

TITLE: READING A BUILDING

SUBJECTS/TOPICS: AMERICAN HISTORY, ARCHITECTURE, LANGUAGE
ARTS, SOCIAL STUDIES

GRADE LEVEL: 9-12 (2 CLASS PERIODS)

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LESSON OVERVIEW

Buildings do not come with captions or user manuals, so architects and architectural historians must rely on their ability to read a building. During the exercises presented in this scaffolded lesson plan, students will begin to develop the necessary skills for decoding the rich architectural world around them by learning how to read architecture. With these skills, it will be easier for students to frame essential questions for conducting research on specific buildings while they, simultaneously, develop the tools for working 'in the field' and exploring the world of architecture, independently.

The exercises presented here offer three main ways to read architecture: (1) using physical building artifacts, whether they be complete buildings, fragments or ruins, (2) using drawings, whether from the original architects, designers, and/or engineer or 'as-built' drawings that record the building at a particular time, and (3) using texts, such as primary (letters, personal descriptions, historic structures reports and surveys, etc.) and secondary (books, critiques, etc.) sources. The lesson's products are also divided between analog elements (drawings, annotation exercises, etc.) and digital explorations (online research and digital modeling).

GUIDING QUESTIONS

What is architecture?

What does it mean "to read a building"?

How can a building teach?

What are the various ways to document a building?

How do we assess the value of a building?

LESSON OVERVIEW, CONTINUED

As students continue to study, they will discover that the world of architecture is full of diverse projects: buildings and structures are different because of their cultural, geographic, and historic associations. This is why many of today's architects specialize in distinct building types, although it is possible to have an architectural practice that creates all different types and scales of buildings. Additionally, many architectural historians specialize in certain time periods and regions so that they can fully understand the context of the architecture. By presenting students with a broader survey with several different projects and styles, students will understand why it is essential to have experts with specialties in certain building types or historic eras.

You will also need to develop your skills of visual attentiveness. Have you have used 'contextual clues' in your English class? When you are reading a sentence and do not recognize a new vocabulary word you can often use elements from the surrounding passage to decipher the meaning of the unfamiliar word. Similarly, as you explore a building you may find that there are components that you do not quite understand, so you must look for contextual clues. Just like expanding your reading comprehension skills or mastering a new language, learning how to read a building takes time, practice, and patience, but the rewards are extraordinary!

LEARNING OBJECTIVES

Apply vocabulary and categorize architectural types and essential vocabulary associated with classical architecture and contemporary design.

Analyze building structures to identify their historic architectural influences, or their architectural "genealogy."

Evaluate the extent to which architecture reflects colonization and cultural remembrance, while synthesizing new ideas and responses to different sites.

CONTENT STANDARDS

English Language Arts: <u>Reading: Informational Text</u>				
Grade	Key Ideas and Details	Craft and Structure	Integration of Knowledge and Ideas	Range of Reading and Level of Text Complexity
9-12	<p>Cite textual evidence to support analysis of what the text says explicitly as well as inferences drawn from the text.</p> <p>Determine a central idea of a text and how it is conveyed through particular details; provide a summary of the text distinct from personal opinions or judgments.</p>	<p>Determine the meaning of words and phrases as they are used in a text, including figurative, connotative, and technical meanings.</p> <p>Determine an author's point of view or purpose in a text and explain how it is conveyed in the text.</p>	<p>Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue.</p> <p>Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.</p>	

English Language Arts: <u>Speaking & Listening</u>		
Grade	Comprehension and Collaboration	Presentation of Knowledge and Ideas
9-12	<p>Integrate multiple sources of information presented in diverse media or formats (e.g., visually, quantitatively, orally) evaluating the credibility and accuracy of each source.</p> <p>Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, identifying any fallacious reasoning or exaggerated or distorted evidence.</p>	<p>Present information, findings, and supporting evidence clearly, concisely, and logically such that listeners can follow the line of reasoning and the organization, development, substance, and style are appropriate to purpose, audience, and task.</p> <p>Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest.</p> <p>Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate.</p>

English Language Arts: History/Social Studies				
Grade	Key Ideas and Details	Craft and Structure	Integration of Knowledge and Ideas	Range of Reading and Level of Text Complexity
9-10	<p>CCSS.ELA-LITERACY.RH.9-10.1 Cite specific textual evidence to support analysis of primary and secondary sources, attending to such features as the date and origin of the information.</p> <p>CCSS.ELA-LITERACY.RH.9-10.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary of how key events or ideas develop over the course of the text.</p> <p>CCSS.ELA-LITERACY.RH.9-10.3 Analyze in detail a series of events described in a text; determine whether earlier events caused later ones or simply preceded them.</p>	<p>CCSS.ELA-LITERACY.RH.9-10.4 Determine the meaning of words and phrases as they are used in a text, including vocabulary describing political, social, or economic aspects of history/social science.</p> <p>CCSS.ELA-LITERACY.RH.9-10.5 Analyze how a text uses structure to emphasize key points or advance an explanation or analysis.</p>	<p>CCSS.ELA-LITERACY.RH.9-10.7 Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.</p> <p>CCSS.ELA-LITERACY.RH.9-10.8 Assess the extent to which the reasoning and evidence in a text support the author's claims.</p> <p>CCSS.ELA-LITERACY.RH.9-10.9 Compare and contrast treatments of the same topic in several primary and secondary sources.</p>	<p>CCSS.ELA-LITERACY.RH.9-10.10 By the end of grade 10, read and comprehend history/social studies texts in the grades 9-10 text complexity band independently and proficiently.</p>
11-12	<p>CCSS.ELA-LITERACY.RH.11-12.1 Cite specific textual evidence to support analysis of primary and secondary sources, connecting insights gained from specific details to an understanding of the text as a whole.</p> <p>CCSS.ELA-LITERACY.RH.11-12.2 Determine the central ideas or information of a primary or secondary source; provide an accurate summary that makes clear the relationships among the key details and ideas.</p>	<p>CCSS.ELA-LITERACY.RH.11-12.4 Determine the meaning of words and phrases as they are used in a text, including analyzing how an author uses and refines the meaning of a key term over the course of a text (e.g., how Madison defines <i>faction</i> in <i>Federalist No.10</i>).</p> <p>CCSS.ELA-LITERACY.RH.11-12.5 Analyze in detail how a complex primary source is structured, including how key sentences, paragraphs, and larger portions of the text contribute to the whole.</p>	<p>CCSS.ELA-LITERACY.RH.11-12.7 Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, as well as in words) in order to address a question or solve a problem.</p> <p>CCSS.ELA-LITERACY.RH.11-12.8 Evaluate an author's premises, claims, and evidence by corroborating or challenging them with other information.</p> <p>CCSS.ELA-LITERACY.RH.11-12.9 Integrate information from diverse sources, both primary and secondary, into a coherent understanding of an idea or event, noting discrepancies among sources.</p>	<p>CCSS.ELA-LITERACY.RH.11-12.10 By the end of grade 12, read and comprehend history/social studies texts in the grades 11-CCR text complexity band independently and proficiently.</p>

PREPARATION

Do you have a favorite building? Maybe you've visited the building multiple times or maybe you've only seen it in pictures, but there is something about that place that has captured your attention. The world is full of great architecture, but the stories behind the buildings can make history come alive! In the following activities, you will explore the language associated with architecture: there is a specialized vocabulary associated with both the language of design and decoding architectural history.

Familiarize yourself with [SAH Archipedia](https://sah-archipedia.org/) (<https://sah-archipedia.org/>), by exploring the website and reading the [HISTORY](#) and [FAQ](#) sections. The activities in the following matrix rely on the following SAH Archipedia resources, which are referred to throughout the lesson as **Building Set 1, 2, or 3**:

1. *Classical architecture, reinterpreted*

These buildings use two of the most famous structures in the classical world as inspiration for New World experiments.

- [The Parthenon](#) (1920-1931) in Nashville, TN
 - Originally built for the 1897 Tennessee Centennial Exposition, this reproduction of the Athenian Parthenon is entirely made of concrete and still serves a tourist population.
- [Rotunda, University of Virginia](#) (1826, with several additions, renovations, and restorations) in Charlottesville, VA
 - Unlike the Roman Pantheon's original purpose as a temple to all the gods, the Rotunda at the University of Virginia represented Thomas Jefferson's vision for a temple to knowledge to help educate the citizens of the Early Republic. Although the building underwent several additional, renovations, and restorations, it is still an active library within the university's grounds.

2. *References to home in the colonial world:*

These buildings allow students to explore the impacts of colonization and remembrance.

- [Mission Nuestra Señora](#) (1934) in Goliad, TX
 - Reconstructed in the 1930s to resemble a mission church, this site demonstrates a different approach to historic preservation as well as the translation of the architecture of Catholic churches in Spain to the colonial frontier.
- [Wren Building](#) (1695-1699; with several additions, renovations, and restorations) in Williamsburg, VA
 - As one of the first institutions for higher learning outside of the northeast, this structure resembles some of the work of English astronomer-architect Sir Christopher Wren.

3. *Vernacular and natural environment, reinterpreted*

These buildings took familiar forms and reinterpreted them into architectural icons.

- [Denver International Airport](#) (1995) in Denver, CO
 - Instead of a massive transportation center in concrete, this airport references its location through an unexpected structure said to resemble both the mountains and the regional architecture.
- [Vanna Venturi House](#) (1960-1963) in Chestnut Hill, PA
 - As one of the architect's first projects, this structure reimagines the forms and features of a 'traditional' house.

PREPARATION, CONTINUED

Reading a Building: S.P.E.A.R.

Before students can effectively start using S.P.E.A.R. it is essential need to make sure that they fully understand its components. Each element of S.P.E.A.R. is intertwined: it is hard to describe the structure of the building without mentioning aesthetics and it would be impossible to fully understand the program of a building without knowing where it is located. By using the elements of S.P.E.A.R., students can start to formulate the story of a piece of architecture. Below are the basic definitions and some associated, key questions that should be explored when assessing this aspect of the acronym.

- **S = Structure:** what makes a building successfully resistant to forces like gravity, wind, or impact. Without structure, buildings are unable to stand or support weight, making them both useless and dangerous. Here are some examples of good structural prompts and questions:
 - Think of structure like the skeleton of a building. Is the structure of the building exposed like the exoskeleton of a bug or is the structure, like the human body, hidden beneath a covering? What materials comprise the structural system?
 - We see lots of structures around us every day, but some may be more unique or innovative than others. When you think about a building's structure, think about the construction methods that might have been used.
 - You also need to assess the condition of the building: has it ever failed? If so, can you discover how or why?
- **P = Program:** function of a building; its purpose or type. Sometimes this is referred to as the building's typology. Our built environment is composed of different building typologies: house, market, store, school, library, factory, museum, garage, etc. Some architectural designers, historians, and critics argue that program is what separates architecture from sculpture. Here are a few points to help students explore the elements of program:
 - Make a list of all of the building typologies that come to your mind. How many can you capture? Did you explore the myriad programs tagged on SAH Archipedia under the 'Type' menu?
 - When you think about program, ask yourself: what is the building used for and is the building still used as it was originally intended?
- **E = Economics:** who, what, and how a building was funded, and maintained.
 - Just because a building was costly does not mean it is important. On the other hand, a building that was constructed and maintained with meager means does not mean the building is unimportant.
 - Who was the patron (funder) and why? This can tell us a lot about a specific person, group, civic organization, or government during a specific era.
- **A = Aesthetics:** what a building looks like, what is it made of, and how it makes its community and occupants feel.
 - Aesthetics, style and taste, can vary drastically between different eras and cultures: what may be beautiful to one person may be completely unpleasing to another person. Therefore, it is good practice to be objective, rather than subjective, in the analysis of aesthetics.
 - What materials are used in the building's construction and what are the decorative elements?
- **R = Region:** the physical context for an architectural project.
 - This category can include an analysis of a site's climate and physical landscape (flora, fauna, topography, geology) but it can also touch on elements such as history and cultural influences. Region is much more than simply the location.

ACTIVITIES

Activity #1

Architectural Geography: SPEAR in Conversation

- Within your class, form groups of 2-6 students. Ideally, the number of groups in your classroom should be a factor of 3 (e.g. 6, 9, 12). Your teacher will have a bag with numbers 1, 2, and 3 written on slips of paper. With your team, randomly select a slip of paper and this will be your assigned Building Set number. Now, you're ready to begin research and start collecting information!
- Within your group, using your Building Set as a guide:
 - Read the associated SAH Archipedia entries.
 - Using either printouts of the page texts, or your own notes, annotate the SAH Archipedia entries and identify any known words or terms. Now, look these terms up in the library, online, or using an architectural dictionary, such as the ones noted in the Bibliography.
- Complete independent research, using SPEAR (see above on page 6) as the guiding lens, in tandem with finding written information, students should also find visual evidence to support their research, such as architectural drawings and photographs.
- Create a Google Map with the selected projects, linking the buildings with their precedents abroad and with other related structures. Students should harvest metadata on SAH Archipedia for guidance: think about location, materials, style, data, architect, and building type.
- Collect and organize all sources, text and images, using the Chicago Manual Style.
- Create an original presentation, addressing the main building's basic information (name, date, architect, location) as well as each of the SPEAR components and the selected, comparative buildings. Embed all sources into the presentation.
- To enhance this geo-located project, encourage the use of an interactive educational tool such as Google Slides or ThingLink so that students can add text descriptions, images, and web links.
- Within their groups, have the students present their findings to the class.

Activity #2

Tourism and Transitions

Using Building Set 2, divide the students into two groups: one studying the [Wren Building](#) and one studying the [Mission Nuestra Señora](#). Further subdivide the groups into teams of three. Before they start, have all students read the entries for both buildings.

Wren Building team(s):

- Using the SAH Archipedia, identify and locate other universities designed and built in the late 1700s and early 1800s (pre-Victorian 19th century).
- Make an original map locating these sites. This could be completed by using Google's My Maps since this will let students save locations and add notes; or, by creating a Google map and saving the image as the base for a ThingLink.
- As a team, add another pin on the map for the Wren Building. Add the building's basic information (name, date, architect, location), a brief summary (written collaboratively), and provide links to representative images and useful websites.
- Now, have each of the students select one of the colleges/universities to study independently; they will need to write a brief summary and provide image links.
- Now, add to the map the basic information (name, date, architect, location) for each of the three selected projects as well as project summaries and links to representative images and websites.
- As a team, imagine designing a tour between the four sites. Write a comparative tour, outlining the order you will visit the buildings and why, and how the sites can be read in conversation.

Mission Nuestra Señora teams(s):

- Using online tools, identify and locate all of the National Park Services' (NPS) Mission sites.
- Make an original map locating the NPS mission sites. This could be completed by using Google's My Maps since this will let students save locations and add notes; or, by creating a Google map and saving the image as the base for a ThingLink.
- As a team, add another pin on the map for Mission Nuestra Señora. Add the basic information (name, date, architect, location), a brief summary (written collaboratively), and provide links to representative images and useful websites.
- Now, have each of the students select one of the missions to study independently; they will need to write a brief summary and provide image links.
- Now, add to the map the basic information (name, date, architect, location) for each of the three selected projects as well as project summaries and links to representative images and websites.
- As a team, imagine you a designing a tour between the four sites. Write a comparative tour, outlining the order you will visit the buildings and why, and how the sites can be read in conversation.

Initiating a revision process, have students in each group (Wren vs. Mission) read and edit each other's entries and tours. Return these revisions and comments so teams can improve their work before they share it with the class.

Advanced Enrichment

Advanced Enrichment #1

Becoming an Architectural Apprentice: Reading a Building

As an independent assignment, have students browse SAH Archipedia to select another project. This may be a “free” exploration exercise, or it could be within one of the following categories:

- a thematic extension of one of the Building Sets
- a particular building style
- a structure in the students’ home state
- Remember and understand
 - Have the students read about their selected building on SAH Archipedia. Annotate the reading, identifying any unknown terms/concepts, key elements, and the basic information for the building.
 - Research the building independently online and/or in the local library.
 - Collect facts and images, beyond what was presented in the SAH Archipedia entry, in order to craft an original presentation.
- Apply and analyze
 - What elements of the building are similar to those studied in the previous aspects of this exercise (form, style, program, etc.)?
 - Using newly learned terms as well as an architectural dictionary (e.g. Cole, Hopkins, or a Penguin edition), annotate the collected images
- Evaluate and create
 - Have the student(s) ‘read’ their project to the class by presenting sourced information on the building, site, and its possible meaning(s) and precedents.

Advanced enrichment #2

Design in 3D: digital modeling in architectural history

- Find a project that is listed in both SAH Archipedia and the [Historic American Buildings Survey](#) (HABS). Make sure 'surveys only' is selected within the search options (see image below), since this will filter the projects with measured drawings, but please note that not all documents have been digitized so it may take some trial and error.
 - Projects from the Building Sets that may be used: UVA Rotunda, Mission Nuestra Señora, and the Wren Buildings.
 - A few other options following since these have the required information and are not overly complex projects for an initial digital modeling exercise: [Old York Goal](#), [Wanton-Lyman-Hazard House](#), [Merchant's National Bank](#)
 - Advanced modeling: [Grey Columns](#), [Jefferson Memorial](#)
- Students may need to supplement visual content from other databases (see Bibliography for Building Sets below)
- Create a [SketchUp](#) model of a selected project. SketchUp for Schools is available within the Google Education Suite and a 30-day free trial can be downloaded from the [SketchUp website](#). A video example of translating 2D drawings into a 3D model is available in the project resource folder.
- When finished, have students upload their work to the [Google 3D Warehouse](#)
 - Have students write an original 200-word description of the project, noting the significance of the project and its major features. Include a link to any relevant sources as well as a link to the project's SAH Archipedia page. In a 100-word reflection, have the students explore what they learned from creating the model in 3D and how this exercise enriched their understanding of the building.
 - Tag the work with these suggested hashtags:
 - #[project name]
 - #[architect name]
 - #[location]
 - #SAHArchipedia

Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey: Search Results

Print | Subscribe | Share/Save

PRINTS & PHOTOGRAPHS
ONLINE CATALOG (PPOC)

Search All

Search This Collection

parthenon

GO

Advanced | Help

Results 1 - 3 of 3

View: List | Gallery | Grid | Slide

3 results containing "parthenon"

Larger image available anywhere (3) | Larger image available only at the Library of Congress | Not Digitized |

Surveys only

- 

Little Buffalo River Bridge, Spanning Little Buffalo River at AR 327, Parthenon, Newton County, AR
Documentation compiled after 1968 | Data Page(s): 5 | Historic American Engineering Record
HAER AR-80
- 

The Parthenon, 2500 West End Avenue, Nashville, Davidson County, TN
Documentation compiled after 1933 | Photo(s): 2, Photo Caption Page(s): 1 | Historic American Buildings Survey
HABS TN-272
- 

Parthenon Manor, Edmonston Road (State Route 450 Vicinity), Bladensburg, Prince George's County, MD
Documentation compiled after 1933 | Photo(s): 4, Measured Drawing(s): 3 | Historic American Buildings Survey
HABS MD,17-BLAD,4-

Results 1 - 3 of 3

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ASSESSMENT

	Exemplary	Successful	Insufficient	Unsuccessful
Architectural Curiosity	The student is able to analyze a building by synthesizing text, photographs, and drawings; asks original questions and references a variety of sources.	The student can effectively use SPEAR to analyze a building and use SAH Archipedia to glean essential information.	The student is able to use some of the SPEAR elements to evaluate a building but is unable to use a fully comparative method.	The student shows little interest or ability to assess a building beyond subjective judgments.
Develop architectural literacy Ability to decode form and meaning by assessing buildings, sketches, and orthographic drawings; ability to create original designs based on a conceptual framework.	The student demonstrates an ability to read even the most complex elements within architectural drawings and is able to apply their understanding of sustainability of their own design work. Within written exercises, the student's text is fluid and uses advanced architectural vocabulary. In addition to providing a summary of design concepts, the text also provides essential critique of the project, its methods, and outcomes.	The student demonstrates a consistent ability to read architectural drawings and interpret the varied elements of drawing conventions, and is able to apply these skills to drawing research and building interpretation. The student is able to explore and apply comprehensive sustainability assessments to projects. Within written exercises, the student's original text is clear, cohesive, and effectively summarizes design concepts.	The student demonstrates an inconsistent ability to read architectural drawings and interpret the varied elements of drawing conventions. The student demonstrates a fair understanding of the multifaceted definition of sustainability but is unable to apply this to project analysis or their own design work. Within written exercises, the student's original text uses appropriate architectural language.	Within written exercises, the submissions have some errors and do not use any relevant architectural language. Buildings are not "read" through SPEAR and the student does not demonstrate ability to read architectural drawings.

	Exemplary	Successful	Insufficient	Unsuccessful
Database navigation Primarily SAH Archipedia	Easily navigates SAH Archipedia, using specific metadata. Uses additional sources, such as the Historic American Buildings Survey (HABS), to find useful archival information on selected projects.	Successfully navigates SAH Archipedia using the menu, embedded links, and the search feature. The student can find information by state, materials, building type & components. Citations are properly applied to research writings and presentations.	Can complete searches and independent investigation, but has difficulty navigating all of the embedded information within SAH Archipedia, such as moving between similar projects, styles, or locations.	Student is unable to mine SAH Archipedia beyond a direct search.
Online Research Successfully navigate online architectural research portals and information management systems to find accurate information for research projects and apply findings within original design exercises	The student shares with the class substantial online research through inquiry, presentations, and/or interactive web tools. The student curates their research through the creation of products that go above and beyond assignment requisites. For graphic research exercises, the selected images use specific sequencing as a narrative to relay the project's key concepts and elements.	Online research uses trusted and verified architectural sources in order to find accurate information on innovative projects and design firms. Interactive web tools are consistently used to share and review work. For graphic research exercises, the selected images showcase the breadth of image types ranging from orthogonal images to perspectives to conceptual sketches.	The student uses only a few or poorly sourced online architectural research site and the student inconsistently engages with the various exercises. For graphic research exercises, the selected images demonstrate a depth of visual research in terms of image type and quality.	There is an absence of online architectural research and the student does not actively engage with the various exercises. For graphic research exercises, the selected images are pixelated, repetitive, or inadequate as visual evidence.

	Exemplary	Successful	Insufficient	Unsuccessful
Presentations	Student melds analog and digital tools seamlessly. The verbal presentation is clear and well-articulated, uses advanced architectural vocabulary, beyond the content in specific entries and reflecting independent synthesis. Any written elements are engaging and encourage viewers to ask questions and make thoughtful evaluations.	The student uses analog and digital means but does not fully integrate the capabilities of either into a hybrid presentation. The verbal presentation has good pacing, eye contact, and uses the visuals as a complement to the verbal content. The verbal presentation is clear and well-articulated, using appropriate architectural vocabulary. Any written elements have been proofread and are easy for viewers to read from afar.	The student uses only analog or digital means; minimal architectural vocabulary is integrated into the presentation and there is little correspondence between the visuals and the verbal presentation.	The presentation shows little development, architectural curiosity, organization, or relevancy in response to the project brief.

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Bibliography for Building Sets

Building Set #1A: Parthenon in Nashville, TN and the Parthenon in Athens, Greece

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 - <http://www.acropolisvirtualtour.gr>
 - <https://www.ancient-greece.org/architecture/parthenon.html>
 - <https://www.britannica.com/topic/Parthenon>
 - <https://www.archdaily.com/803931/ad-classics-the-parthenon-ancient-greece-ictinus-callicrates>
 - <https://www.metmuseum.org/art/collection/search/10482>
 - <https://www.metmuseum.org/art/collection/search/12263>
- Images:
 - Engravings of "Temple Du Parthenon A Athenes" from Hector d'Espouy's *Fragments D' Architecture Antique* Volume II (1900), Public Domain
 - Greyhound advertisement (1935), Public Domain
 - [https://commons.wikimedia.org/wiki/File:The_Parthenon,_Nashville_TN_\(6274940873\).jpg](https://commons.wikimedia.org/wiki/File:The_Parthenon,_Nashville_TN_(6274940873).jpg)
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 - <https://www.goodfreephotos.com/united-states/tennessee/nashville/statue-of-athena-of-the-middle-of-the-parthenon-nashville.jpg.php>
 - <https://www.flickr.com/photos/cseeman/16655517844/>

Building Set #1B: University of Virginia's Rotunda, Charlottesville, VA and the Pantheon in Rome, Italy

- Print:
 - Howard, Hugh. *Thomas Jefferson, Architect: The Built Legacy of Our Third President*. New York, NY: Rizzoli, 2003.
 - Lee, Anne Carter, ed. *Buildings of Virginia: Valley, Piedmont, Southside, and Southwest*. Charlottesville, VA: University of Virginia Press, 2015.
 - Nichols, Frederick D. *Thomas Jefferson's Architectural Drawings*. 5th ed. Charlottesville, VA: University of Virginia Press, 1984.
 - Wenger, Mark R. "Thomas Jefferson, the College of William and Mary, and the University of Virginia." *The Virginia Magazine of History and Biography* 103, no. 3 (1995): 339-74. <http://dx.doi.org/10.2307/4249522>.
 - Wilson, Richard Guy, ed. *Thomas Jefferson's Academical Village: The Creation of an Architectural Masterpiece*. Charlottesville, VA: Bayly Art Museum of the University of Virginia, 1993.

- Wilson, Richard Guy. *University of Virginia: An Architectural Tour*. 2nd ed., edited by David J. Neuman, Sara A. Butler, Walter Smalling, and Sarah Oehl. New York, NY: Princeton Architectural Press, 2012.
- Online:
 - <https://rotunda.virginia.edu/history>
 - <https://www.monticello.org/site/research-and-collections/construction-university-1817-1826>
 - [Thomas Jefferson's Drawings of UVA at the Massachusetts Historical Society](#)
 - [Thomas Jefferson's Drawings of UVA at the University of Virginia's Special Collections](#)
 - <https://www.archdaily.com/802201/ad-classics-roman-pantheon-emperor-hadrian>
 - <https://www.archdaily.com/800786/ad-classics-university-of-virginia-thomas-jefferson>
 - <https://www.metmuseum.org/art/collection/search/348799>
 - <https://www.metmuseum.org/art/collection/search/459349>
- Images:
 - Holsinger Studio photographs of the [Rotunda and Lawn](#), [Rotunda South Facade](#), [Rotunda on Fire](#)
 - Reconstruction of the Pantheon in Rome (1553) published by Antonio Lafreri, Public Domain
 - View of the Pantheon (c. early 1670s) by Lievin Cruyl (1634-1720), Public Domain
 - Postcard of the Pantheon (ca. 1907-1914), Public Domain
 - Color postcard of the Pantheon (ca. 1907-1914), Public Domain

Building Set #2A: Mission Nuestra Señora, and other related resources

- Print:
 - Christensen, Pixie. *Lone Star Steeples: Historic Places of Worship in Texas*. College Station, TX: Texas A&M University Press, 2016.
 - Early, James. *Presidio, Mission, and Pueblo: Spanish Architecture and Urbanism in the United States*. College Station, TX: Texas A&M University Press, 2004.
 - Kennedy, Roger G. *Mission: The History and Architecture of the Missions of North America*. edited by David Larkin. Boston, MA: Houghton Mifflin, 1993.
 - Moorhead, Gerald, ed. *Buildings of Texas: Central, South, and Gulf Coast*. Charlottesville, VA: University of Virginia Press, 2013.
- Online:
 - <https://tshaonline.org/handbook/online/articles/uqn16>
 - <http://www.texasmissionguide.com/about-the-missions/>
- Images
 - Goliad Chamber of Commerce

Building Set #2B: Wren Building in Williamsburg, VA, and other related resources

- Print:
 - Darn, Harold and Robert Mark. "The Architecture of Christopher Wren." *Scientific American* 245, no. 1 (1981): 160-75.
 - Dearstyne, Howard. *The Wren Building of the College: Architectural History*. Colonial Williamsburg, VA: Architects' Office, The Colonial Williamsburg Foundation, 1950, revised 1951.
 - Jardine, Lisa. *Ingenious Pursuits: Building the Scientific Revolution*. London: Little, Brown, 1999.
 - Jardine, Lisa. *On a Grand Scale: The Outstanding Career of Sir Christopher Wren*. London: Harper Collins, 2002.
 - Wilson, Richard Guy, ed. *Buildings of Virginia: Tidewater and Piedmont*. Oxford: Oxford University Press, 2002.
- Online:
 - <https://www.wm.edu/about/history/historiccampus/wrenbuilding/>
 - <https://www.archdaily.com/558958/spotlight-sir-christopher-wren>

- Images
 - Wren Building photograph (c. 1934-1950) by Thomas Hadley, Public Doman
 - Bodleian plate, illustrating the College of William and Mary (c. 1781-1782), Public Doman

Building Set #3A: Denver International Airport, and other related resources

- Print:
 - Fentress Architects. *Now Boarding: Fentress Airports + the Architecture of Flight*. Edited by Donald Albrecht. Denver, CO: Denver Art Museum in association with Scala Publishers, 2012.
- Online:
 - <https://www.architonic.com/en/project/fentress-architects-denver-international-airport/5100647>
 - <https://fentressarchitects.com/projects/denver-international-airport>
 - <http://rci-online.org/wp-content/uploads/2006-cts-barden.pdf>
 - <https://cozine.com/2014-september/dia-story-behind-tents/>
- Images
 - Roof detail, Public domain
 - Interiors, Public domain
 - Interior, Fentress Architects

Building Set #3B: Vanna Venturi House, and other related resources

- Print:
 - Schwartz, Frederic, ed. *Mother's House: The Evolution of Vanna Venturi's House in Chestnut Hill*. New York, NY: Rizzoli, 1992.
 - Venturi, Robert. *Complexity and Contradiction in Architecture*. New York, NY: Museum of Modern Art, 1966.
- Online:
 - <https://www.archdaily.com/62743/ad-classics-vanna-venturi-house-robert-venturi>
 - <https://interactive.wttw.com/tenbuildings/vanna-venturi-house>
 - <http://www.uncubemagazine.com/blog/15926627>
 - <https://www.moma.org/collection/works/990>
 - <https://archpaper.com/2016/05/vanna-venturi-house-found-buyer/>
 - <http://constructionlitmag.com/architecture/vanna-venturis-hybrid-house/>

Lesson Extensions:

- SAH Archipedia pages on select architectural styles:
 - [American Colonial](#)
 - [Classical Revival](#)
 - [Expressionist](#)
 - [International Style](#)
 - [Palladian](#)
 - [Postmodern](#)
 - [Spanish Colonial](#)
 - [Vernacular](#)
- SAH Archipedia pages on building materials:
 - [Brick](#)
 - [Cast Iron](#)
 - [Concrete](#)
 - [Fiberglass](#)
 - [Limestone](#)
 - [Wood](#)
- SAH Archipedia pages on typology (building uses):
 - [Airports](#)
 - [Churches](#)
 - [church-specific vocabulary](#)
 - [Colleges and campuses](#)
 - [Exhibition buildings](#)
 - [Houses](#)
 - [Mission churches](#)
- Structural concepts and forms (PDFs):
 - [Arch](#)
 - [Cantilever](#)
 - [Column](#)
 - [Capital](#)
 - [Fluting](#)
 - [Dome](#)
 - [Tensile](#)
- Relevant external links:
 - [Historic American Buildings Survey](#)
 - [National Park Service](#)