

Annaberg Sugar Mill

National Park Service
U.S. Department of the Interior

Virgin Islands National Park
St. John, U.S. Virgin Islands



Sugar Cane and Colonial Expansion in the Americas

Annaberg stands today in bold testament to a time when "sugar was king." The ruins represent a colonial-era processing facility known as a "sugar works," designed and built exclusively for the large-scale production of raw cane-sugar and its two valuable byproducts, rum and molasses. It was constructed between 1797 and 1805, at the pinnacle of the great sugar boom of the turn of the 19th century. By the 1400s Europeans had developed a taste for sweets. At this time, sugar cane - a plant native to southern Asia - was the only known source for sugar, a fact that left Northern Europe dependent on Asian and Mediterranean growers as the primary suppliers of the product. But this was soon to change. On his second voyage to the West Indies in 1493, Columbus brought sugar cane to the tropical Americas, where it flourished. Eager to cash in on the vast potential for trade and agriculture in the region, the dominant European nations of the period all raced to establish American colonies, and, by the seventeenth century, sugar cane had become almost exclusively a "New World" crop.

Denmark and the West Indies

Before their purchase by the United States in 1917, the U.S. Virgin Islands were a colony of Denmark. The Danes, however, were relative latecomers to the Caribbean. By the time Denmark successfully established its first West Indies colony on St. Thomas in 1672, all of the larger and more agriculturally productive islands of the Caribbean had long since been occupied and claimed by other nations. With arable land at a premium, it was not long before the Danish-sanctioned settlers on St. Thomas sought to expand their colonial holdings. On March

25, 1718, Governor Eric Bradel, accompanied by five soldiers, twenty planters, and sixteen enslaved laborers, landed in Coral Bay to claim the island of St. John in the name of the Danish Crown. As with all European colonies throughout the Eastern Caribbean, the heavy burden of establishing and manning plantations fell to thousands of enslaved Africans and their descendants, who rapidly came to represent the vast majority of the region's population.

The Annaberg Plantation

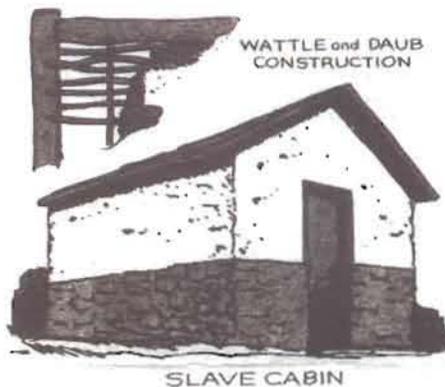
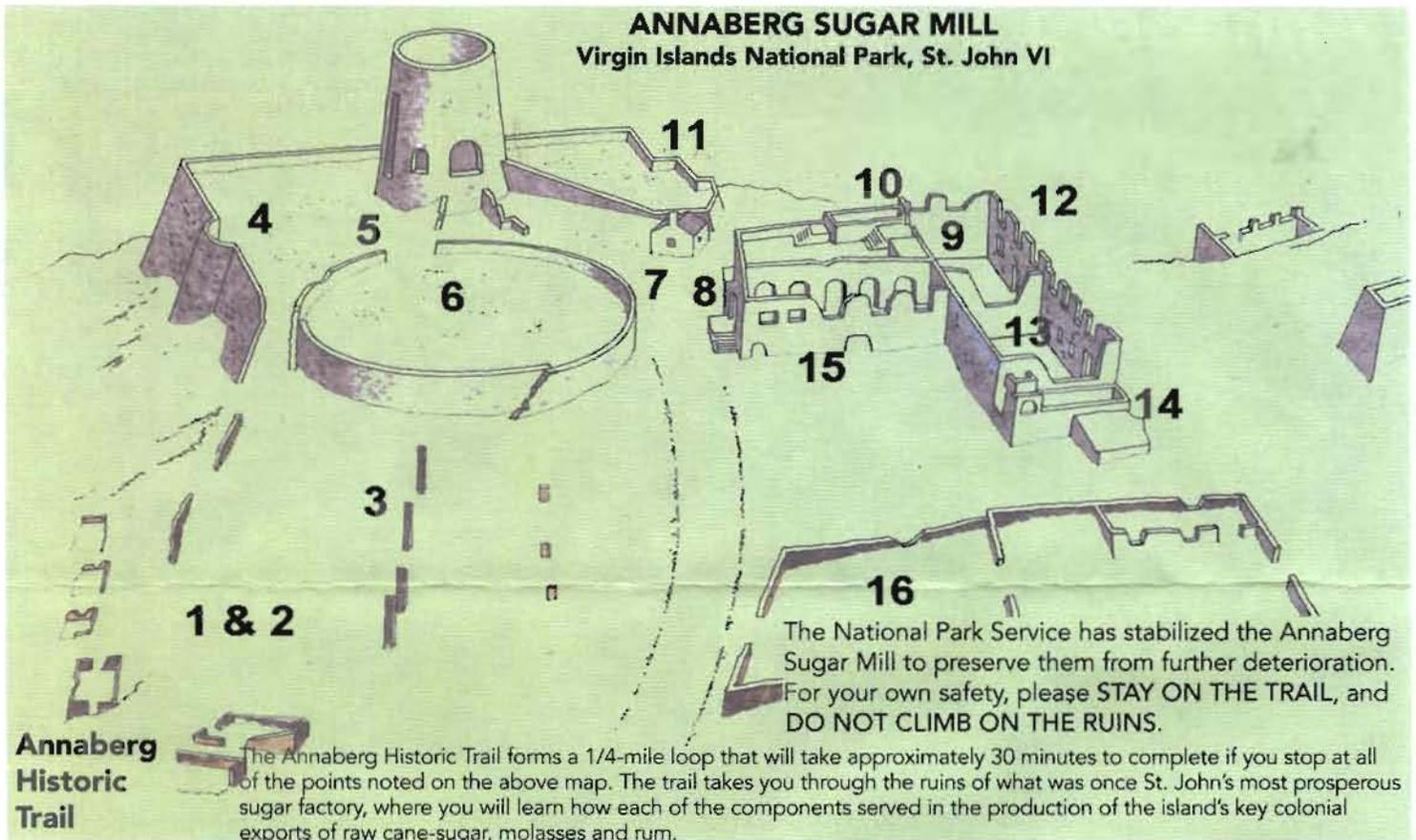
The diverse backgrounds of the inhabitants of the Danish West Indies are clearly evident in a list of Annaberg's owners. The first deeded land holding in the area was taken up in 1721 by a French Huguenot refugee, Isaac Constantin; upon Constantin's death, ownership of the plantation passed to his son-in-law, a Dane, Mads Larsen; and, in 1758, the property was purchased by Salomon Zeeger, a Dutch immigrant from the island of St. Eustatius. It was Zeeger who named the property Annaberg (meaning Anna's Mountain) to honor his wife, Anna deWindt Zeeger.

In 1796, James Murphy, an Irish-born merchant and slave trader based on St. Thomas, purchased Annaberg along with a number of neighboring properties and combined them to form a single,

vast sugar estate. Upon his acquisition of the property, Murphy set out to construct a new, state-of-the-art "sugar works" and tower windmill on the site of the former Zeeger plantation, and a grand, estate house on a hilltop east of Water Lemon Bay. By his death in November of 1808, James Murphy had become the single largest producer of sugar on St. John. His combined land holdings totaled nearly 1,300 acres, and 662 enslaved workers toiled on his properties.

Although some modifications associated with production downsizing were made to the Annaberg factory in the mid nineteenth century, it is the ruins of the sugar works built during James Murphy's ownership that are encountered on the site today.

ANNABERG SUGAR MILL Virgin Islands National Park, St. John VI



Above: Illustration of a typical slave cabin. This is most likely what the cabins at the Annaberg Sugar Mill looked like.



Left: Cutting sugar cane in the hot Caribbean sun, using a short, heavy knife called a "cane bill"

1 Village of the Enslaved Laborers – On the slope below this wall stands the remains of a sprawling slave village. Sugar production throughout the West Indies relied almost exclusively on enslaved labor, and Annaberg was no exception. Planting, harvesting and processing sugar cane required a tremendous amount of hard work. Only enslaved labor made sugar production profitable, and during the 17th and 18th centuries the African slave trade developed hand-in-hand with the rise of the Caribbean sugar industry.

2 Slave Cabins – At the peak of sugar production on Annaberg there were at least 65 slave cabins in the laborers village. While some of these cabins had stone foundations, most were simple "wattle and daub" structures with thatched roofs made from palm fronds or cane leaves. In wattle and daub construction, posts were set into the ground to form the frame of the building. Thin branches were then woven between the posts to form "wattle" walls. Once the wattle was in place, the walls were plastered with "daub," a thick mixture of mud, animal dung, quicklime and water. Floors were generally packed earth with a thin layer of lime mortar.

3 Magass Shed – In the Danish West Indies the spent stalks of sugar cane, after the juice had been squeezed out, were known as "magass." Magass was stored and dried under an open walled shed to later be used as fuel for the furnaces in the sugar factory. These stone columns once supported the roof of Annaberg's magass shed.

4 Look Around You – When Annaberg was operational, most of the hillsides above you were cleared and planted in sugar cane. Before the sugar cane could be planted, the rocky slopes were terraced and the soil was turned and fertilized. Depending upon weather conditions, it took a year or more for sugar cane to reach maturity and be ready for harvesting. When the sugar cane was ripe, field slaves cut and stripped the leaves from the cane stalks with a heavy, blunt-ended knife called a "cane bill." The stalks were then bundled and conveyed to one of the factory's mills, where the juice was extracted by a crushing process. Sugar cane grown high on the hills at Annaberg was slid down to the factory level on long wooden skids, a process known as "shooting sugar." The bundles were then loaded onto mule carts and delivered to the mill where enslaved laborers performed the dangerous task of hand feeding the stalks into the crushing machinery.

5 Windmill Tower – If a steady wind blew, the freshly harvested sugar cane was brought to the windmill for processing. Revolving "sails" turned a central shaft, which rotated a set of three large rollers. A wooden turret at the top of the windmill tower could be rotated to point the sails into, or away from the wind to engage or disengage the machinery. The turret was controlled from the ground by a long wooden pole known as a "tail tree." A small built-in fireplace inside the windmill provided light and warmth. It may also have been used to heat water for washing the rollers. Enslaved laborers passed the sugar cane between the

mill rollers, which crushed the stalks and squeezed out the juice. The juice then ran down the rollers into a receiving tank where it was held until the factory was ready to process it. When ready, a gate on the "receiver" was opened and the juice flowed by gravity through a lead-lined wooden gutter into tank in the "boiling house" (see #8) called a "clarifier."

The Annaberg windmill was among the largest on St. John. It is thirty-four feet in diameter at the base, twenty feet at the top, and thirty-eight feet high. Windmills were not unusual in the Virgin Islands. Some 140 windmills once operated on St. Croix, which was the most successful of the Virgin Islands in terms of sugar production. St. John, however, only had five windmills, and their period of operation was relatively short.

6 Horse Mill – In calm weather, or when the windmill was out of service, cane stalks were crushed on a circular platform called a "horse mill." Here, oxen, mules, or horses harnessed to long poles produced the power to turn a shaft that rotated three upright, iron-clad rollers in the center of the platform. Just like at the windmill, enslaved laborers passed the cane between the rollers, which crushed the stalks and released the juice. A "receiver" at the base of the rollers caught and held the juice until the factory called for it. Today, none of the actual machinery that made up the horse mill or the windmill remains at Annaberg. The small cook shed that now stands on the horse-mill platform was built by Carl Francis long after the factory ceased operation.

7 Oven – Bread prepared for the enslaved workers was baked in this oven. The baker filled the large chamber with burning wood and charcoal. When only the hot coals remained, the embers were raked through a hole at the back of the oven into an ash box below. Bread was baked by the heat which remained trapped in the oven, not by open flame.

8 Boiling House – In this room cane juice was boiled down into a thick syrup that, when cooled, crystallized into crude brown sugar called "muscovado." The boiling bench along the west wall originally held two "batteries" of four round-bottomed kettles each, referred to as "coppers." A large receiving tank called the "clarifier" stood at the center of the boiling bench. Sometime in the 1800s the boiling bench at Annaberg was downsized to a single set of four coppers. Cane juice from the mills entered the boiling house through the square hole in the wall directly above the north end of the boiling bench. The boiling process began in the largest coppers, like the one remaining, and as the juice condensed it was ladled into successively hotter and smaller coppers. Furnaces fed with wood and magass heated the coppers from beneath. During the boiling process, lime powder or ash was added to the juice to help separate impurities by floating them to the top. Workers skimmed off these impurities, which were collected and used in the rum making process or fed to the estate's animals.

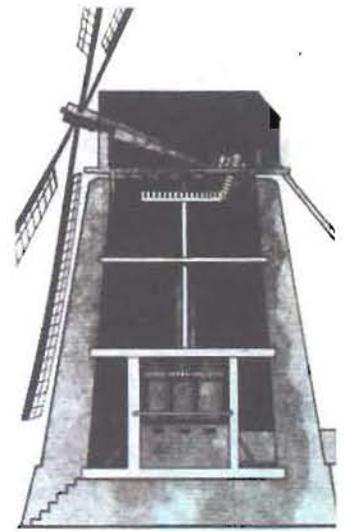
Knowing when to remove the condensed juice from the last copper was the job of expert "sugar cookers" who were among the most valued of the enslaved workers on a plantation. If the juice was left in the copper too long it would burn, but if it was removed too early it would not crystallize upon cooling. When the proper moment arrived, workers ladled the concentrated juice into shallow wooden cooling pans located along the wall on the east side of the boiling house. During the cooling process the sugar was raked to avoid clumping and insure that uniform crystals formed. Once cooled, workers scraped the raw sugar into wooden barrels that were taken to the "curing house" for the final step in the sugar-making process (see #9). Each barrel held up to 1,600 pounds of muscavado sugar. Once it arrived in Europe or North America the muscavado was further processed into the refined white sugar we are all familiar with.

9 Curing House and Overseers' Quarters – Exiting through the doorway on the eastern side of the boiling house you will see two sets of stairs in front of you. One set gave access to the water cistern (see #10), while the other led up to the quarters of the plantation overseer and his assistant. Through an opening next to these stairs you can look down onto the ground floor of the area of the factory known as the "curing house".

Once filled with crystallized sugar from the cooling pans, barrels of wet sugar were sealed and holes drilled in the tops. The barrels were then moved to a second-story room in front of you, where they were placed upside down on an open grating. Over the course of a week or more, the excess liquid in the barrels slowly drained and was collected in a tank at the eastern end of the ground-floor room below. This sweet, sticky liquid was "molasses," and the tank it was collected in was called the "molasses cistern." While most of the molasses produced at Annaberg was barreled and sold, some was kept and used in rum production (see #13). Once fully drained, the holes in the barrels were sealed and the sugar barrels were lowered to the ground-floor storage area along the east wall to await export.

10 Water Cistern – A great quantity of water was needed to process sugar and rum, as well as to support the people living and working on the estate. As potable ground water was not readily available, rain was collected off the factory roof and stored in the "water cistern." This cistern holds about 20,000 gallons. Water for use in the factory was also collected in a reservoir located high on the hill above the factory. An elevated aqueduct carried the water by gravity from the reservoir to another cistern just upslope behind the factory.

11 Dungeon – A chain and a pair of handcuffs were found fastened to a post in the left corner of this small chamber. At Annaberg one or two overseers were responsible for controlling a large enslaved labor population. Under such conditions tension ran high, and during the 19th century one overseer at Annaberg was poisoned while another died under suspicious circumstances. Desertions and worker resistance were also common. Force, therefore, was often seen as a necessary deterrent, and punishments such as detainment were dealt out liberally by the overseers. For more serious offenses, the local judge in Cruz Bay was empowered, and indeed mandated by law, to take harsher measures.



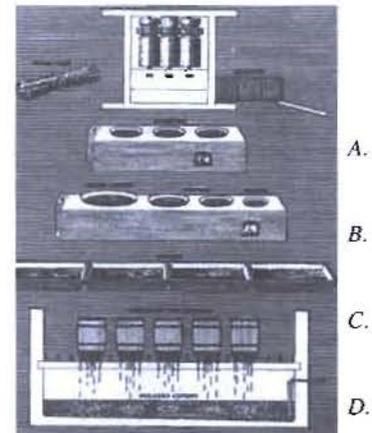
Above: Cutaway illustration of tower windmill, showing how the inner machinery operated.

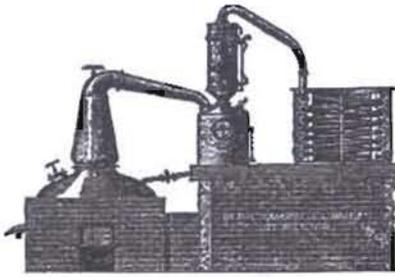


Above: Illustration of an ox mill in operation. A covered mill such as this would have been built on the level track where the cook shed now stands.

Below: Illustration of many of the items to be found inside the factory building.

- A. The clarifier
- B. The boiling coppers in their line
- C. The wooden cooling pans
- D. The barrels of freshly made "wet" sugar draining off excess liquid in to the drippings cistern





Above: Illustration of a typical 19th century rum still. A device similar to this once stood on the platform described at post 14.

Below: a merchant ship at anchor in the Caribbean. As a colony of Denmark, much of the sugar produced on St. John was sent by ship to Copenhagen, where it was refined into white sugar and sold by the city's numerous trading houses.

Though the islands would not be a territory of the United States until 1917, the Caribbean sugar trade had a profound impact on American History. Sugar, molasses and rum became key commodities for American merchants in the 17th and 18th centuries. Money gained through the West Indian sugar trade would go on to build such prominent American cities as Boston and New York. To learn more about this era of American History, visit "www.nps.gov/sama".



The Final Years of Sugar Production at Annaberg

James Murphy's heirs retained title to Annaberg until 1862. Throughout most of this period Annaberg remained a profitable sugar estate, with production levels exceeding 100,000 pounds of raw sugar per year as late as 1845. However, soil depletion, sagging sugar prices, and the emancipation of enslaved laborers throughout the Danish West Indies in 1848, all served to drive down production. By 1861, Annaberg's sugar crop yielded less than five thousand pounds of raw sugar.

In 1863, Annaberg was purchased by Thomas Letsom Lloyd of Tortola. For a time, Lloyd struggled to keep the estate in operation, but in 1867 a violent hurricane, followed by a series of devastating earthquakes, finally put an end to sugar production at Annaberg. With his factory in ruin, in the spring of 1871 Thomas Lloyd sold Annaberg to his property overseer, George Francis, and returned to Tortola.

The Era of Farming, Animal Husbandry and Cottage Industry

George Francis was born enslaved on the Annaberg plantation. His name first appears in the earliest existing census for the property compiled in 1835, in which he was recorded as a thirteen-year-old field laborer. Over the course of his life, George Francis encountered opportunities that in his youth must have seemed wholly unimaginable. By 1860, he had gained the position of estate overseer, and two years later he received outright title to a 2-acre parcel of land on the Annaberg property by the will of his former owner, Hans H. Berg.

In 1871, George Francis acquired the entire Annaberg estate from Thomas Lloyd, and immediately set out

12 Have you noticed the building materials? Field stone (rough fragments of volcanic rock) was used in the construction. Rocks were set with a mortar consisting of sand, fresh water, molasses, and quicklime fired from sea shells and coral. When arches or corners called for square or specially shaped stones, both brick and cut coral were used. The bricks were brought to St. John as ballast in ships, while the coral was harvested from offshore reefs. When taken from the sea, coral is relatively soft and easily cut, but when dry it becomes extremely durable. Note the coral blocks lining the doors and used as cornerstones in the buildings.

13 Still House – The "still house" was the heart of rum production at Annaberg. Along the east wall you can see a paved platform and the faint plaster outline of two cisterns. This is the area where the fermentation tanks known as "butts" were located. We know from estate records that during the height of production at Annaberg there were two 300-gallon, and four 200-gallon butts in the still house. The butts were filled with water, molasses, and other sugar-rich waste products collected throughout the sugar-making process. Once fermented, this mixture was called "mash." The mash was then distilled to make rum (see #14). Rum exited the distilling process through pipes in the wall at the west end of the still house where it was collected in half-barrels before being sealed into casks.

14 Rum Still and Worm Cistern – This platform supported the factory's rum stills and once contained a furnace with a short chimney. Between the still platform and the still house is a large water tank. Originally, two 250-gallon stills stood in this location. A quantity of mash was put into the still chamber and brought to a boil. The rising steam contained alcohol vapors, which were forced into coils of copper tubing that were submerged in cool water. These copper coils were known as "worms" and the water tank they were submerged in was the "worm cistern." As the hot alcohol vapors cooled in the worm, they reverted to liquid in the form of rum. Raw rum exited the worm into the still house where it was barreled and stored. Normally, rum was aged in the cask for several years before being sold. Every estate had its own methods for aging and curing its rum. For dark rum, a small amount of molasses was added.

15 Firing Trench & Furnace – Here enslaved laborers fed wood and magass into the furnaces that heated the coppers inside the boiling house. At one time a tall chimney was located at the center of the "firing trench" to provide the draft that drew heat through the furnace tunnels.

16 Ox pound – This stone-enclosed paddock was used to contain the estate's work animals. It once had a covered stable area at the south end. While it is commonly referred to as an "ox pound," we know that mules were the primary beasts of burden at Annaberg. Estate records reveal that in 1809 there were twenty-seven mules and two horses on the property.

to renew sugar production on the property. At the time of his death in 1875, Francis had recently completed the construction of a new sugar-boiling house and horse mill on the isthmus between Mary's Creek and Francis Bay. It was the last facility ever to produce sugar on the Annaberg property.

After George Francis's death, his family found it difficult to cope with the finances of the estate, and in 1876 Annaberg was sold to St. Thomas merchant Antoine Anduze. Anduze retained an overseer on his St. John properties and converted the former Annaberg crop lands to pasture.

Annaberg remained in the hands of Antoine Anduze and his heirs until 1899. In that year, George Francis's son, Carl Emanuel Francis, repurchased Annaberg when the property was put up for auction due to delinquent taxes. Carl Francis and his family resided amidst the ruins of Annaberg until just prior to his death in 1936. Like most St. John residents of this period, the Francis family lived a somewhat frugal and self-sufficient existence. They grazed livestock, grew provision crops, and produced quicklime and charcoal. Over the years, Carl Francis rose to be a prominent and respected island figure. He served as the St. John representative to the Colonial Council, acted as Clerk and Lay Reader to the Nazareth Lutheran Congregation in Cruz Bay, and raised the first United States Flag over St. John in the transfer ceremonies held at the Cruz Bay Battery on April 15, 1917.

Carl Francis sold the Annaberg estate to Herman O. Creque in 1935. It was from the Creque heirs that the Jackson Hole Preserve purchased the property in 1954. Annaberg was officially turned over to the National Park Service in 1956.