2002. Computer-generated model, dimensions variable. United Architects

IMAGE TWENTY-FIVE: United Architects (Ben van Berkel, Caroline Bos, Peter Frankfurt, Mikon van Gastel, Kevin Kennon, Greg Lyn, Farshid Moussavi, Alejandro Zaero-Polo, Jesse Reiser, and Nanako Umemto). World Trade Center, New York. Project: 2002. Detail of sky lobby. 2002. Computer-generated model, dimensions variable. United Architects

INTRODUCTION

In the second half of the twentieth century and the beginning of the twenty-first, there was a shift in thinking about architecture. Some people believed that as structures grew taller and taller, they got more out of touch with the life of the city below. The terrorist attacks of September 11 had a tremendous impact on our relationship to tall buildings, and the controversy about what would replace the towers on the World Trade Center site has revealed the complexities of the design process. The focus on form, function, and beauty has been tempered by the need for safety.

Visit the Web site for The Museum of Modern Art's 2004 exhibition *Tall Buildings* (www.moma.org/exhibitions/2004/tallbuildings) or consult the exhibition's accompanying publication to support and provide content for this lesson. In addition, the site and publication for the Museum's exhibition *Safe: Design Takes On Risk* (www.moma.org/exhibitions/2005/safe) explores issues of safety in the design of products and environments. The buildings presented in this lesson suggest that architecture has moved away from simplicity and toward elaborate sculptural forms that are programmatically complex, environmentally friendly, and safe. Images 19 and 20 profile a development project that has not yet been constructed. Images 21 and 22 are currently under construction; images 23 and 24 are one of several conceptual plans submitted for the World Trade Center site.

LESSON OBJECTIVES

- **Students will learn about design issues including sustainability, safety, and use.**
- **Students will explore how architects are using green technologies in today's buildings.**
- **Students will investigate how the built environment affects the natural environment.**
- **Students will investigate how the natural environment affects the built environment.**

INTRODUCTORY DISCUSSION

Advances in science and technology have increased exponentially in the twenty-first century. With the development of aerospace engineering, computer-aided manufacturing, and advance prototyping, architectural practices have changed, allowing for more complex design. According to Maslow's Hierarchy of Needs, a psychological study, shelter is the most urgent human need, followed by safety.

- **Ask students to consider the importance of shelter in their lives.**

- **Ask students if they feel comfortable and safe in the buildings they interact with over the course of the day.**

IMAGE-BASED DISCUSSION

- **Show your students the computer-generated images of Elephant and Eco Towers.**

The **models** for the Elephant and Castle Eco Towers are **conceptual**, meaning that they represent an idea for a structure that has not yet been built. Many architect's models never lead to actual buildings. This plan comprises two towers, one 459 feet (140 meters) high, and the other 240 feet (73 meters) high.

The towers were designed by Ken Yeang, a Malaysian architect. He calls his design a "city in the sky," a structure in which he attempts to offer all the conveniences of a typical city block.

- **Have students describe what they see.**

- **Ask students to come up with a list of amenities that might be found in one city block. Write them on the board.**

Yeang's conceptual plan includes housing, restaurants, parks, playgrounds, shops, and sports facilities. In the center, between the towers, there is a landscaped and weather-protected space. The architect intended this to be a place where people of all ages and backgrounds could live, shop, and relax.

- **Ask students if they can locate where these conveniences and features might be.**

- **Ask students what activities they imagine taking place on the lower, middle, and upper floors.**

- **Discuss as a group how the concept of sustainability can be applied to the environment of this building.**

With the intention of creating a "greener" (more earth-friendly) structure, this project was designed to power its own systems (heating, cooling, etc.) with passive, low-energy systems such as solar energy, supplemented when necessary with traditional mechanical systems for heating and cooling. In addition, the building faces south to maximize its exposure to sun and wind throughout the year.

- **The architect wanted to design buildings that are environmentally and socially sustainable. Break your class into two groups, assigning to each group one of the two ideas, social or environmental sustainability. Ask one student in each group to moderate a discussion about whether Yeang's design meets the criteria for sustainability.**

- **Have students draw a shape or form that is visually pleasing or exciting to them. Ask them to describe the shape. Have them imagine that this shape will be turned into a new 768-foot (235-meter) building in their town.**

- **Show your students the computer-generated images of the Central Chinese Television (CCTV) Tower.**

- **Have students discuss with a partner the possible uses for a building like this.**

- **Ask students if the building's use explains its shape. Discuss why or why not.**

This building will be the headquarters for Central Chinese Television, and will house administration, news, broadcasting, and production facilities.

Rem Koolhaas and Ole Scheeren, the architects, designed the building in the shape of a continuous loop in order to counteract the traditional corporate model of top-down hierarchy. The loop also integrates the heating and cooling systems into the building in a way similar to how blood flows through arteries in the human body. The elevators are designed to move people vertically and laterally through the building.

- **Have students imagine what it would be like to live in Beijing and witness the construction of this building.**

- **Have students imagine how this building will influence the surrounding neighborhood. Ask them if they think it will it have a positive or negative effect.**

- **Show your students the computer-generated images of the World Trade Center project.**

- **Lead a brief discussion about the juried competition to determine a design for the World Trade Center site. Consult the Web site of the Lower Manhattan Development Corporation (www.wtcsitememorial.org), which oversaw the competition. Have the students look at these images and then describe what they see. Write their answers on chart paper and post the list around the room.**

This concept for the World Trade Center site was submitted by United Architects, a team of architects who have offices in the United States and abroad. The architects worked together on the design, which is based on series of five linked towers containing over ten million square feet of interior space and standing 1,620 feet (494 meters) high at its tallest point. The towers would be built above a memorial space, a transportation hub, and a retail complex. The design also includes a public space or "sky park" (not seen in these images) at the top of the towers. The architects designed this space with the intention of giving building occupants and visitors a restored feeling of safety in tall buildings, as well as a sense of wonder.

- **Ask students about their experiences working in teams. Have them consider what was positive about the experience, what was challenging, and what the benefits are of working in groups.**

- **Ask students to imagine what it would be like to play or relax in a space 1,620 feet above the ground. Ask them whether they would feel safe and comfortable. Discuss why or why not.**

- **Ask them if they think that this design will have a positive or negative effect on the surrounding environment. Discuss why or why not and have them support their assertions with visual evidence.**

ACTIVITIES

Ask your students to become critics and write an article about one of the buildings in this lesson, taking into consideration their own opinions about the building they have selected. They can find examples of reviews in *The New York Times* and other publications.

Ask your students what they like best about the building they have chosen to write about. As part of their responses, they should comment on the building's design, style, materials, and features, as well as its relationship with its environment.

Have your students compare the design they have chosen to another design by the same architect, and consider the following:

- **What kinds of similarities and differences do they find?**
- **How did the clients and the public respond to each design, and why?**
- **If a design was eventually built, what impact did the completed project have on the surrounding community? What were the other effects (environmental, political, etc.)?**

FOR FURTHER CONSIDERATION

PARTICPATORY DESIGN PROJECT

Work with your students to identify a design project for their school. Working in small groups, the students should follow the process of identifying a problem, devising possible solutions, rendering their ideas, and evaluating and revising their plans. Plans should include a design program outlining the features of the site as well as sketches and models.

Encourage your students to go out into the community to interview area residents about the things that they think can be improved or added to the neighborhood. Once they have identified a problem, consult the Selected Bibliography and Resources section for information on how to gather data for their project. Local chapters of historical societies or the American Institute of Architects may have historical documents, photos, or maps available to look at.

CONCLUDING QUESTIONS

Put the images of the buildings featured in this guide side by side and ask the students to compare them.

- **Ask students what kinds of similarities and differences they notice. Have them use visual evidence to back up their assertions.**

- **Ask them which designs they like best. Discuss why.**

Conduct a walking tour of the neighborhood around your school. Have the students find examples of buildings that incorporate some of the styles or features that they have learned about in this guide. Have them document their findings.

Ask your students to make a list of any remaining questions about the buildings featured in this guide or about architecture in general. Have them take turns writing questions on the board, and then organize the questions into categories. For example:

- **The architects' lives and work.**

- **Historical events during the architects' lifetimes, and how these factors may have played a role in their careers.**

- **Building materials and technologies.**

- **History of a building's community.**

- **Economic factors, such as the cost of materials, construction, or land.**

- **Climate or natural environment.**

FIELD TRIP

Contact your local chapter of the American Institute of Architects or a historic preservation group in your area, such as the National Trust for Historic Preservation. Ask if they can recommend a field trip to a landmark building or local architect's office.

RESEARCH PROJECTS

The Bauhaus

The Bauhaus was an avant-garde art and design school in Germany that was founded in 1919. Many of the school's teachers found new homes in the United States when the Nazis forced the school to close in 1933. Many of the artists and architects featured in this guide have a connection to the Bauhaus. Investigate their relationships in more detail.

Berenice Abbott

Investigate the changes that took place in New York during the period chronicled by Berenice Abbott in her 1935–38 photographic series, *Changing New York*. You can view the images in the series through the New York Public Library Web site, which is included in the Selected Bibliography and Resources section of this guide.

Adopt an Architect

Have your students make a list of all the architects included in this guide. Break the class into smaller groups and assign each group an architect to research. Have them develop a brief presentation for the class.

GLOSSARY

Background: The area of a photograph or painting that appears farthest away from the viewer; also, the area against which a figure or scene is placed.

Bauhaus: A twentieth-century school of art and design, the aesthetic of which was influenced by and derived from techniques and materials employed especially in industrial fabrication and manufacture.

Cantilever: A projecting structure, such as a beam, that is supported at one end and carries a load at the other end or along its length.

Cityscape: An image with urban scenery as its primary focus; an urban environment.

Cladding: A metal covering that sheathes a metal structure.

Color: A substance, such as a dye, pigment, or paint, that imparts a hue.

Compression: The state of being pressed down under a weight or squeezed together.

Conceptual: Emphasizing ideas rather than objects.

Elevation: A scale drawing of the side, front, or back of a structure.

Foreground: The area of a photograph or painting that appears closest to the viewer.

Form: The shape or structure of an object.

International Style: A style of architecture that appeared from 1932 to 1960 and favored boxy structures, lack of decoration, and the use of materials such as steel, concrete, and glass.

Jury: A committee, usually of experts, that judges contestants or applicants in a competition or exhibition.

Line: A geometric figure formed by a point moving forward and back in a fixed direction.

Medium: The material or materials used in a work of art.

Middle ground: The area of a painting or photograph between the foreground and background.

Model: A detailed three-dimensional representation, usually built to scale, of another, often larger, object.

Ornamentation: Decoration, adornment, or embellishment.

Pattern: A series of repeated elements.

Perspective: A method employed to represent three-dimensional space on a flat surface or in relief sculpture. Also, a view, vista, or mental outlook.

Plan: A scale drawing or diagram showing the structure of an object or arrangement of objects.

Ratio: The relation in degree or number between two similar things.

Rural: An area, generally agricultural, that is not densely populated.

Scale: A proportion used to determine the size relationship between an object and its representation.

Shape: The form or condition in which an object exists or appears.

Skyscraper: A very tall building with many stories.

Suburban: Relating to or characteristic of an area on the outskirts of a city.

Sustainable: Relating to a method of using a resource that does not deplete or damage the resource.

Tenement: An urban dwelling made up of several (generally four or more) apartments.

Tension: The condition of a material stretched to tautness; in construction, the stretching of a building component when a load is applied.

Urban: Relating to or characteristic of a city.

Utopian: Having the characteristics of Utopia, a perfect place, usually theoretical; the word "utopia" is from a Greek term that means "no place."

Viewpoint: The position from which something is observed or considered.

Ziggurat: A terraced pyramid form comprising successively receding stories.

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ONLINE RESOURCES

The Museum of Modern Art
www.moma.org

Red Studio: A Site for Teens
www.moma.org/redstudio

Safe: Design Takes On Risk online exhibition
www.moma.org/exhibitions/2005/safe

Tall Buildings online exhibition
www.moma.org/exhibitions/2004/tallbuildings

American Institute of Architects
www.aia.org

Building Big
www.pbs.org/wgbh/buildingbig

Center for Architecture Foundation
www.nyfarchitecture.org

Center for Understanding the Built Environment
www.cubekc.org

Cooper-Hewitt, National Design Museum
www.ndm.si.edu

Eiffel Tower
www.tour-eiffel.fr

Great Buildings
www.greatbuildings.com

Grove Art Online (requires subscription)
www.groveart.com

Lower Manhattan Development Corporation
www.wtcsitememorial.org

Mies in America online exhibition
www.whitney.org/mies
National Architectural Trust

www.natarchtrust.org

National Building Museum
www.nbm.org

New York Public Library
www.nypl.org

Skyscraper Museum
www.skyscraper.org

ABOUT MoMA ARCHIVES

The Museum of Modern Art has a long and rich history of involvement in the careers of many modern artists and architects. A department of Archives was established at MoMA in 1989 to preserve historical documents about the Museum and modern and contemporary art, and to make them accessible to the public. If you would like to set up a workshop for students with a Museum archivist to look through and discuss primary documents of correspondence between the Museum's early directors, curators, and various artists, call (212) 708-9617 or e-mail archives@moma.org.

MoMA SCHOOL PROGRAMS

TEACHER RESOURCES

Guides for educators with CD-ROMs are available for loan throughout the year. All schools have unlimited free access to these resources.

For more information, please call (212) 708-9882 or e-mail teacherprograms@moma.org. Visit MoMA's Web site at www.moma.org/education for information about guides and teacher programs.

PLANNING A MUSEUM VISIT

To schedule a guided discussion with a Museum Educator at MoMA or in your classroom, please contact Group Services at (212) 708-9685. For more information about School Programs, please call (212) 333-1112 or e-mail schoolprograms@moma.org.

DISTANCE LEARNING

MoMA's inquiry-based teaching approach fosters an ideal environment for live, interactive videoconferencing. Looking with MoMA, the Museum's videoconferencing classes, provide multipart programming for teachers and students outside the New York metropolitan area. All classes include MoMA in a Box—a teaching kit containing color reproductions for every student, a CD-ROM, worksheets, the Guide for Educators, slides, and Museum passes. Some programs are available in Spanish.

For more information about Distance Learning, please call (212) 333-6574 or e-mail distancelearning@moma.org.

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