Early American Architecture Related to Constitution Hall State Park

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In 1968, members of the Board of Governors of the Huntsville Historical Society, Including Mrs. Burke Fisk, president of the society; Dr. Frances Roberts, Mrs. Anna W. Rosborough, and Dr. W. M. McKissack, formed a committee to reconstruct the place where the Constitutional Convention was held on August 2, 1819, for the purpose of entering Alabama as the twenty-second state of the Union. On August 10, 1970, the committee met with Harvie Jones, of Jones & Herrin Architects, to formulate a plan for constructing Constitution Hall State Park at the original site, on Gates Avenue, one-half block south of the Madison County Courthouse. The committee had envisioned the Park after preparing a map of "1819 Huntsville," which had been accomplished after seven years of examining early newspaper articles, want ads, deeds, and assorted letters kept over the years by descendants of some of the first Huntsville families. It was felt that the Park with its historical emphasis would complement the Alabama Space Museum in Huntsville and the new Civic Center to be located near the downtown section of the city. In September, 1970, the site was purchased by the State Department of Conservation.
Methods of Architectural Research

Normally, a modern architectural firm tries to keep up to date on the latest methods and materials available in the building trade, but in the case of Constitution Hall things were a little different since we were moving into the past instead of the future. The research phase, which preceded the construction drawings, was divided into three parts: first, meeting with the Constitution Hall Committee to obtain as much background material on early Huntsville as possible; second, acquiring detailed information on construction from the many books available; and finally, visiting many of the houses built in Huntsville in the early 1800's which are still standing and occupied.

We met with the committee and pondered the following questions: from what areas of early Alabama did the pioneer settlers come? what was the special attraction that made them want to settle in this area of the Tennessee River Valley? how good was their education, and what traditions did they bring with them? was Twickenham (later Huntsville) just another frontier town? are some of the early trails into Madison County still in existence today? were there any photographs, maps, written accounts or descriptions of buildings on the site in 1819, still available? As answers to these and other questions emerged we got a very good picture of what Huntsville looked like in 1819.

We found that in 1805 beginnings were crude with John Hunt and others building their log cabins above the Big Spring. The 1809 federal land sales in Nashville, Tennessee, however, set the boom rolling toward Madison County and people began arriving from Virginia down to Georgia. Most of the new-
Overview sketch of proposed Constitution Hall State Park by the author, John Martz.
comers were well-educated English planter families, who brought with them their money and resources to make a living. Roads leading from Huntland and Pulaski, Tennessee, were among the first main routes into this area. Areas south of what is now Jackson County, and below the Tennessee River, were still part of Indian lands, thus forcing people from Georgia to circle as far north as Chattanooga before coming into Twickenham. The Big Spring was highly important to the growing community, for from it came an abundant supply of fresh, clear, limestone water. The valley land was also very fertile and ideal for growing such crops as cotton, corn, tobacco, and wheat. It was found that by 1818, Huntsville was having vigorous trade, both by river and overland, with the port city of New Orleans. A theater, art gallery, and newspaper were here. Two schools of higher learning were known to have existed. Many handsome residences were described.

In our research we were unable to locate any photographs of the town site before 1890. However, we did find an excellent 1861 map of Huntsville showing three of the original 1819 buildings to scale, and indicating their building material to be of wood frame or brick. These three were the Boardman building, where the print shop of "The Alabama Republican" newspaper was located, and which included the adjacent library; the Clement C. Clay building, which housed a post office and surveyor's office; and the Stephen Neal house which was a typical residence of that period. We found that Constitution Hall before 1819 was a cabinet maker's shop and furniture store owned by Walker Allen. The second floor to the same building was used as an assembly hall in which theatrical groups lived and performed while in town.

There were many other structures on the site in
1819, as indicated in deeds and newspaper articles, but these had little significance to the Constitutional Convention. We did, however, think that reproductions of some of the various out-buildings would add color to the Park, so, a horse stable, carriage house, and a necessary house will be included in the project. Elegant landscaping in the 1819 style is also planned.

Next, detailed architectural information was needed on how buildings were constructed, what styles of architecture existed in 1819 with a range from simple dwellings to the beginning "white pillar" era, and from what periods and places influences were derived. For most of this information libraries and various books were consulted. In this research phase, emphasis was placed on information about pre- and post-1819 architecture, not only in this country, but throughout the world. The late Renaissance in Europe had special interest, for the people who came to this country often brought their European customs with them. Such names as Chippen-dale, Hepplewhite, Wren, Jones, Gibbs, Morris, Adams, and many other eighteenth century European architects and designers were prominent authors of handbooks on styles of architecture and furnishings including formulae for orders and details. Many of these handbooks were imported into this country after the American Revolution. Architects were few in the early days of the new nation, and so the art of building houses and other establishments of living and working were left chiefly up to the carpenters, who often used these handbooks for any detailing or room arrangements required. Asher Benjamin was one of the first architects in this country to publish a handbook on architectural styles for building use. Benjamin himself, styled many of his own
buildings after Bulfinch (e.g. New England churches, meeting houses, and apartments). Fortunately, copies of these handbooks are still available today, making it possible for us to obtain much invaluable information about early buildings in America. It was also a very timely lesson on what to look for as we went into the third phase of research. The periods that we were directly involved with are listed chronologically.

**Colonial Period** (early 1600's to 1780) - characterized by the boldness in color and form of the late Renaissance in Europe.

**Federal Period** (1780 to 1820) - evidenced a more delicate use of color and form, with abandonment of the provincial style of the Colonial Period. The Roman Orders of architecture were used, for it was felt the new states had their closest analogy with that of the ancient Romans. Handbooks for carpenters usually included a set of the Roman column proportions at the beginning of each publication with adaptations to shape mouldings of wood for fireplace mantles, chair rails, cornices, baseboards, and window and door trim.

**Greek Revival Period** (1820 to 1861) - the succeeding higher order of architecture after the Roman era was also typified by adaptation of column proportions, this time the Greek temples.

**Victorian Period** (1850 to 1898) - known as the Gothic Revival in this country, developed into a new eclecticism using older forms of architecture found. The primary reason for studying Victorian styles was to distinguish what not to look for in early Huntsville.

Several significant dates had direct or indirect bearing on the method in building. Most of the iron and brass hardware used in this country before
1790 was imported from Europe. The few iron foundries here at this time produced raw rod or strap iron stock, but little hardware. The local blacksmith of each town would often take this rod or strap iron stock and forge it into hinges, hasp, nails, wagon ware, and other items the townspeople requested. Machine cut nails were imported around 1800. They did not have a round shaft and head as modern nails do, but were square, being cut from strap iron stock, with an offset lip at the head. Screws in the early 1800's did not have points as today. A hole was first drilled before the screw was inserted and turned into the wood. Wood hardware became an excellent substitute when metal hardware was scarce or too costly.

The year 1830 marked the beginning of the Industrial Age in the United States. Water powered mills sprang up and replaced pit sawing lumber by hand. With the invention of the rotary saw, the old method of framing a wood house with post-and-beam using wood pegs and mortise-and-tenon joints, gave way in 1833 to the balloon frame method of building. The ornate detailing of Greek Revival was made easier by using the newly invented machines.

The third and most enjoyable phase of research involved touring a few of the many existing houses actually built in Madison County in the 1810's and 1820's, and applying the two previous areas of study. It was in this part that we became detectives. Many additions and changes were usually made to the original building, over the years, and these had to be distinguished before dimensions, elevations, profiles of mouldings, and photographs could be taken. The pre-and post-1819 studies thus paid off, and accurate physical information was obtained.

Several general considerations had to be kept in
mind during this period of intense observation. Modern conveniences like electricity, gas, and pressured water did not exist, of course. Candles for light, fireplaces and wood stoves for heat, and wells or water cisterns were among the best substitutes our fore-fathers had. Clothing, especially in winter, was heavier. Few powered machines were available, thus parts of wood and metal had to be worked by hand. The curved lines of the rotary saw could be set apart from the rough straight cut of the pit saw. The perfect appearance of drop-forged hardware lacked the individual character possessed by hardware produced on a blacksmith's forge. Hand plane marks were readily noticed on wall boards and doors. Handmade brick also had a color of its own, and often a person or animal would leave his print pressed into the face. Slave labor had its impact on the local economy and building construction. Without it, many of the great strides in developing the area would not have been realized.

Williamsburg, Virginia, with little limestone to use in construction, made good use of clay brick and wood. One author noted that the blacksmiths mainly made hardware for buildings and wagons since horses could go unshod on the sandy, clay coastal plain. Madison County, on the other hand, had a plentiful supply of limestone, and implemented the stone to the fullest, making such items as stone foundations and chimneys for buildings, stone steps, carriage or horse mounts, carved stone dairy troughs (refrigerator adjacent to well house), and bases for foot scrapers.

When a newcomer bought land with plans for permanent settlement, he would often build a small one-room house at the rear of his lot, to serve as living quarters until time and money were available to erect
the big house. When the big house was completed on the front of the lot, the small house could be transformed into a kitchen, or used as servants quarters.

Room sizes in most buildings were based on a module of eighteen or twenty feet square. Hallways were eight to ten feet wide in smaller dwellings and up to twelve feet wide in larger dwellings. We found in most examples of Federal Period architecture having hallways, a centered door in one side of the hall would open into a room with a fireplace also centered on the wall opposite the door. A stair leading up to a second floor hall and room was also a common occurrence. Some houses were two rooms deep, others had rooms on either side of the stair hall, and in various combinations.

Flooring boards and structural joist/rafters were taken from a wood log that had been quarter-sawn using a pit saw. This method of cutting would expose the edge grain of the wood, giving a more durable wearing surface on the floors and strength without warping the structural members. We found several samples of wood used in the above manner and counted rings for density. The number of rings per inch varied from twelve to sixteen as compared to eight rings per inch in today's high-yield forestry methods.

Roofs were mostly of cedar or cypress shingles, cut from a short log edgewise using a froe. Smoothing, if needed, was done with a draw knife. Looking up through the roof from inside, daylight could be seen. These openings provided good ventilation in the attic or loft spaces. One might wonder why the roof didn't leak. When the rain started to pour, the dry wood shingles soaked up the moisture to swell and seal the openings from the outside climate. When the rain stopped the shingles opened up again. A
recognizable characteristic of the older buildings was the absence of attic vents in the eave wall adjacent to the roof peak. Attic wall vents did not become a part of the building design until sheet iron and/or tar paper roofs became popular around 1825. Gutters and downspouts were available in 1819 Huntsville, as a newspaper ad pointed out. Buildings without gutters would often have water tables and splash aprons of brick or stone at the foundation.

Glass sized for windows and doors was shown in advertisements to range from 8"x10" and 10"x12" to 12" panes. The larger windows and glass panes were usually reserved for the front or side of the house. As a matter of prestige, when even larger panes of glass became available, entire windows would be changed to keep in style. The smaller windows were left to the rear parts of the main building and more subordinate out-buildings. Early imported glass was only 1/16th of an inch and streaked with bubbles and lines. Wood shutters were necessary for protection against strong winds and storms. Extensive use of glass light transoms over doors, both interior and exterior, took maximum advantage of natural daylight conditions.

Shutters over windows of commercial and residential buildings varied. In most cases a business would have solid wood shutters with some locking device at the first floor windows to prevent vandalism. The second floor windows, if there were any, probably had louvered shutters until thicker glass could be obtained. At that time, from what we observed, shutters at the second floor windows were eliminated. Residences had wood-louvered shutters over all windows, thus providing ventilation and preventing direct sun from penetrating room interiors during the hot summer months. In most cases, half
or all of the louver blades on each shutter were adjustable to vary the amount of light and privacy. Even the doors had large louvered shutters over their exterior to help carry natural convection air currents through the house.

Wood doors varied from the crude rough sawn plank type, in some cases finished with hand plane and beaded edges, to the two, four, and six paneled doors with moulded edges and mortise-and-tenon joints. Heavy doors 1 3/4" thick were found on exterior walls, while lighter doors 3/4" and 1" were used in the interior. A common size found was three feet wide by six feet four inches high. One exterior door decorated in a characteristic English way was located. Upholstery nails (boullion tacks) had been driven into the entire outside face of the door in a diagonal pattern. This or the same manner of decoration was mentioned in The Builder's Dictionary by Francis Price, published in London in 1734. Price had probably seen one of the European medieval church doors with its diagonal spikes, and thought it unique for his handbook.

Many regional differences were noticed among building trends in New England and the South. In the northern states, roofs had a higher pitch for shedding snow; low ceilings seven to nine feet; lower windows because of the low sun angle; smaller in area to keep in heat; and massive chimneys usually located in the center portion of the house to retain heat for the longer and colder winter season. In the southern states, roofs had a lower pitch, high ceilings about nine to twelve feet for summer coolness and ventilation, higher windows because of the high sun angle, and larger ventilation area. Chimneys, used fewer days out of the year, were less massive and usually built on the outside wall.
Building Types in the South

The three structures built in the South at the beginning of the nineteenth century were the log cabin, the wood frame with post-and-beam framing, and the masonry bearing which was usually brick with wood floors, ceilings, and roof. Several sources consider the log cabin an invention of the Swedish people who immigrated to America. In Sweden, timber was abundant, and wood logs, having good insulating qualities and fire resistance, suited their living conditions adequately. It is quite possible that other European immigrants found the log cabin style and method of building to their liking, and copied from the Swedes. The logs, taken from land cleared for farming, were usually squared with an adz, and dado or double saddle joints were made at the building corners before lifting the finished log into place. Chinks, or openings, left between the logs were filled with dobe. Again, room size would average around eighteen feet square. Some log houses would have a loft to increase the area for sleeping quarters. The "dog trot" was felt to be an adaptation by the English, with their predilection for central hallways. The method of building with logs is timeless, some log houses being constructed even today.

Wood frame structures are believed derived from the early Tudor style half-timber structures in England in the 1500's. Clapboard soon took the place of brick infill and stucco plaster in America because of dampness and termites. The order of construction was much like the Dutch barns in Pennsylvania today. First, piers of rock were placed where the corners were to go. Next, the sill beams were placed on the piers and joined at the corners with
wood pegs. Corner posts were erected and braced diagonally both ways with the sill beam, using mortise-and-tenon joints and wood pegs. Frequently, a brace would determine how far away from a corner doors and windows were located. In this locale, doors and windows were a minimum two studs or four feet from the building corners. The roof beams, or second floor beams on two storied buildings, were then attached. Notches were cut for floor joist and wall studs at two foot intervals. Roof framing was put up and wood shingles applied. Clapboard siding was nailed to studs and wood flooring laid, using nails or wood pegs.

Post-and-beam was easily recognized from the exterior by the way the corner trim was applied. A single corner board 1 1/2" x 6" was nailed to the long side of the 4"x8" corner post with the clapboard butted to both sides. Plaster on wood lath strips, or planed wood boards were applied to the inside walls. If plaster was chosen, often a chair rail protected the walls from damage by furniture. Trim and rails were attached to the studs before plastering was begun. A chimney of stone or brick was constructed with a fireplace, making the building ready for occupancy. Room arrangements varied according to the needs of the individual family.

After consulting the plan measurements of the 1861 map, we felt that both the Stephen Neal house and the John Boardman building were originally wood frame English row type houses. The front of these structures, built without porches, was located on the Madison Street property line.

Newspaper accounts of events were found confirming that type building. Constitution Hall was also a wood frame building designed to house a commercial establishment on the first floor and a
meeting house on the second floor. A person touring the Park when it is completed will be able to see examples of the exposed wood joinery especially in the outbuildings.

Masonry buildings were arranged similarly to the wood frame types, with the exception of walls of solid brick twelve and eighteen inches thick, and heavy wood lintels of cedar or poplar over windows and doors to support the wall above. English and Flemish bonding of the brick seemed to have been the trend, from both a decorative and structural standpoint. Ends of brick would sometimes have a gray colored glaze resulting from firing, which was put to decorative use in walls, a solid foundation of stone or brick was built up to support the floor joist. Structural foundation vents of 1 1/2" square cedar rods joined vertically in a cedar frame, would be placed in the walls to keep dampness from under the building and prevent rotting of wood members. Sometimes, if a foundation settled, and the wall had tilting-outward tendencies, an iron rod would have to be run through the building with plates or ties at each end to keep the masonry walls from spreading farther. In our exploration of remaining buildings of the early 1800's, the number of bricks existing are much greater than the number of frame houses still here. The library adjacent to the south side of the Boardman building and the Clement C. Clay building will be the main masonry structures in the Park area.

After much pondering, the architects decided that the best approach to the reconstruction would be to build all houses, offices, and shops as if new in 1819. No attempt to wear finishes or artifically age each building will be done. We have been approached by several people who had parts from old buildings, but
found that nail holes and finishes made the parts difficult to incorporate into the project since these parts would be antiqued, and would force artificial antiquing of all new parts to appear consistent. The freshly done buildings will transport visitors back 150 years when the structures were new.

When construction begins on Constitution Park, it is hoped that the back or alley side of all existing stores facing the south side of courthouse square will be arranged into shops and stores to relate to the Parks (i.e. souvenir shops, restaurants, antiques, etc.). Many displays are planned including maps of the area, tools and furnishings used by our ancestors, documents including a copy of the first Alabama Constitution, a display on archaeological digs done at the site, and other displays on building methods. The Park should intensify efforts to preserve the many old architectural examples still existing, our best and most vivid link with history. The project, it is believed, will give a new spiritual boost, not only to Huntsvillians, but to all who are interested in Alabama history, tourist and native alike.