



Yale-New Haven  
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Curriculum Units by Fellows of the Yale-New Haven Teachers Institute  
1991 Volume II: The Family in Art and Material Culture

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## **Buildings of America**

Curriculum Unit 91.02.05  
by Delci Lev

### **Introduction**

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The Betsy Ross Arts Magnet (BRAMS) is a middle school that draws its population from two separate pools: first, through a lottery system which brings in students from the entire city and, secondly, neighborhood (local) students. BRAMS is considered the neighborhood middle school. The students attending are not required to be gifted in the arts, but must express an interest in the field. Admittance is not predicated on any specific academic criteria. As a result students who attend BRAMS are from every part of the city, from various socioeconomic backgrounds, and have a wide range of academic abilities.

My current assignment is teaching Language Arts and Social Studies to fifth and sixth grade students who function at the lower end of the developmental range. Their problems can range from low academic performance to specific learning disabilities (LD) to language deficits. Frequently children are identified in their early years as having a learning disability when in fact they are simply developing and maturing normally, but at a slower rate than the average child. This has little to do with their intelligence or abilities, but rather with their own inner time clock.

Generally speaking we all learn differently, based on our strengths and weaknesses; any curriculum should allow for differences whether problems exist or not. To allow for learning problems and developmental differences, curriculum design needs to be flexible and compensatory. The subject matter being taught should be presented in such a way as to engage all of each child's senses while allowing for developmental differences.

The design of this unit will utilize an interdisciplinary approach. Students will be expected to develop and use written and verbal skills, improve motor skills, increase levels of awareness, sharpen visual discriminatory skills, increase vocabulary, employ problem solving techniques, implement skills learned in the arts component, and begin to develop an appreciation for the esthetics of architecture.

## Curriculum Design

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The format of the Social Studies text used by the City of New Haven Public Schools presents material from two different perspectives, historical and regional. The former begins with the Native Americans and traces them from the 17th century to the present, while the latter views America by regions in the 20th century, examining the effect of environment, natural resources and business of the individuals and regions being studied. This text will provide the core of the curriculum, with supplementary material in this unit adding a history of American architecture. Students will study buildings from different regions and different historical periods. They will learn how climate, natural resources and culture have affected the design of these buildings. The students will be able, using correct terminology, to describe, evaluate, and draw conclusions about the architecture of the time and place being studied. Supplementary material provided on architecture will begin with the colonial period and end with the Victorian period.

## Objectives

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- I. Increase general level of awareness of buildings and their function in society.
- II. Sharpen observational skills.
- III. Develop students' ability to evaluate what they see.
- IV. Increase students' awareness of their environment and its natural resources.
- V. Promote an understanding of how the environment, culture, and natural resources affect the design and structure of a dwelling.
- VI. Begin to develop an esthetic appreciation of architecture.
- VII. Increase vocabulary in the following areas: environment, culture, natural resources and architecture.
- VIII. Improve problem solving techniques.
- IX. Improve writing skills.

## Strategies

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- Students will take pictures of their school, their homes/apartments, or any dwelling of their choice. Pictures
- I. will be developed by the teacher or at school in the arts component of the school. Students will use home-made cameras or students will be provided with disposable ones.
  - II. Students will be placed in teams of three and four and asked to:
    - a. Generally describe the picture.

- b.
- c.
- d.
- e.
- f.
- g.

List the items in the picture from large to small.

Note the shape of the building, and the shapes formed within the structure.

Note colors of the buildings (external), and determine which colors are strongest and which are considered weakest.

Describe the textures of the structure as seen in the picture.

Describe the life of the people who live in the structure. What would it be like to live in such a family? or What is it like to attend school in this building?

All material generated in activities a-f will be written up in composition form. Initially this task will be a group activity directed by the teacher. It will become an independent activity as students' skills improve.

III. Concurrently, vocabulary and definitions will be generated in the areas of architecture, natural resources and environment.

IV. Students will visit the Peabody Museum to study the American Indian Exhibit, and take walking tours to view historic structures in the New Haven area.

V. When visiting 18th, 19th, and 20th century structures, students will be expected to complete steps a-f found in strategy II. All observations will be kept in individual journals, as will vocabulary lists.

VI. Vocabulary will be placed on flash cards, words on one side, definitions on the other, for ongoing review and reinforcement.

VII. As students progress from each region or timeframe, they will build models of the dwellings being studied. Homemade or recycled materials will be used in the construction when depicting 17th, 18th or 19th century structures/dwellings. Students will collectively build all models.

VIII. At every opportunity, the environment and its natural resources, coupled with the prevailing culture, will be discussed as it relates to building. Information and observations will be recorded in journals.

As a culminating activity, students will design and build a model city/town of the future, based on IX. knowledge gained about the environment, culture and natural resources of the time and place in which they live.

## Architectural Journey

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### I. American Indians

***Wigwam*** *The Indians from Quebec to the Carolinas lived in wigwams. The frames were constructed of slim poles, with one end dug into the ground and the other end bent over, and tied together, forming a semi cylindrical roof. The frame was covered with animal skins, bark or woven mats. A hole was left in the center of the roof to allow smoke from the inside campfires to drift out. Vocabulary words : semi cylindrical, animal skins.*

***Teepee*** *The teepee was inhabited by among others the Blackfoot, Cheyenne and Sioux Indians living on the plains in South Dakota, Montana, Wyoming and Colorado. The teepee was a conical structure constructed of long poles covered with animal hides, usually buffalo or deer. The homes were portable and easily dismantled by the women of the tribe when it was necessary to move. Vocabulary words : inhabited, dismantled, portable, cone or conical.*

***The Long House*** *Long houses were inhabited by the Iroquois and other tribes of the Northeast and by the Puget Sound Indians of the Northwest. The frame consisted of saplings which were covered with overlapping layers of bark. Each structure provided shelter for several families, and could be 125 feet long. Vocabulary words : Saplings, overlapping.*

***Hogan*** *The Navajo of Arizona were primarily shepherds, and moved periodically to provide better grazing for their herds. The hogan, in which they lived in the winter, was constructed of earth and logs, and was round in shape with a dome roof. Branches and grass were substituted in the making of the structure to provide cooler conditions in summer. Vocabulary words : dome roof, shepherds, grazing herds.*

***Pueblo The pueblo is built of adobe; it was home and fortress to the agricultural Indians living in the Southwest who include among others, Zuni, Hopi and Keres. Rooms were reached via ladders through trap doors on the roof of each structure. In times of attack the ladders were pulled up, providing a measure of security. The pueblo in Taos, New Mexico, has been inhabited continuously since 1700. Vocabulary words: adobe, fortress.***

## **II. Colonial Period**

The first settlers in this country lived in variations of the dugout, wigwam (fig. 1, slide 1) and cottages (fig. 2, slide 2). Within a year or two of arrival, most settlers replaced earlier structures with ones that were more substantial, similar to the ones with which they were familiar in England although smaller and with some modifications to suit the climate. These structures varied, based on the circumstances and needs of a family. In general, structures fell into one of three patterns, ranging from the simple to the more complex.

The simplest and most common form of housing in the early settlements consisted of one room (fig. 3). A small area encountered upon entry through the front door was called a 'porch', with a staircase opposite the door placed against a large chimney. The upper level was a large one-room sleeping area under a one-half story sloping roofline; in some cases the second floor was a full two stories. The main room downstairs was used for cooking, living and dining; this was called a 'hall'. The room was ample in size, measuring approximately 16 by 18 feet. The fireplace set into the chimney was massive; it was used by the family for cooking and heat.

The next was a two-room plan (fig. 4). A parlor was added to the other side of the chimney, providing warmth for both rooms. A second sleeping chamber was added on the second level as a result of this addition.

Next was the addition of a lean-to (fig. 5). The lean-to was added to the back of the house, creating a longer sloping roofline. This provided two additional rooms, a pantry/kitchen and a bedroom. A central chimney and fireplace was added to the back wall for cooking. The bake oven was located within the fireplace, in some instances a separate oven was built to the side of the fireplace. Frequently the house faced south, with the lean-to added to the north wall. The lean-to was often an addition to an existing structure, at times was built as part of the original design of a new structure. Its shape looked like an old fashioned salt box, which gave rise to the descriptive name—the "salt box" house. Local materials were used for thatch with wattle and daub fill for the walls; twigs or sticks and mud along with burnt oyster shells and lime were used to make mortar.

***Northern Colonial The Parson Capen House in Topsfield, Massachusetts, 1683, is an excellent example of New England Colonial architecture. The house is significant for the following reasons: it was raised on June 8, 1683 (date carved in the chimney), it remains on the original site, on a knoll across from the meetinghouse and adjacent to the commons. It was built by a second generation Puritan, born in Dorchester, Massachusetts in 1658. He was educated at Harvard, and became pastor at Topsfield at age 23 in 1681. He remained pastor until his death in 1725. (figs. 6, 7; slides 3, 4, 5, 6). The Parson Capen House has a large center chimney, high pitched gabled roof, with the second floor protruding over the first floor, creating an overhang with "pendills." Dark brown clapboard and shingles cover the exterior. The house was extensively renovated in 1913.***

***Southern Colonial The earliest Virginia settlers' homes were made of wood. It was abundant and familiar to the craftsmen, who had worked with it in England. Virginia was rich in clay, used in the making of bricks. The English preferred masonry construction, bricks were used early as a***

### **building material.**

The southern farmhouse, much like its northern counterpart, was of simple construction. Smaller homes consisted of one room; larger ones had two rooms. The roofline was high pitched, with an attic below. Some homes contained a central hall. The chimney was built on an outside wall, as the southerner was not concerned with heat retention. An early example of this type of dwelling is the *Adam Thoroughgood House* in Norfolk, Virginia, 1636 (figs. 8, 9; slides 7, 8).

### *Vocabulary of the Colonial Period*

clapboards	lean-to	saltbox
overhang	central fireplace	chimney
shingle siding	heavy timber door	rafter
heavy timber	purlin	gable
mortise and tenon	pendant or pendills	

### **III. Georgian Architecture**

The stylistic roots of the Georgian period can be traced back to first-century Rome. Vitruvius, an architect-engineer, recorded ancient principles of proportion, construction, and ornament in his work, *Ten Books of Architecture*. During the Renaissance in Italy, Palladio's and Serlio's influential publications revived these principles, which later became popular in eighteenth century England. A pattern book written by James Gibbs, published in London, 1728, influenced the growth of the Georgian style in the colonies. The patterns were simple and conservative, illustrated well, and appealed to many.

The Georgian style was found both in cities—Newport, Boston, Philadelphia, Annapolis, Williamsburg, and Charleston—and on the plantations of gentlemen farmers in Virginia and the Carolinas. This style was also used in manors in Pennsylvania, Maryland, and New Jersey, and large estates in New England and New York. Principal architects in England who influenced the architecture of the colonies were: Inigo Jones, Christopher Wren and James Gibbs.

*Mount Pleasant*, in Philadelphia, built in 1762, is an example of Georgian style architecture. This house was of masonry construction and very large. It was built of stone covered with stucco to resemble finished stone. The corner quoins and the string course were brick. The tin-covered hip roof is topped by a balustrade. Details of this period house included a central Palladian window and pilasters flanking the doorway. Above the door is a fine fanlight (fig. 10; slide 9).

*Westover*, Charles City County, Virginia, 1730-1734 is thought to be one of the finest examples of Georgian architecture in America. It was built by William Byrd II (1674-1744), a second generation colonial born into wealth and position. He was educated in England where he enjoyed the privileges of the upper class, returning to Virginia to manage a large estate inherited from his father. He became active in public affairs and was as successful in both his public and private life.

The mansion was originally designed to be approached from the river. Today one enters from the north and passes through wrought-iron gates presumed to be made in London in the shop of Thomas Robinson. This elegant home is set in parklike surroundings. The roof rises sharply forming a ridge, including rows of hipped

dormers and two sets of chimneys on either side of the structure. The eye falls to a cornice with dentils and below this a belt course draws the eye to the entrance. The windows are spanned by brick arches, with glass cut to fit the arches. The windows diminish proportionately in size on the second floor. Coupled with the steep roof line, this creates an illusion of greater height (fig. 11; slides 10, 11).

*Materials Used:* Clapboard—painted blue, green, salmon or yellow. Brickwork in either a rose or salmon color, laid in Flemish-bond, a pattern of laying bricks, header (short side) to stretcher (long side), in one row. English bond, a pattern of alternating layers of brick, header to stretcher. Fieldstone was used in the Hudson Valley and rural Pennsylvania.

#### *Vocabulary of the Georgian Period*

broken pediment	clapboard	fanlight
quoins	classical	hipped roof
transom windows	cornice	sash windows
balustrade/railings	eaves	keystone lintels
Palladian windows	gambrel roof	gable
elaborate entryways		

#### **IV. Federal Period**

The Federal style was a refinement of the Georgian. It was balanced, symmetric in design, delicate and elegant. Roman excavations in Pompeii and Herculaneum contributed motifs of urns, garlands and festoons to these new dwellings. These influences were brought to America through the published work of architect-decorator Robert Adam of London and others. Federal homes were built by merchants, ship captains, shipbuilders, and bankers. The businessmen of this period were daring in their business ventures but conservative in the construction of their homes. They were identified with the Federalist Party. Important American architects of the era included Samuel McIntire, Charles Bulfinch, Thomas Jefferson.

*Monticello* in Albermale County, Virginia, 1770-1809, is one example of this period. This house was designed and built by Thomas Jefferson over a period of more than thirty years, during which time it underwent many changes. Jefferson based his design on Roman buildings which he had seen in France, and on the French Neoclassic buildings. These included the portico with its Roman pediment and rotunda topped by a Palladian dome. Balustraded promenades extended from the house. Beneath them were covered passages leading to the kitchen, stables and servant quarters. The construction was of brick with white wood trim. Innovations of the time included a dumbwaiter and an indoor toilet (figs. 12, 13, 14; slides 12, 13, 14, 15)

Samuel McIntire learned the craft of wood carving from his father and developed his skills and talents into becoming a well recognized architect-builder of the time. He was born and raised in Salem, Massachusetts. He remained in Salem to build for the wealthy of this seaport town.

The *Pingree House*, Salem, Massachusetts, 1805, is an example of McIntire's work. The lines are clean and formal, being rectangular in shape with a series of five rectangles repeated on each of its levels. These patterns are formed by windows, windows and a front entrance, and by the division of the balustrade. Each

level is separated by either a belt course, cornice with dentils, or a combination of both. The rectangular pattern is continued in the shape of the tall chimneys on each side of the house. The windows are crowned by keystone lintels, the entranceway is marked by columns and pilasters, providing an overall effect of style and grace (slide 16).

*Materials Used* : Brick, laid in Flemish-bond; clapboards; paint, pastel colors, white; hardware, brass and iron used in combination; fence, wood or iron, decorative features.

### *Vocabulary of the Federal Period*

hipped roof urn                      dentils  
garland      festoon                  balustrade  
portico      keystone lintels dormers  
multiple chimneys  
elliptical fan-shaped windows over front door

## **V. Victorian**

Victorian period 1840-1900 is divided into early Victorian 1840-1860, and late Victorian 1860-1900.

The early part of the Victorian era was marked by large waves of immigrants. This was a mixed blessing; the numbers provided much needed labor, but the different religions, ethnic and classes presented conflict. The cities grew and with their growth came the problems of crime, fires, epidemics. Mechanization led to the preservation of food, production of furniture and clothing. Among other technological advances, 1860 brought the invention of the first railroad refrigerator cars, allowing for the long distance transportation and preservation of food. Soles were being mechanically sewn on shoes. Salmon canning on the Columbia River was established and by 1880 the United States was ranked first in agricultural products.

Immigrants arriving penniless were forced to live in tenements and boarding houses in the inner city. Brick row-houses and triple-deckers were inhabited by the more fortunate. The more affluent lived in comfortable town houses and suburban homes of significance. The immigrants were willing and able to work hard and long to provide their families with private homes and a better life.

Commuter trains, the horse and electric trolley allowed for commutation from home to work and vice versa. People no longer lived near their jobs, traveling five to twenty miles was common. An observer noted in the late nineteenth century, "Americans do not live in the centers of great cities, but only do business there, while their families live elsewhere."

Building increased with help of technology allowing for the mass production of materials, brick, cut stone, cast iron, wood and glass. Rail systems permitted the transportation of materials from their source.

Early Victorian houses had a variety of room sizes, rooms had multiple exposures, and floor plans were designed for convenience. Unlike prior periods, homes were not simple in shape, but elaborated by wings, projections, large windows and porches.



Later Victorian homes were taller than their earlier counterparts, and even more complex. There was a revival of the Classical period, with buildings more formal and squarish in shape.

*Raynham*, East Haven, Connecticut, 1802, rebuilt 1856. The house was built by the Townsend family, merchants in the New Haven area. It was one of the earliest estates built in the area. Located on a hill whose land sloped down to the water's edge, the house remains on its original site but most of its 100 acres have been sold.

The home is a Gothic Revival design made popular by architect Andrew Jackson Downing in his book *The Architecture of Country Houses*, published 1850. The style was a revival of medieval architecture found in England, France and other western European countries. Raynham is complete with a steep central gable decorated with bargeboards and a finial. Smaller gables and dormers are decorated with gingerbread trim. The house is asymmetrical in design with multiple porches and windows of differing sizes and a widow's walk around a tower at the back of the house. The roof tile is red and the exterior walls are a stone color, remaining consistent with the period of the house.

The Raynham is very well cared for and is inhabited by the Townsend family (fig. 15).

**Materials Used** clapboard; brick and stone-smooth for the Italian Villa style; cast iron used in the Gothic for hardware, fencing, hinges and roof cresting. Brownstone; wood—scored to resemble masonry, painted tones of red, gray, violet, green, blue; slate was used for the roofs—green, gray and red; masonry—dark red brick, black glazed brick, white mortar, carved limestone; shingles—brown, olive green, dark yellow, Indian red. Principal American Architects of the era: Richard Morris Hunt, McKim, Mead & White, Henry Hobson Richardson, Louis Sullivan.

#### *Vocabulary of Victorian Period*

cast iron	arched tall windows/pairs
cupola	corner quoins
mansard roof	corner tower
balconies	fish scale shingles
gable	dormer
gingerbread	conical towers
supporting arches	onion dome
turrets	colored tiles
Gothic windows	

## LESSON PLAN I

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***Objective To make students aware of the function of the school building.***

### ***Activity***

- ¥ Take a walking tour of the building.
  - ¥ Map the building—label map carefully.
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- A. Describe the map.
  - B. List items from large to small on the map.
  - C. Note the shapes of the building and the shapes formed within the structure.
  - D. Note the colors of the building, and determine which colors are strongest and which are weakest.
  - E. Describe the textures of the structure.
  - F. Enter all new vocabulary words into personal journals and onto index cards.
  - G. All activities generated in activities will be written in composition form and entered into journals.

## LESSON PLAN II

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***Objective To make students aware of the function of a home.***

- ¥ Take pictures of your home, apartment or any home of your choosing.
- ¥ Photographs will be developed in school or by teacher.
- ¥ Complete items A-G in Lesson Plan I, changing items A & B to homes rather than map.

## LESSON PLAN III

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***Objective To increase students' level of knowledge and awareness of architecture, environments, cultures and natural resources.***

- ¥ Use the text of the unit in conjunction with the fifth and sixth grade Social Studies texts.
- ¥ Follow steps A-G in Lesson Plan I to achieve objectives. Vocabulary words and observations to be recorded in personal journals.

## Conclusion

This unit was designed to provide the Social Studies teacher with supplementary materials on the history of American Architecture (Colonial-Victorian). This will enhance the core curriculum, enabling students to study buildings from different regions and different historical periods. It will promote an understanding of how the environment, culture and natural resources effect the design and structures of dwellings.

## Additional Resources in the New Haven Area:

Peabody Museum of Natural History

170 Whitney Ave. (P.O. Box 6666), New Haven, CT (432-5050)

The New Haven Preservation Trust

P.O. Box 1671, New Haven, CT 06507 (562-5919)

New Haven Colony Historical Society

114 Whitney Ave., New Haven, CT (562-4183)

## Final Unit Topic/Reading List

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Andrews, Wayne, *Architecture, Ambition and Americans* . New York: The Free Press, A Division of Macmillan Publishing Co., Inc., 1947.

Cummings, Abbott Lowell, *The Framed Houses of Massachusetts Bay, 1625-1725* . Cambridge: The Belknap Press of Harvard University Press, 1929.

Hitchcock, H. R., Fein A., Winston W., Scully V., *The Rise of an American Architecture* . New York: Published in Association with The Metropolitan Museum of Art by Praeger Publishers, 1970.

Kostof, Spiro, *America by Design* . New York: Oxford University Press, 1987.

Morrison, Hugh, *Early American Architecture from the First Colonial Settlements to the National Period*. New York: Oxford University Press, 1952.

Mullins, Lisa C., *Early Architecture of the South* . The National Historical Society, Pittstown, New Jersey, 1987.

Handlin, David P. *The American Home* . Boston: Little Brown and Company, 1979.

Pierson Jr., William H., *American Buildings and Their Architects* . New York: Doubleday & Company, Inc., 1970.

Wright, Gwendolyn, *Moralism and the Model Home*. Chicago: The University of Chicago Press.

### Reference List for Students:

Bergere, Thea and Richard, *From Stones to Skyscrapers*. New York: Dodd & Mead Company, 1960.

Lamprey, L., *All the Ways of Building a New Story of Architecture*. New York: The Macmillan Company, 1933.

Moore, L., *The First Book of Architecture*. New York: Franklin Watts, Inc., 1961.

Robinson, Ethel F. and Thomas P., *Houses in America*. New York: The Viking Press, 1936.

## Photographs and Illustrations

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Unless otherwise noted, photographs reproduced in this unit for educational purposes are through the courtesy of the Yale Photograph Collection, Yale University.

Figure

1. English Wigwam, Salem, Massachusetts (reconstructed), c. 1630.  
Cottage, Salem, Massachusetts (reconstructed), c. 1630. Typical New England Colonial floor plans, figures 3, 4, 5, hand drawn by D. Lev, reproduced from Hugh Morrison, *Early American Architecture*, Oxford University Press, 1952, p.21.
2. One room plan.
3. Two room plan.
4. Lean-to addition.
5. Parson Capen House, Topsfield, Massachusetts, 1683.
6. Parson Capen House, Topsfield, Massachusetts, 1683.
7. Adam Thoroughgood House, Norfolk, Virginia, 1636. West facade.
8. Adam Thoroughgood House, Norfolk, Virginia, 1636. South chimney.
9. Mount Pleasant, Philadelphia, Pennsylvania, 1761-1762.
10. Westover, Charles City County, Virginia, c. 1730-34. River/facade.
11. Monticello, Charlottesville, Virginia. First version, 1769-1772.
12. Monticello, Charlottesville, Virginia. First version, 1769-1772.
13. Monticello, Charlottesville, Virginia. Second Version, first floor plan, 1796-1809.
14. Raynham, 709 Townsend Avenue, East Haven, Connecticut, 1804 and 1856.

Courtesy of The New Haven Colony Historical Society, 114 Whitney Avenue,

New Haven, Connecticut 06510.

## Slides

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All slides accompanying this unit are for educational purposes and are through the courtesy of the Yale Slide Collection, Yale University.

### Slide

1. English Wigwam, Salem, Massachusetts (reconstructed), c. 1630.
2. Cottage, Salem, Massachusetts (reconstructed), c. 1630.
3. Parson Capen House, Topsfield, Massachusetts, 1683.
4. Parson Capen House, Topsfield, Massachusetts, 1683. Entrance hall.
5. Parson Capen House, Topsfield, Massachusetts, 1683. Floor plan.
6. Parson Capen House, Topsfield, Massachusetts, 1683. Cutaway.
7. Adam Thoroughgood House, Norfolk, Virginia, 1636. West facade.
8. Adam Thoroughgood House, Norfolk, Virginia, 1636. South chimney.
9. Mount Pleasant, Philadelphia, Pennsylvania, 1761-1762.
10. Westover, Charles City County, Virginia, 1730-34. Facade.
11. Westover, Charles City County, Virginia, 1730-34. Iron Gate.
12. Monticello, Charlottesville, Virginia, 1768-1809.
13. Monticello, Charlottesville, Virginia. 1768-1809. West & South side.
14. Monticello, Charlottesville, Virginia. First version 1769-1772 (Pickens).
15. Monticello, Charlottesville, Virginia. Remodelling Plan 1796.
16. Pingree House, Salem, Massachusetts, 1805.

*(figures available in print form)*

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