

Uncommon Ideas for Common Places: The Architecture of Frank Furness

Introduction to the Lesson

(Image 1 L2 RR station postcard)

Reproduced courtesy of the Delaware Historical Society.

Picture the setting. It's 1905 and executives from the Pennsylvania Railroad are gathering to meet with Furness, Evans & Company, a prominent architectural firm in Philadelphia. They are meeting to discuss the design of a new railroad station in Wilmington Delaware, a major stop on the popular route from Washington DC to New York City. Gathered are city planners, railroad executives, their assistants and architectural associates. At the stroke of the hour, an older man with a white shock of hair and droopy mustaches enters. He is dressed in bold plaids and walks with an air of superiority. This man is Frank Furness (pronounced Furnace), one of America's foremost architects of the Victorian Age.

Furness, famous for both public and private architecture, was a major railroad designer, responsible for such buildings as the Broad Street Station, and the Academy of Fine Arts in Philadelphia. His designs are iconic, heavy red stone and terra cotta work with bold roofs and intricate design elements. He designed four railroad buildings in Wilmington, three of which remain; the Wilmington Amtrak Station and connected Pennsylvania Railroad Office Building, and the B&O Passenger Station, all located on the Wilmington Riverfront. Furness' personality and work symbolizes a bold individuality. His truly creative mind and interest in taking risks in bold design along with his lack of interest in copying European styles renders him a quintessentially American designer.

This lesson will introduce students and teachers to Frank Furness, his work and its significance in the world of architecture. It will help students understand that Furness' offbeat personality and unorthodox ideas enabled him to design buildings that were truly "American" in their scope and style.

About this Lesson

A. Citation

This lesson is based on the National Register of Historic Places registration file for the Wilmington Amtrak Station and Offices along with primary and secondary sources found in local historical archives. It is written by Leslie Hubbard of LMH Consulting for the Friends of the Furness Railroad District.

B. Where it fits into the Curriculum

This lesson is designed as an addition to art history units on American architecture and its importance in the Industrial Age. Students will be introduced to Frank Furness, his work and its historical significance as they study the Wilmington Amtrak Station.

C. Student Objectives

- Students will be able to explain who Frank Furness was and why his work is important to American Architectural history.
- Students will learn to identify [identification] a building as quintessentially “Furness” and recognize the Furness style by the details that he included in his designs.
- Students will gain an appreciation [understanding] for what architectural design is and what day to day life was like in an architectural firm at the turn of the 20th century.
- Students will research the architecture of historical buildings in their communities and interview a local architect to learn more about the architecture field today.

D. Materials for students

The readings, maps, and other primary sources are designed to be photocopied or projected in PowerPoint for classroom use. The photographs appear twice: in a low resolution version with text and activity instructions and alone in a high resolution version for educational purposes.

Students will use:

Art and paper materials

Computer desktop design program and computer supplies (optional)

Internet access and research materials

Graph paper, pencils, erasers and rulers or t-squares

Additionally the teacher will need:

Some sample home decorating or architecture magazines

E. Visiting the Site

The Wilmington Amtrak Station and offices, is located on the Wilmington Riverfront. Together with the B&O Passenger Station and the Rail Viaduct, they comprise the Frank Furness Railroad District. You are invited to visit the Wilmington Amtrak Station everyday. The Pennsylvania Railroad Offices and the B&O Passenger Station are both inhabited by ING DIRECT and are not open to the public; however you can view them from the outside.

Teaching Activities

A. Getting Started

(Image 2 L2 B&O)

Reproduced courtesy of the Delaware Historical Society.

(Image 3 L2 Kuumba Academy)

courtesy of Joan Hoge

(Image 4 L2 Wilm Amtrak Station 2008)

courtesy of Joan Hoge

What do these three buildings have in common? Why do you think they are similar in these ways?

B. Setting the Stage

Wanted: World renown architect to design a state of the art railroad station for a mid-sized Atlantic Coast city. Must have creative ideas, be willing to take risks and understand the problems of tracks placed at street level. Attention to artistic detail a must. Please send credentials and sample artwork to the Pennsylvania Railroad Company to apply.

An advertisement similar to this might have been placed in an architectural magazine by the Pennsylvania Railroad at the turn of the 20th century. The Pennsylvania Railroad Company knew they needed a new station and was looking for the right man for the job. They decided to hire the firm Furness, Evans and Company, led by Frank Furness one of the most productive American public architects of the Victorian Age.

Furness had designed other famous buildings like the Pennsylvania Academy of Fine Arts, the gates of the Philadelphia Zoo, and the Broad Street Railroad Station in Philadelphia. His buildings were all beautifully designed and decorated with fancy staircases, molding and tiles based on designs found in nature. His work looked different than everyone else's and people could tell one of his buildings just by looking at it.

Frank Furness had the reputation for being willing to take risks, solve problems and design buildings that people loved. People thought he was one of the most creative minds in America at that time.

Today we can learn a lot about a community by studying the architecture of its public places. We can make guesses about what was important to the people, the economic situation in the community, and what they thought was fashionable at the time.

C. Locating the Site

(Image 5 L2 DE Map Mid-Atlantic)

Reproduced courtesy of the Delaware Historical Society.

Wilmington, Delaware is situated amongst five major metropolitan cities on the East Coast. It owes its success to its rich industrial heritage and the importance of the railroad for passenger and freight transportation.

1. What big cities are close to Wilmington, Delaware?
2. Do an Internet search on "Frank Furness Architecture". See how many buildings you can find that were designed by his firm. List and group them by city.

D. Determining The Facts

Reading 1: Who was Frank Furness?

(Image 6 L2 FF mid age mustache)

Reproduced with permission , courtesy of Michael Lewis

Frank Furness is considered one of the most creative architects of the Victorian Age. Historians think of him as a true American designer, not one who copied ideas from Europe. His buildings show how he felt about freedom and the rise of industry in America. Born in Philadelphia in 1839, Furness was the son of William Henry Furness, a famous Unitarian minister and abolitionist. He got a lot of his ideas about freedom and rebellion from his father who believed in freeing the slaves and helping those who were in need.

When he was a teenager, Furness studied with John Fraser, a Philadelphia architect. When he was 19, he took his first job with the Richard Morris Hunt Studio. It was a fashionable place to work. Mr. Hunt was the top architect in America at the time. When the Civil War broke out most American architects went to Europe. Hunt did too and left Furness without a job. Furness could not wait to join the war and signed up with the Calvary. He did not believe in slavery and wanted to join the fight against the South. Eventually he became a Captain. He served until 1864. He is still the only American architect to have been awarded the Congressional Medal of Honor for his service.

Once he got home, he went back to designing buildings. He eventually opened his own studio. He designed over 650 buildings. Some were private homes but many of them were public buildings. Lots of those were railroad stations. His studio, Furness, Evans and Company was famous across America. Many young, talented architects and draftsmen worked there. They went to learn the fine points of architecture once they had graduated from the University of Pennsylvania Architecture School.

Furness didn't care about the European style of architecture that was so popular during the Victorian age. He decided what he liked and made his own style, one that was truly American. His work is easy to recognize. It was truly an invention of his own mind. His buildings are designed in the Gothic Romanesque Revival style. They are built with a fiery red brick and fancy terra cotta decorations. Windows are rounded at the top and the buildings look oversized. His chimneys have big rounded tops. Often the buildings have turrets, clock towers and low swooping roofs. Because they were big, grand buildings, they celebrated the rise of new inventions and industry. They reminded people of all the new wealth and rebuilding that was happening as America recovered after the Civil War.

After the Victorian age, his buildings fell out of style. People didn't like that they were large and chunky. They thought they looked arrogant. During the mid 20th century, many of his buildings were torn down. Today few survive. There is a cluster of Furness buildings found at the Frank Furness Railroad District in Wilmington, Delaware. Now

his buildings are celebrated for their creative, bold design. His work has influenced such famous architects as Louis Sullivan and Frank Lloyd Wright.

Questions:

1. What made Furness the best architect to design the Wilmington Amtrak Station and B&O Passenger Station?
2. Why do so few of Furness' buildings remain today?
3. Why were Frank Furness' designs considered so "American"?
4. What other architects were influenced by Furness? Are there any buildings in your community designed by Furness or those he influenced?

Reading 2: The Furness Style

(Image 7 L2 Clock Tower)

Reproduced courtesy of the Delaware Historical Society.

Frank Furness designed buildings that had most elements of the Gothic Romanesque Revival style. This style was popular during the Victorian Age of the late 1800's. Gothic Romanesque buildings were designed to look like the Roman built cathedrals of medieval times. They were made with lots of fancy decorations. There were rounded arches over the windows, big entryways with large doors, thick stone walls, towers and turrets with rounded roofs, and tile decorations around fireplaces and molding. Victorians thought that the more decorations a building had, the more beautiful it was. Mr. Furness' buildings blended Victorian and Gothic Romanesque to create a style all his own.

Many of the other architects during Frank Furness' time went to Europe to study. They all thought that the French Beaux Arts style was better. Beaux Arts buildings had lots of statues and fancy decorations. Furness never went to Europe. He decided on his own what he liked and designed buildings his way. Therefore, it is easy to tell one of his buildings from others.

He liked to use bright colors, both inside and outside the buildings. Many of his buildings were built out of red stone with terra cotta roofs. Often there were decorations in the brick and in the wood used on the outside. Sometimes the building fronts were colorful. There were turrets, and clock towers. It was easy to tell a Furness house by looking at the chimney. Furness liked to put a big bulb on the top of the chimney, so it looked like the chimney is bigger at the top than the bottom.

Inside, his buildings were very decorative. They had stone and wood decorations around the doors and windows. He specialized in designing these carved stone and wood decorations based on things he saw in nature. There might be frogs or flowers, leaves or animals designed into them. His buildings had large grand staircases with fancy railings. Glass and tile decorations were everywhere.

Some people believe that Mr. Furness was one of most creative minds of his time. They think that his ability to look at things in a different way and come up with new ideas

allowed him to try things that others would not. This made him one of the most important architects of the Victorian Age. His work shows the beginning of a big change in the methods of designing buildings. While his design elements were exciting and bold, his use of engineering made buildings more functional. His designs influenced many younger architects like Louis Sullivan, the inventor of the skyscraper and Frank Lloyd Wright, one of America's most famous architects.

Questions:

1. Mr. Furness' buildings are considered to be designed in what style? Why did his buildings look different from other architects of his time?
2. Where did Mr. Furness find his ideas for his carved decorations?
3. List 5 clues that would help you identify a building designed by Furness.
4. Are there any buildings in your town that were designed in the same style as those by Furness? How can you tell by looking at them?

Reading 3: The 2nd Floor Gang

During Frank Furness' career, he worked for several different architectural firms before opening his own with Alan Evans, his chief draftsman. In those days, architects had to be good artists and mathematicians. They also had to work well with construction teams and craftsmen to make sure their ideas were well represented when the building was finished. Some architects learned their trade by becoming an apprentice in a firm while others went to architecture school at a large university. Both had to work their way up in the firm until their designs were used for important buildings. At Furness and Evans, many of the employees were up and coming talented architecture students. Because the firm was so famous, students from the University of Pennsylvania School of Architecture applied to work there when they graduated. The more senior employees worked on the first floor of the office, while the junior employees worked upstairs. They were known as "The Second Floor Gang". Many of Furness and Evans employees went on to start their own firms and become successful architects in their own right.

In Victorian times, there were no computers, no markers or even rolls of paper big enough to draw plans on. All the measurements and geometry needed to design a building had to be done by hand using paper and pencil. They used rulers, protractors and compasses to draw the detailed plans. Plans were drawn or drafted on velum, a very thin paper-like material made of animal skin. It was hard to erase on velum, so architects had to scratch off their mistakes with a knife, being careful not to cut a hole in the expensive velum. Architectural firms had lots of employees to do this time consuming work. It was expensive and tedious to complete.

Just like in Victorian times, today no building can be built without a floor plan and detailed construction instructions. Construction foremen get a packet of drawings from the architect that tells them exactly how to build the building. Each drawing tells the exact measurements and materials that are to be used. The architect decides what decorations will go where and provides instructions and drawings so that the construction company knows just what the architect has planned. One miscalculation or measurement

can mean that the building won't stand straight or might not be safe to be in. Today these plans are drawn using computers and companies mass produce the moldings and decorations found in most buildings.

Questions:

1. What was "The Second Floor Gang"?
2. What could happen to a building built from plans that contain a measurement mistake?
3. How has the field of Architecture changed in the last 100 years?
4. With new technology used in designing buildings, do you think Architecture today is better or worse than it was in Victorian times? Why?

E. Visual Evidence

Visual Evidence 1: Life in Pictures

(Image 7 L2 young Furness)

Reproduced with permission , courtesy of Michael Lewis

(Image 8 L2 Civil War)

Reproduced with permission , courtesy of Michael Lewis

(Image 9 L2 Furness with Ladies)

Reproduced with permission , courtesy of Michael Lewis

(Image 10 L2 FF late in life)

Reproduced with permission , courtesy of Michael Lewis

Questions:

1. From the images here, list 5 things you can tell about Mr. Furness.
2. Image #1 and Image #4 are portraits made of Mr. Furness at two different times in his life. How did Mr. Furness change from Image #1 to Image #4?
3. Image #3 is a photo of Mr. Furness with his daughter and daughter in law. When in his career do you think Mr. Furness had this portrait taken? How can you tell?
4. Look at these images together and write a paragraph describing this person's life from the clues in the photographs.

Visual Evidence 2: Which is a Furness Building?

(Image 11 L2 Amtrak vert)

Reproduced courtesy of the Delaware Historical Society.

(Image 12 L2 PAFA)

Reproduced courtesy of the Delaware Historical Society.

(Image 13 L2 Beaux Arts)

Reproduced courtesy of the Delaware Historical Society.

(Image 14 L2 Neoclassical) rotated
Reproduced courtesy of the Delaware Historical Society.

Two of these images are of buildings designed by Frank Furness. Two are designed in other styles popular in the Victorian Era. Can you tell which ones are Furness buildings and which are not?

Questions:

1. What color are the four buildings? Usually Furness buildings are made of red stone.
2. By looking at the picture, how many different materials can you guess that the buildings are made from? Can you list them?
3. Are the decorations on the buildings pointy and delicate or smooth and heavy?
4. Do you see any decorations on the buildings that look like plants or animals?
5. Think about the public buildings in your town. Do any of them look like any of these buildings? How?

F. Putting it all Together

Studying people like Frank Furness not only gives us a view of an interesting and revolutionary person, or a window on a period of history, it also inspires us to think about our own lives differently. These activities will help students learn about Furness' life and think about the buildings in their own communities differently. They will get a chance to try their hand at kind the work that architects do and maybe be inspired to learn more about the field. Furness' legacy is the buildings that he left behind, as well as his uniquely American view of architecture. He is a true product of the time in history in which he lived, and the philosophies shared by Victorian America.

Activity 1: An Architect's Journal

Architects often keep a journal of their ideas and thoughts about things in their lives. They might have pictures, quotes, drawings, scraps of cloth, samples of paint and things that give them inspiration. They might write about their days, their business and the projects that they are working on. Using the images in the first Visual Evidence section, ask your students to create a journal page for Mr. Furness. Students can use art materials and papers and print out the images or use a desktop publishing program to design their page. They can do their own research on Mr. Furness and add quotes and other images they might find. Their page should visually reflect the time period and give clues to Furness' life and times.

Activity 2: What's your Style?

Ask your students to name the most famous buildings in your town. List them and explain what makes them famous. Is it the building's use, its design, historical significance or an important event that happened there?

Divide your class into groups and ask each group to research the building using the link below as well as others they might find.

http://www.bc.edu/bc_org/avp/cas/fnart/fa267/amstyles.html

Using the pictures of the buildings and styles and the historical information like dates of popularity and regions of use, your students should be able to discern the building's style and elements. The style they identify should have one or two building picture examples that resemble the building they are researching. They can add a back story of the building through some local research. They might even be able to contact the firm that designed it. The students should present their findings in a classroom format. You can set up a "Guess the Building" game with the class to see if they can guess the building from a list of increasingly easy questions that the researching group develops. The winner is the student who guesses the most buildings given the least number of clues.

Activity 3: Draw Like an Architect

Floor Plan

As the architects were designing your school they identified the lobby as the most public place in the school. They designed the lobby to be the most decorative and bold as it sets the tone for the entire school in the visitor's eyes. This makes the lobby area the most similar to a public railroad station. Station lobbies are charged with setting the tone of the town and make a good impression to travelers as they arrive by train.

In this activity students will have an opportunity to try their hand at drawing floor plans and detail sketches. Using graph paper, pencils, and rulers, ask the students to draw a floor plan of your school's lobby area. Explain that a floor plan is a "bird's eye view" of a room or building. Show the students an example of a floor plan from a home decorating magazine to help them understand how to draw from that perspective. Explain how to draw to scale on graph paper. Give them the opportunity to practice their plan before they render their final draft.

Choose the most prominent architectural feature in your school's lobby. It might be a staircase, a doorway, a decorative window or mosaic floor design. Ask the students to design their own version of the feature for the space. The feature might be purely decorative or communicate the school's spirit or philosophy in some way. Again, show your students some examples found in architectural books, websites or home magazines. Some links can be found in the Supplementary Resources section of this lesson plan.

G. Supplementary Resources

Frank Furness:

http://www.archives.upenn.edu/histy/people/1800s/furness_frank.html - University of Pennsylvania biography

<http://eng.archinform.net/arch/3172.htm> International Architecture database

Architecture:

http://www.aia.org/ed_arched Education page at the American Institute of Architects resources for teachers and kids.

http://www.bc.edu/bc_org/avp/cas/fnart/fa267/default.html Digital Archive of American Architecture. A great pictorial overview of American buildings and styles. For use in Activity 2 of this lesson plan.