

The Newport Tower Project

An archeological investigation into the Tower's past

**by
Jan Barstad**

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INTRODUCTION

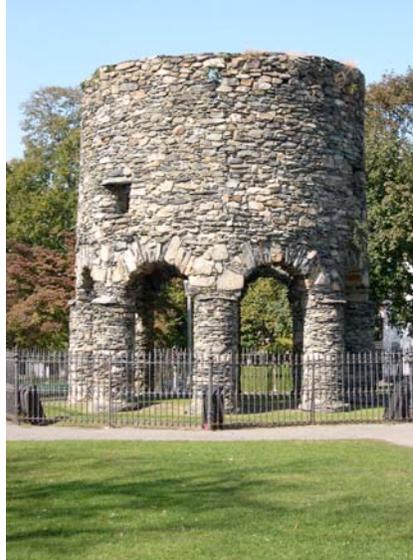


Fig. 1. The Newport Tower. Photo by Ron Barstad.

Who built the Newport Tower?

Also called the Old Stone Tower, Touro Tower, Old Stone Mill or, simply, The Tower, standing near the west end of Touro Park in Newport, Rhode Island, the round stone structure and the park surrounding it owe their existence to the generosity of Judah Touro, who in 1854 gave the City of Newport \$10,000 to buy the land on which the tower stood, so that the land would not be developed into home sites (Means, 1942). Founded in 1639, the town of Newport had grown up the hill from Narragansett Bay and Newport Harbor to engulf the meadows that lay above the shore. Judah Touro and others ensured that this tiny scrap of land was preserved, so that the Newport Tower has stood in its pretty little park ever since, undisturbed except by dogs and their owners, tourists, historians, and other curious persons (Fig. 1).

In 2004, a member of the Newport Historical Society explained, “We’re 99.9 percent sure the tower was built as a windmill by Governor Benedict Arnold in the 17th century.” When asked about the remaining 0.1 percent of doubt, the member added, “Oh, well, the public does so love a good mystery, we like to leave a bit for them” (anonymous personal communication, May 12, 2004). Not a mystery at all, but a puzzle: the Tower was built by someone, at some time, for some purpose. It is a puzzle with many missing pieces and so has been argued about for almost two centuries. It has been variously thought to be 12th-century Norse, late 14th-century Scottish, early 15th-century Chinese, early 16th-century Portuguese -

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and perhaps even early Basque but undated - and 17th-century British Colonial. Fisticuffs have ensued at 20th-century City Council meetings; angry notes have been exchanged in scholarly journals; heated arguments have been overheard at parties; and one Rhode Island citizen claims that his Channeler told him he had been a Viking in another life, who had helped build the Tower.

What is this curious structure, about whose origin 0.1 percent of doubt remains?

The tower is circular, constructed of mostly unworked local stones set in mortar of several different types owing to repairs over the years. At ground level are eight round columns of the same rubblestone work as the walls, connected by eight round arches made of flat stones set on edge so that the bases form a smooth curve on the arches' undersides (Fig. 2); none of the arches has a keystone. Approximate height of the whole roofless structure is 26 ft.; approximate diameter is 23 ft. (Means, 1942).



Fig. 2. Tower Arch. Photo by Ron Barstad.

The inner face of the tower is complex (Fig. 3, after Rowe, in Means, 1942). At the top of each column is an irregularly shaped beam-hole that once carried squared beams to support a floor. Farther up the wall is a set of four smaller beam-holes, which apparently carried a second floor (B1-B12 in Fig. 3). Above the level of the first floor are four

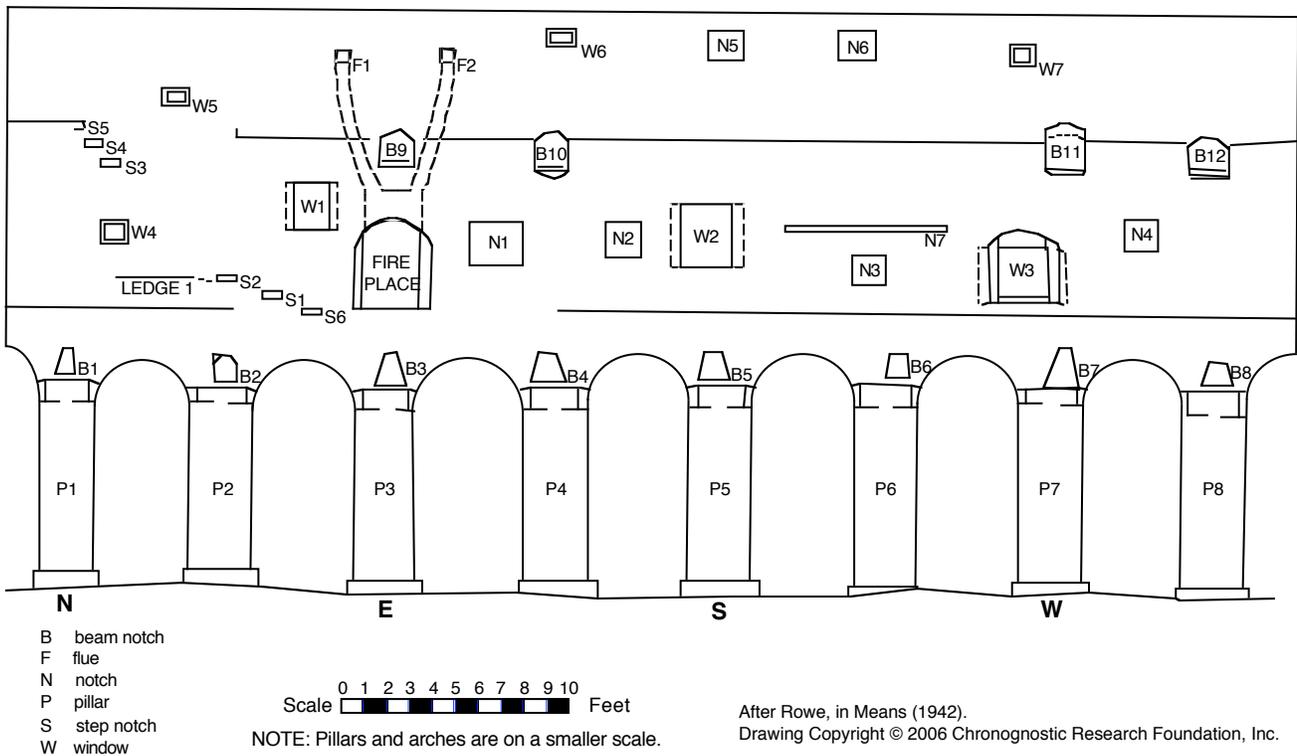


Fig. 3. Unfolded elevation of inside Tower wall (after Rowe, in Means, 1942).

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windows, three of which are double-splayed. The window on the west wall is largest and features an outside lintel made of one flat stone with a relieving arch immediately above it (Fig. 4), and on its inner side a rounded arch whose shape and style echoes the eight main arches (Fig. 5). A fourth, very small window opens above the arch between columns 1 and 2, and three windows, also very small, are located in the wall above the second floor (W1-W7 in Fig. 3). Five niches are spaced along the wall above the first floor; four are roughly rectangular, and the fifth is very long and narrow, prompting a conjecture that it may have supported one edge of a table. Two more niches are found high on the wall above the second floor (N1-N7 in Fig. 3). Six holes that may have held wooden steps are spaced at intervals diagonally from just above the arch between pillars 2 and 3 into the first floor area, and again up into the second floor (S1-S6 in Fig. 3). A fireplace is built into the east wall, with one large, blackened stone as a hearth, and an overhead arch again resembling the eight main arches (Fig. 6). The firebox extends more than 1 ft. above and behind the arch, and a flue rises from each outer corner of the firebox, up through the wall in a rough Y shape, exiting through two small openings at the top of the wall (E1 and F2 in Fig. 3); at the top edge of each exit hole is a larger stone, protruding so that rainwater will not enter the flue. Nothing remains of any interior wooden structures.

Touro Park itself (Fig. 7) lies between 80 and 90 ft. above sea level and extends west from Bellevue Avenue to West Touro Park Street between Mill and Pelham Streets, in what is now central Newport. The 1.8-acre city park was carved out of meadowland in 1855; most artistic representations before that date show the tower standing alone in a grassy meadow above Narragansett Bay. An oil painting attributed to Gilbert Stuart, supposedly painted between 1770 and 1775 (which Means used as a frontispiece in *Newport Tower*), also pictures men throwing hay onto a hay-wain in the foreground (Fig. 8, from Means, 1942). Today, the park contains the tower near its west end; a statue of Rev. William Ellery Channing, who faces his Unitarian Church across Pelham Street; a flagpole in an island in the center



Fig. 4. Window, exterior. Photo by Jan Barstad.



Fig. 5. Window, interior. Photo by Ron Barstad.



Fig. 6. Fireplace. Photo by Ron Barstad.

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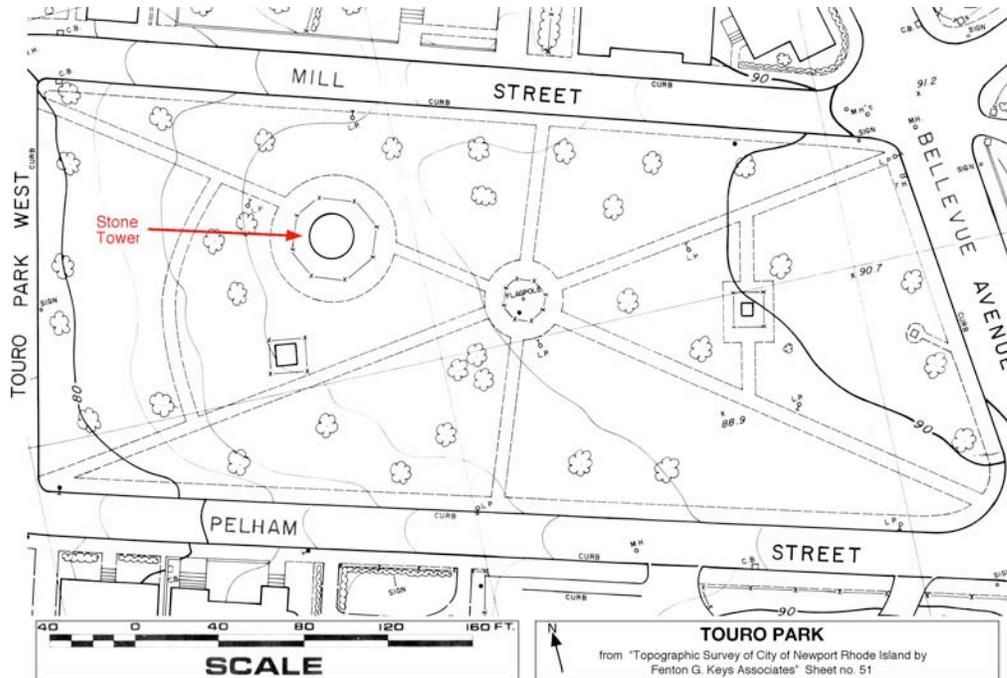


Fig. 7. Topographic survey map, Touro Park. Courtesy City of Newport Engineering

of the park, surrounded by an asphalt path and benches; a statue of Commodore Matthew Perry; two main asphalt paths on long diagonals crossing each other at the flagpole, joined by three subsidiary paths, one through the flagpole circle in the middle and one each at the east and west ends of the park; and descriptive signboards. The statues, tower, and flagpole are lighted by spotlights at night. Mature trees shade the park, mostly around its edges.

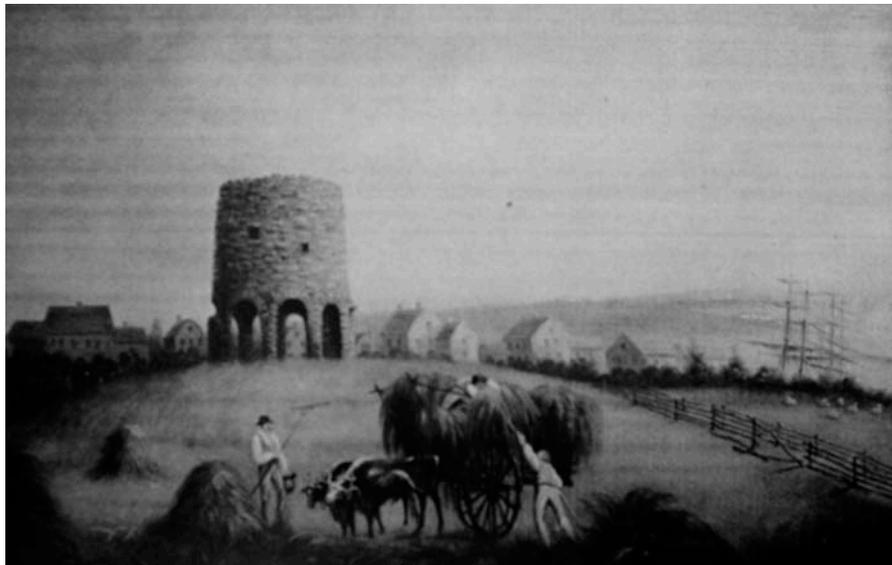


Fig. 8. Oil painting of Newport Tower, attributed to Gilbert Stuart, c. 1770-1775 (in Means, 1942).

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HISTORY OF THE TOWER

Benedict Arnold

The question of “Who built the Newport Tower?” has a long and contentious history. It first became part of the written record in the will of Governor Benedict Arnold, dated 1677. Gov. Arnold sat down on Christmas Eve that year to name his executors, describe where he wanted to be buried, and distribute his considerable property among his wife, Damaris, eight surviving children, and some associates. He orders:

My body I desire and appoint to be buried at ye North East corner of a parcell of ground containing three rod square being of and lying in my land in or near ye line or path from my dwelling house leading to my **Stone built Windmill**, in ye town of Newport, abovementioned, the middle or center of which three rods square of ground is and shall be ye tomb of my grand-child Damaris Goulding...(Fiske, 1998, my emphasis)

Distribution of his property required a great many more words, since he owned a great many acres; calculating from the will, one finds that he had amassed, by his 62nd year, 4,932 acres, including his one-third interest in Dutch Island ($\frac{1}{3}$ of 94 acres). Sixteen acres pertain to the tower, the will reading as follows:

...I do also give and bequeath unto ye proper use and behoof of my said wife Damaris Arnold, during her naturall life and after her decease to ye use and behoof of my dearly beloved and youngest daughter Freelove Arnold, all and singular ye lands and buildings severally hereafter mentioned in particular, that is to say my dwelling house and lands, buildings and tenements hereafter named, namely one tract of land being and lying in ye precincts of ye foresaid Town of Newport containing by estimation sixteen acres distinguished into two parcells by a highway belonging to ye said Town and bounded severally as followeth, that is to say, the lesser parcell whereon is erected my Warehouse and Wharf, and bounded as followeth on ye East by ye highway aforesaid, on ye South by a parcell of land I have bequeathed unto my son Oliver Arnold, on ye West by the sea or harbour of Newport, on ye North by land now or late in ye possession of Pardon Tillinghast or his assigns, ye other and greater parcell of ye tract of land abovesaid upon which standeth my dwelling or mansion house and other buildings thereto adjoining or belonging as also my **Stone Built Wind Mill** and in the said parcell is being and lying ye three rods square of ground abovesaid that I have set apart for a burying place ye whole parcell being bounded as followeth, on ye West by ye highway aforesaid on ye part of ye North and part of ye East by a quillet of land containing fifty foot square that I sold and now or late in ye possession of Jeremiah Brown, and on ye rest of ye North by a highway belonging also as ye aforesaid highway to ye said Town, on ye East by land now or late in ye possession of Walter Clarke or his assigns save only as ye Town may order a highway between and on ye South by land I have bequeathed to my son Josiah Arnold, he ye said Josiah Arnold his heirs or assigns being to maintain a good and sufficient fence in ye line between ye premises and his said land. (Fiske, 1998, my emphasis)

A summary of 17th-century prose is helpful: Gov. Arnold willed one 16-acre tract of land, in two parcels (divided by the highway owned by Newport), to his wife Damaris, to be passed on to his youngest daughter Freelove; on the parcel closest to the water were his warehouse and wharf, on the larger parcel farther east his dwelling house and associated buildings, his burying ground, and his “Stone Built Wind Mill”.

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In other words, he owned the land on which the tower stood, and he mentioned the tower twice in his will, as a marker to identify the location of his burying ground and the acres he wished to leave to his wife. He did not say he built the tower.

In 1675, a war began between the English colonists of Massachusetts and local Native American tribes, called King Philip's War after the Wampanoag Chief Metacomet, son of Ousamequin, who was known as King Philip. Rhode Islanders viewed the war as an aggressive effort by Massachusetts to assert control over as much of Rhode Island and Providence Plantations as it could; several prominent Rhode Islanders tried to negotiate a peaceful settlement, but to no avail: they too had been involved in aggressive land acquisitions. The war continued through 1676 and took its toll on Rhode Island; all of its mainland settlements were burned, and refugees crowded onto Aquidneck Island for safety (McLoughlin, 1978). Benedict Arnold was Governor of Rhode Island in 1677 during that tumultuous period (Aquidneck Island had been renamed Rhode Island in 1643); since he owned at least 1,000 acres at Beaver Neck on "Quonanaquit" Island and 2,500 acres in the Pettaquamscutt Land Purchase on the mainland as well as many other parcels (Fiske, 1998), he was high on the list of those aggressively acquiring land.

After Arnold's death in 1678, the tower and its acreage passed to his wife, then to his daughter, Freelove, who married Edward Pelham in 1682 (Pane-Joyce Genealogy, 2005). Pelham left the tower to his daughter, Hermione, wife of John Bannister, and Bannister left it to his sons, John and Thomas, in 1767; by 1791, it was owned by William Peck, who sold it to Jeremiah Olney in 1794; George Gibbs Jr. bought it from Olney in 1799. In 1848, when historian Benson Lossing visited former Rhode Island Governor William C. Gibbs in Newport, the tower had belonged to Gibbs for 40 years. Gibbs told Lossing that the British had used the tower as a powder magazine during their occupation of Newport from 1776 to 1779 and tried to blow it up with a keg of gunpowder when they left. Though there is no proof of this, the painting Means attributed to Gilbert Stuart seems to corroborate it: the tower is shown as being significantly higher than it is today. Even then, it was depicted as roofless. In 1855, the City of Newport purchased the tower and the land on which it stood with the funds from Judah Touro and other contributors (Means, 1942). So the Tower had at least *belonged to* Benedict Arnold, from some time after he moved to Newport in 1651 until he died in 1678.

David Melville

In 1847, there crept into the literature of the Tower the notion that Gov. Arnold had modeled his "Stone Built Wind Mill" after an English windmill, the Chesterton Windmill near Warwick in Warwickshire, near which Arnold was said to have been born. The perpetrator of this notion was David Melville, a Newport pewterer, who had chanced upon a picture of the structure in the November, 1836, issue of *Penny Magazine of the Society for the Diffusion of Useful Knowledge*. Melville made the connection, and from about 1847 to the present, the

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Chesterton windmill (Fig. 9) has been held to be Arnold's model for his own windmill in Newport, by Melville and many others (Means, 1942).

Carl Christian Rafn

In 1829, Carl Christian Rafn, Danish secretary of the Royal Society of Northern Antiquities in Copenhagen, was preparing his monumental work on Northmen in the New World before Columbus. Rafn contacted the Rhode Island Historical Society about possible Norse traces in Rhode Island, and Dr. Thomas H. Webb, the Society's secretary, sent him a wealth of material but didn't describe the Tower to him until 1839, after a long correspondence. At that point Rafn published "Account of an Ancient Structure in Newport, Rhode Island, the Vinland of the Scandinavians, Communicated by Thomas H. Webb, M.D., in Letters to Professor Charles C. Rafn, with Remarks Annexed by the Latter." This appeared in 1839 in *Memoires de la Société Royale des Antiquaires du Nord, 1836-39* and was included in a reissue of Rafn's *Antiquitates Americanae* in 1841. Rafn promulgated the theory that the Newport Tower was built in the 12th century by the Norse under the leadership of Eric Gnutsson, a bishop from Gardar, Greenland, sometime between 1112 and 1121. Rafn never visited Newport and never saw the Tower but made his claim based on a drawing by F. Catherwood (Means, 1942).

"Saga of the Skeleton in Armor"

In 1841 Henry Wadsworth Longfellow wrote a poem entitled "The Saga of the Skeleton in Armor," 20 totally fictional stanzas about a Viking and his lady love who decamp to Newport, where he builds her a "bower" - the Tower in Touro Park (Longfellow, 1841). The poem was such a long-standing success that, in 1884, when the Sanborn Map Company (©2004 Environmental Data Resources, Inc.) brought out its first set of fire insurance maps for the City of Newport, a romantic cartographer identified the circle he drew to represent the Tower in Touro Park as "THE NORSEMAN'S TOWER ~ LONGFELLOW'S 'THE SKELETON IN ARMOR'". This romantic annotation appeared again in 1891 but was gone from the 1896 map, a welcome return from poetry and myth to history and cartographic science.

George Channing

George Channing of Newport discussed the Tower in 1868; Means (1942) quoted Channing at some length to show that, by this time, some people in Newport were beginning to doubt the Arnold theory. Part of the quotation from Channing's *Early Recollections of Newport, R.I., from the year 1793 to 1811* (1868) reads:

The very style and grace of the structure preclude the idea that it could have been erected upon an almost barren waste, merely to grind Indian corn to powder. Not a vestige of any similar edifice has ever been seen on this continent...

It strikes me as reasonable as any previous theory regarding this unaccountable handiwork, that a race of men, unknown to modern times, might, upon reaching this beautiful spot (finding stone in abundance, with shells and sand easily convertible into mortar), be impelled to rear a memorial of some familiar home legend... (from Means, 1942).

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HISTORY OF RESEARCH

Philip Ainsworth Means

Philip Ainsworth Means (1892-1944), a specialist in Latin American archaeology, appears to have been the first researcher to pull together many threads relating to the Tower, all culminating in his 1942 book, *Newport Tower*. He researched exhaustively the reports and squabbles dating back to the early 1800s; he brought together drawings, paintings and photographs; he had John Howland Rowe and fellow students from Brown University photograph and measure the Tower; and he traveled to the British Isles, France, and Scandinavia in the late 1930s to search for 12th-century prototypes (especially round churches) and 17th-century mills, also looking for the latter in America. One of his contributions to the Tower saga was his research on the lineage and career of Governor Benedict Arnold (1615-1678).

Means learned from parish records and other sources that Arnold had been born, not in Warwickshire in the north central part of England, but in the southern county of Somerset. He was born to William Arnold, middle-class tailor and churchwarden, and his wife, Christian, on December 21, 1615, at Northover, a suburb of Ilchester. In 1635, William Arnold removed his family, some relatives and friends from Ilchester and sailed for America from Dartmouth, Devonshire; this group of Separatists from Anglicanism arrived in Massachusetts in June, 1635, and the Arnold family settled in Hingham but moved in 1638 when William became one of 13 “proprietors” of the Pawtuxet Purchase (McLoughlin 1978). While living in Providence, Benedict married Damaris Westcott, also originally from Somerset. In 1651 he moved to Newport and by 1653 was a landholder and a voting member of the town. He served first as President, then as Governor of Rhode Island (after the Charter of 1663 was obtained), off and on for many years.¹

The Chesterton windmill (Fig. 9) began life in 1632 as an observatory for Sir Edward Peyto, Cromwellian governor and defender of Warwick Castle in Warwickshire (Binns, 2005). While the famed 17th-century architect Inigo Jones and/or his student(s) were building Chesterton House for Sir Edward, they also built the matching, sophisticated limestone-and-sandstone tower with six columns, four elegant windows, and a rotating metal roof topped with a finial. Some have called the tower simply a “lookout post,” but it should be remembered that in 1609, Galileo Galilei (1564-1642) invented an 8–power telescope and found the four moons of Jupiter. The same year, Thomas Harriott, observing near London, made a drawing of the Moon, which he viewed through a 6-power telescope. In 1610, Galileo published *Siderus Nuncius*, in which he called Jupiter’s four moons the Medicean Stars, and Harriott saw the

¹ www.rootsweb.com/~rigenweb/governors.html; www.rootsweb.com/~rinewpor/articles.html#mill; aleph0.clarku.edu/~djoyce/gen/report/rr02/rr02_195.html#P36228.

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moons for the first time and began to observe sunspots. By 1630, Galileo had completed and published *Dialogue Concerning the Two Chief World Systems* and was in deep trouble with the Catholic Church (VanHelden, 1995; www.galileo.rice.edu). As a result of this activity, astronomy was all the rage early in the 17th century, but only wealthy men were able to practice the newborn science in their own back yards. Sir Edward Peyto employed the great Inigo Jones to design and build not only his manor house but also some kind of an observatory complete with rotating roof. The structure was converted into a windmill sometime in the 18th century, apparently in response to a drought when a local watermill was out of commission. No one seems to have been able to put a specific date to the conversion.²

Means tried hard to uncouple the Newport Tower from the Chesterton windmill, saying bluntly that since Benedict Arnold had not been born anywhere near Warwickshire, had left England with his family in 1635, and in any case would have been in no position to hobnob with landed gentry (since he was the middle-class son of a middle-class tailor and churchwarden), he could hardly have patterned a windmill in Newport after an observatory in Warwickshire. The attempt failed, even to the present day: at www.whitnashwindmills.co.uk/history.html the reader will find a *reverse* reference: the Chesterton windmill in England compared to the Newport Tower in Rhode Island.

After his close study of European churches and windmills, Means concluded that Benedict Arnold couldn't possibly have built the Tower but that the Norse of the 12th or 13th centuries had done the work. Still, he said, "The circular arcaded tower at Newport continues to be the most enigmatic and puzzling single building in the United States.... Until the excavation is done we shall never know for sure by whom it was built...or when...or why..." (Means, 1942).

William S. Godfrey Jr.

Means died in 1944 and never knew that his wish for a scientific excavation was granted in 1948, "...when the Preservation Society of Newport County, backed by the scientific integrity and weight of the Society for American Archaeology (SAA), persuaded the Park Commission to permit judicious excavation in the vicinity of the structure to determine its origin" (Godfrey, 1949). An SAA committee was in charge of the project, fieldwork supervisor was archaeologist Hugh Hencken of Harvard University, and Harvard anthropology student William S. Godfrey headed the excavation (Carlson, 2001).

By the end of the 1948 field season, after limited excavation under the Tower, Godfrey had found coins ranging in age from 1696 to



Fig. 9. Chesterton windmill, Warwickshire, England. From www.windmillworld.com

² for details on the Chesterton windmill: www.warwickshire.gov.uk/Web/corporate/pages.nsf/Links/155D9C8F3E61BDB6802571020049F89D; and www.windmillworld.com/uk/chesterton.htm

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1946, glass bottles from different eras, hand-forged and machine-made nails, and old and new lighting equipment. A 74-foot-long (22.6m) trench dug from under the Tower ESE into Touro Park revealed tree roots, remains of a posthole, an animal burrow, and some bone and shell (Early Sites Research Society, 1994). He found nothing older than the 17th century, though he did realize that there had been several “unauthorized” digs before his, the latest by a park superintendent who removed a thick layer of concentrated pigeon droppings, substituting nine inches of light gray clay in an attempt to get grass to grow on the ground inside the Tower. Godfrey refused to speculate about the possible builder of the Tower, saying that the summer’s work had been inconclusive (Godfrey, 1949).

By the end of the 1949 field season, Godfrey could “state without fear of contradiction that we know when the Old Stone Mill was built and inferentially who built it.” He wasn’t especially happy to be able to do this: “It is my unfortunate lot to give a conclusive answer to the Newport Puzzle, so that I may never again be able to go to Newport without the fear that someone will be after my scalp...” (Godfrey, 1950).

Godfrey found that 1) the Tower was laid out in a perfect circle on the ground; 2) above a layer of yellow clay used to refill the trench was a large deposit of plaster fragments with smooth surfaces “as if they had fallen from the Tower, which was originally coated with a smooth plaster layer.” 3) a layer of brown Colonial earth passing under four of the columns contained a pistol flint; 4) four items grouped together were significant: a rusty nail, a fragment of flat glass, a fragment of orange pottery with no markings; and another, identical pottery fragment with a small area of glaze (Dr. Hencken identified the latter fragment as 17th-century based on a comparison of paste, color of glaze, and type of interior finish with examples from the John Howland House in Plymouth [1628-1673]); and, 5) in the construction trench, two fragments of clay pipe and the imprint of a square-heeled boot Godfrey believed was made by a Colonial workman when tamping down the brown earth in the trench; he made a plaster cast of the heel mark (Godfrey, 1950).

From this evidence, Godfrey concluded that he knew *who* had built the Tower and *when*: “Either Governor Arnold built the Tower, or one of his contemporaries did.” Within the layer of plaster fragments, however, Godfrey found a thin layer of ash but not nearly enough to represent the burning of whatever timber structure had been in the Tower. So he refused to speculate on a reason for the building of the Tower, and asked the question, “*Why?*” which he posed to future researchers (Godfrey, 1950).

Arlington Mallery

Arlington Mallery was a civil engineer and bridge designer interested in the Viking presence in North America (Carlson, 2001). In 1954, he and two City of Newport engineers re-examined Godfrey’s excavation and concluded that the trench around the Tower could not have been the original construction trench but another, dug in the 17th century to repair and

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strengthen the columns. He felt that this could explain why Godfrey found 17th-century artifacts under the pillars (Mallery, 1955; Early Sites Research Society, 1994; Carlson, 2001).

Heinemeier, Jungner, and Hertz

No research about the Tower seems to have been undertaken again until 1993, when Jan Heinemeier and Högne Jungner used a new C-14 dating technique to date the mortar of the Tower. They took seven samples of mortar from the Tower itself, and a small piece of mortar from Newport's Wanton-Lyman-Hazard House (known to have been built between 1676 and 1698) as a control (Heinemeier and Jungner, 1994; McCulloch, 2001). In 1995, the Danish-sponsored *Committee for Research on Norse Activities in North America: AD 1000-1500* presented its findings after four years of study: there was a 95 percent probability that the Newport Tower was built in the late 17th century, possibly between 1635 and 1698 (Heinemeier and Jungner, 1994; McCulloch, 2001; Carlson, 2001). Johannes Hertz, Deputy Antiquary of the Danish National Museum, supported the statement, based on the evidence presented by William Godfrey after his 1948-49 excavations, photogrammetric computer-generated drawings used to search for evidence of units of measurement, and Heinemeier's and Jungner's C-14 dates. He considered architectural style but did not spend much time on this aspect, stating that in-wall fireplace flues were known to be used in European windmills (Hertz, 1997).

Soon after the presentation of the Danes' research, Daniel Snyder, then executive director of the Newport Historical Society, wrote an article in the Newport (R.I.) Daily news, in which he announced that the reports, translated from Danish, soon would be published in the society's quarterly journal, *Newport History*. Snyder noted the torrent of letters resulting from the research and stated, "These reports conclude that the carbon dating yields a 95 percent confidence level that the tower was built between 1635 and 1698, and that the documentary, archaeological and architectural evidence all point to a similar date and to Benedict Arnold or one of his contemporaries as its builder" (Snyder, no date).

Objections about the dating method were voiced soon afterward, one concerning faulty chemistry used in the method (McCulloch, 2001), and another questioning the photogrammetry (Carlson, 2001).

Early Sites Research Society

Between 1992 and 1994, the Early Sites Research Society, under archaeological director James Whittall, conducted two ground-penetrating radar (GPR) surveys in Touro Park, a preliminary scan in 1992, and on May 25, 1994, a complete survey of Touro Park. Weston Geophysical Company of Westboro, MA, performed the geophysical operations. In his summary of the 1994 survey, Whittall wrote that 181 anomalies were listed and noted on the site plan; depth of the anomalies ranged from 2 ft. to 10 ft. He realized that some of the

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anomalies could be utility trenches, large stones or even boulders, and that one was left with a limited number of anomalies suggesting “an archaeological potential,” including a “possible slab or buried long object.” He concluded: “The Newport Tower does not exist in a void. It has a very definitive relationship with the area that surrounds it: Touro Park.... Certainly, the groundscan has opened the possibilities of some interesting archaeology relating to the area surrounding the Newport Tower, and perhaps even shedding further information on the origin and date of the Tower’s construction....” (Whittall, 1994).

William Penhallow and Suzanne Carlson

William Penhallow, Rhode Island professor of astronomy, undertook in 1998 to investigate an array of possible alignments for viewing celestial events through the Tower windows. He believed that the angle of splay in each window (different for each window) was meant to facilitate the viewing of the rising and setting of the sun and moon at the equinoxes and solstices (Penhallow, 1998; Carlson, 2001).

Suzanne Carlson, of the New England Antiquities Research Association (NEARA) and an historical architect, published a monograph on the Tower in 2001. Entitled “Loose Threads in a Tapestry of Stone: the Architecture of the Newport Tower,” it covers each facet of the Tower’s architecture, the theories regarding the Tower, information on Benedict Arnold, Dr. Penhallow’s archaeoastronomy, and a mammoth compendium of European church architecture of the various periods in question within the theories of the Tower’s origin, and how such architecture could relate to the Tower. Carlson also describes the probable building process involved in erecting the structure. As an architect, she was able to estimate how long it would take to plan and build the Tower (about 1 1/2 years); what materials would have to be assembled, in what quantities, and how transported to the site; and how many people, representing how many specialties, would be required for the work (Carlson, 2001). After all, no matter what the era, building any structure is a process that takes a finite amount of time, a finite number of workers and materials, at a finite cost. One example of Carlson’s details should suffice to bring home the nature of the work involved in building the Tower in Touro Park: “*Stone: Good assortment of granite fieldstones, free from weathering cracks or other defects: **About 450 tons.***” (Carlson, 2001, my emphasis)

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TOWER ORIGIN THEORIES

Portuguese Knights Templar

In 1500, Gaspard CorteReal took ship to the recently-discovered New World. When he didn't return to Portugal, Miguel CorteReal organized an expedition and set off in 1502 to find his brother. He too never returned to Portugal but may have left his name and a date, 1511, on Dighton Rock near Taunton, Massachusetts. Dr. Manuel Luciano Da Silva, "physician, historian, and archaeologist-epigrapher," believes that one or both of the CorteReal brothers built the Tower so that rescuers could find them on the North American coast (the brothers were never found). Dr. Da Silva believes that the Newport Tower is modeled after the Charola (an octagonal altar area) in the Knights Templar Church at Tomar, Portugal (Da Silva, 1971; www.dightonrock.com).

Chinese Treasure Fleet

In his book, *1421, the Year China Discovered America* (2003), retired British submarine commander Gavin Menzies put forth the theory that sometime in the 1420s or early 1430s, a Chinese treasure fleet rounded the Cape of Good Hope and sailed into the Atlantic Ocean, where it explored throughout the Caribbean and up the coast of North America. Because the fleet had lost some ships, the crew landed in Narragansett Bay and founded a colony for the people the ships couldn't carry back to China, promising to return to rescue them. The colonists built the Tower as a lighthouse to guide their rescuers which, says Menzies, resembles the Zaiton lighthouse at Quanzhou except that it has three floors instead of five (Fig. 10). Alas, the fleet never returned to North America, for the Chinese emperor, Zhu Di, died in 1424, and his son refused to send out the ships because of their enormous cost. The Chinese colonists, abandoned on the North American coast, amalgamated with native peoples whom Giovanni de Verrazzano found one hundred years later.



Fig. 10. Zaiton lighthouse at Quanzhou, China. Photo courtesy Jeremy Green, Maritime Archaeology Department, Western Australia Maritime Museum,

Scottish Navigator Prince

Descendants of Prince Henry St. Clair, Baron of Roslin (Scotland) and first St. Clair Earl of Orkney, believe that their ancestor first sailed to Greenland in 1393 and set foot on North

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American soil in 1398. Prince Henry first sailed west with a fleet of 13 ships under a Venetian sea captain, Nicoló Zeno, later with Nicoló's brother Antonio. They explored Nova Scotia and moved south, where they went as far inland as Westford, Massachusetts. Prince Henry, says Andrew Sinclair in his book, *The Sword and the Grail* (2002), planned to build a "second city" in the New World (the first being the fortress of Louisburg on Cape Breton Island, Nova Scotia), and he built the Newport Tower as a Templar church and watchtower in Narragansett Bay. Like the Chinese, however, Prince Henry went back to his home country and never returned to North America: around 1400, while in the Orkney Islands, he had the misfortune to get himself killed by the English, and his son never pursued the colonization.

Norse Settlement

The theory that the Norse built the Newport Tower in the 12th Century has as many adherents as the 17th-century British Colonial Theory. The Norse story goes back into the late 10th century, when Icelander Eric the Red, exiled from Iceland for three years because he had killed a man, bought a boat from a friend and went exploring to the west, having heard there was land out there. He found the land and, when he returned to Iceland after three years, he was able to tell his fellow Icelanders that the land he had found was green, empty of people, and theirs for the taking if they would come with him. Iceland had filled up since Norse farmers had settled it in the late 800s, and the promise of a new place, green and empty, caused a swarm of settlers, in 25 ships, to accompany Eric back to the land he called Greenland. Only 14 of those ships arrived, but the colony got underway and, according to one estimate based on Vatican Archives records, may have increased to nearly 10,000 souls at the height of its development in the 1300s (Jelic, 1891).

In about 999, Eric's son, Leif Erikson, spent a winter at King Olaf Tryggvason's court in Norway. The king convinced Leif to convert to Christianity and to take a priest back to Greenland with him. Leif's father was incensed and called the priest "the hypocrite," but his mother, Thjodhild, took to the new religion and built the first Christian church at Brattahlid (Sturluson, in Hollander, 1964).

During the next one hundred years, the Greenland church grew, but it ran into a problem: it had no bishop. This was a serious matter in the 12th century: no bishop meant no consecrated churches, altars, vessels, or ground in which to bury Christian dead. As a result of these lacks, Greenlanders were apparently thought to be Christians but not "of the faithful," a situation any Christian of that time would consider dire. Sometime after 1100, the Greenlanders sent a delegation, headed by Einar Sokkason, to Norway to beg for a bishop. Accordingly, in 1112 or 1113, the Icelander Eric Gnipsson was consecrated, probably at Lund (now in Sweden). Bishop Eric went to Greenland in the last year of the reign of Pope Paschal II (1117); the last we hear of him in the saga material is 1121, when he "set out to

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look for Vinland." At that point, as far as the sagas are concerned, he drops out of history (Nørlund and Roussell, 1929).

Two sources, however, purport to know something more of Bishop Eric.

In 1891 Luka Jelic, a Dalmatian cleric, presented a paper to an international Catholic scientific congress in Paris: "L'Évangélisation d'Amérique avant de Colomb" ("The Evangelization of America before Columbus"). Based on documents he found in the Vatican Archives, Jelic told the long-forgotten story of the Christianization of Greenland; the amount of tithes, Peter's Pence, and special Crusades tax the Greenland church had paid in the years 1326-27 (from which he calculated the number of people who must have lived in Greenland at the time); the structure of the Scandinavian church from 1192 to 1460, when the island dioceses of the North Atlantic were grouped under the archdiocese of Trondheim (beginning in 1152); and something of what happened to Bishop Eric Gnupsson. Bishop Eric, he said, went to Vinland and decided not to return to Greenland but to devote his ministry to Vinland and its people. Jelic doesn't say what happened to Bishop Eric after that, only that products from Vinland were included in tithes that reached Norway (Jelic, 1891).

For the fate of Bishop Eric, we have *The Greenland Chronicles* (*Den Grønlandske Cronica*), written in 1608 by Claus Christofferson of Lyschander, a Danish Lutheran pastor and epic poet. Most writers consider Lyschander a "spurious" source (Means, 1942; Gad, 1970; Seaver, 1996), mostly, one suspects, because *The Greenland Chronicles* has not been translated into English and very few scholars read archaic Danish or know anyone who does. Dr. Robert Bjork, director of the Center for Medieval and Renaissance Studies at Arizona State University in Tempe, Arizona, is one who reads archaic Danish. His translation of a passage relating to Bishop Eric is as follows: "And Eric on Greenland laid his hand, planted on Vinland both people and faith that remain there still" (1121); "then Bishop Eric died of disease and injury and his bones were laid under guard on Greenland, Bishop Arild [Arnald?] sent them there" (1146) (Lyschander, 1608, from *Archiv for Dansk Litteratur*, www.adl.dk).

A bishop is indeed buried in Greenland's first, early cathedral church (under a second, later church), at Gardar. He occupies a privileged position inside the church, before the altar of the north chapel, and had with him at the time of discovery a crosier and a ring (Nørlund and Roussell, 1929). The strange thing about this bishop was that he was missing all the bones of his right foot below the ankle, and whoever buried him had tied a shoe onto the lower part of his right leg bone, perhaps in an attempt to complete the regulation bishop's regalia. Since C-14 dating techniques were not available in the 1920s, scholars tried to establish a date for the burial by analyzing the style of the crosier head, carved from walrus ivory. Nørlund and Roussell reported that stylistic analogies were found at Aghadoe Church, Ireland, but backed off from the idea of Irish, hypothesizing that the crosier had actually been carved in Iceland about 1200; they concluded that the bishop was Jon Smyrill Arnason, who died in Greenland in 1209 (Nørlund and Roussell, 1929).

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In excavating the cathedral at Gardar, Nørlund and Roussell also discovered one free-standing, small, square foundation, the only structure built with lime mortar, while all other mortar in the cathedral complex was clay. Why did this one building require lime mortar? Because, they concluded, it was a bell tower and had to be very strong to be very high. Jared Diamond, in his *Collapse* (2005), reported the tower to have been 80 ft.; Finn Gad (1970) also calculated the height of the tower: based on the foundation's proportions and what was known about the round and square towers of Ireland, he estimated the height of the bell tower at Gardar to have been about 24m (79 ft.).



Fig. 11. "The little square ruin #2, possibly the foundations of a bell tower." Figure 22 from Nørlund and Roussell, 1929.

Basque Fishing Secret

On the theory that one can never have too many theories, we suggest for the first time that Basque people could have built the Tower in Touro Park.

According to Gad (1970), for centuries the Basque fished for whales in the Bay of Biscay off the west coast of France and northwest coast of Spain. They built whale-spotting towers along the coasts; when a whale was sighted, they used a series of calls to tell fellow fishermen the whale species, its speed and direction of travel, and how many other whales were with it; then fishermen would row out as quietly as possible to catch the whale (Kurlansky, 1999, 2002). When the Basque had fished all the whales out of the Bay of Biscay, they moved north to Iceland. Kurlansky believes they learned about cod from the Norse and moved across the Atlantic to fish in Newfoundland waters, perhaps as early as 1000. Gad suggests that it might have been the Basque who attacked Greenland around 1418 and enslaved the Greenlanders; the attackers were said to have come from the southwest (Gad, 1970). In any case, says Kurlansky, when John Cabot arrived and named the country New Found Land in 1534, he noted the presence of at least 1,000 Basque fishing vessels; how long they had been fishing along the coast of North America no one could say. Like successful fishermen everywhere, the Basque were very secretive and had never told where they got all that cod (Kurlansky, 1998).

The Basque had learned their ship-building and sailing skills in the 900s from Vikings who had settled along the River Adour in southern France, says Kurlansky. Who is to say that those good sailors did not sail south along the coast of North America, looking for a balmier climate, more like home? And, once finding the perfect spot in Narragansett Bay, could they not have built a tower, for worship or whale-spotting?

At present, predominant public and scholarly support appears to exist for both the 17th-century British colonial and 12th-century Norse theories.

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CONCLUSION

In the countless words expended about the Old Stone Tower in Touro Park, Newport, Rhode Island, not one writer has failed to remark on the unique quality of the structure. Almost all writers and researchers (excluding William Godfrey, of course, who actually got to do his excavation) have called for more excavation, for the simple reason that there has never been enough hard, scientific evidence to prove conclusively any of the extant theories. Before the days of historic preservation, people like Governor William Gibbs simply *dug*, with attendant loss of information. Today, we take considerably more care about where and how and what (and for that matter, *why*) we dig - but, apparently, dig we must. Daniel Snyder, in his Newport Daily News article of the late 1990s, said:

...a more thorough excavation of Touro Park should be undertaken as soon as possible. It should be conducted by a team of internationally recognized archaeologists under the strictest supervision of the Rhode Island Historical Preservation and Heritage Commission. Such an excavation may or may not yield definitive proof of the Old Stone Tower's origins, but it will inevitably shed new light on all aspects of Newport's early history. As an open, undisturbed space in the colonial part of the city, it is bound to yield a treasure trove of information about not just the English or European settlers, but native American residents of the area as well (Snyder, no date).

Suzanne Carlson ends her monograph:

...a comprehensive excavation conducted in an extended area around the site may provide invaluable clues to the solution of the mystery of the Newport Tower. The question remains - who built the Newport Tower, when and why? (Carlson, 2001)

In our opinion, an archaeological dig in Touro Park clearly has been long overdue.

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PROJECT PLAN

Phase I: Pre-excavation Planning (January 1, 2003 - September 25, 2006)

The Arizona-based Chronognostic Research Foundation's (CRF) current research on the Newport Tower began in January 2003, on Rhode Island's coldest day on record. A light snow lay on the lawns and paths of Touro Park, and the Tower stood behind its wrought-iron fence, not at all the "clumsy" building Means had described but a unique stone-and mortar structure, its eight columns and connecting arches golden in the pale winter sunlight, unlike any other structure found in New England. It was immediately clear why so many people still had questions about the Tower's origins: it certainly didn't *look* like other 17th-century structures, which are square or rectangular and built of wood; and it certainly didn't look like a 17th-century mill: grist mills in New England are "smock" mills, octagonal, tapered from narrow at the top to wide at the bottom, and built of wood.

Results of the earlier research seemed inconclusive because:

1. Gov. Arnold owned the land on which stood his "Stone Built Windmill" and mentioned it twice in his will but did not say he built it or ordered its construction.
2. Many have believed that Gov. Arnold built the Tower to replace Peter Easton's windmill, which blew down in a hurricane on August 23, 1675, an event Easton noted in the margin of one of his books. Windmills of 17th-century New England were built of wood, in a style entirely different from the Tower. Easton built Newport's first windmill in 1663; a contemporary mill, the Eastham windmill in Eastham, Massachusetts, (Fig. 12) was built in 1680 by Thomas Paine and moved three times before it reached its current site on Eastham's village green. Apparently, wooden windmills were fairly easy to erect, disassemble, move and repair (Burrows, 1978).
3. William Godfrey had found artifacts from the 17th through the 20th century under the Tower and in the trench into the park - nothing earlier - but he admitted that many before him had dug around the Tower. Later excavation showed that the foundation had undergone repairs (Mallery, 1955).
4. C-14 dating of samples of the Tower's mortar indicated that the mortar was made between 1635 and 1698, but there could be several explanations for the dates: a) the mortar had been mixed during the original construction of the Tower in the 17th century; b) the mortar had been mixed and applied sometime between 1635 and 1698



Fig. 12. Windmill, 1680, built in Plymouth, moved to Truro, then Eastham, Massachusetts; still in working order. Photo by Jan Barstad

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to keep an old tower, built long before Benedict Arnold's time, from crumbling away altogether; c) C-14 dating of carbonates in mortar is controversial and, McCulloch (2001) believes, seriously flawed in Heinemeier and Jungner's 1993 study; even mortar from the control, Newport's Wanton-Lyman-Hazard House (known to have been built between 1676 and 1698), dendrocalibrates to several dates of long after its construction: 1730, 1810, 1920, and even 1945, and the latest date for the age of the Tower mortar itself (uncalibrated) is 2060 A.D. See McCulloch's discussion at <http://economics.sbs.ohio-state.edu/jhm/arch/vinland/newport.htm>.

Given the abundance of theories and the ongoing controversy, could anything more be discovered about the Tower's origins? If so, what remained and how could it be found? The Tower itself had been excavated thoroughly, but its context was relatively unknown. The context was Touro Park and *only* Touro Park: all Newport had grown up around this small parcel, and other clues located on the bench of land above Newport Harbor were lost under centuries of construction. Some of Touro Park, at least, might have remained undisturbed through the years. This was CRF's first research problem: to discover as much as possible about the context of the Tower from Touro Park itself.

When Dan Welch of Geophysical Survey Systems, Inc. of New Hampshire (GSSI) demonstrated the company's newest and first portable ground-penetrating radar system at the annual meeting of the Society for Historical Archaeology in Providence in January 2003, he indicated that a new feature had been added to ground-penetrating radar: software that analyzed GPR data to produce a 3-D image of subsurface structures. He had run a test of the new equipment in Touro Park and found many subsurface anomalies but had not analyzed the data (Welch, personal communication, January, 2003).

In 1994, when Early Sites Research Society monitored the first ground-penetrating radar survey of Touro Park, 181 anomalies were found. But plots of the results were unsatisfactory: long, narrow black lines where anomalies appeared but no detailed images through depth (Fig. 13). The Society's archaeological director, the late James Whittall, recognized the survey's shortcomings: "...this does not tell us what

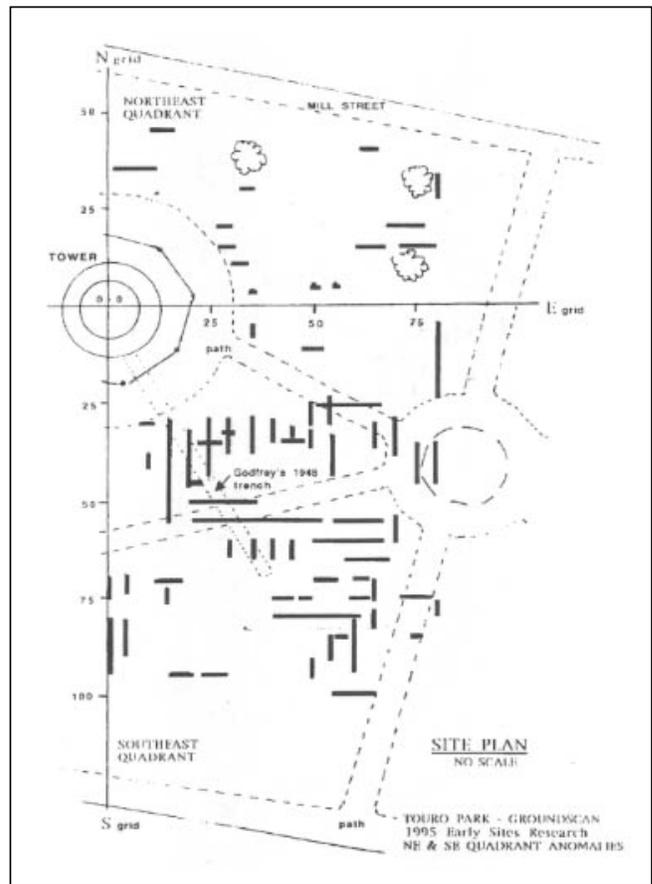


Fig. 13. Early Sites Research Society's 1994 plot of GPR scan, northeast quadrant of Touro Park.

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the feature is or in what time frame it happened. Only excavating can give us that answer" (Early Sites Research Society, 1994).

Excavation based on the 1994 GPR survey would mean shovel tests all over Touro Park to check each of the anomalies. This seemed unacceptable. A new GPR survey using GSSI's 3-D imaging capability, however, seemed a much less invasive method of investigating the Tower's context, and one more likely to win approval of the Newport City Council and its Parks, Recreation and Tourism Department. Accordingly, with permission from the Newport City Council and Director of Parks Susan Cooper, on October 16 and 17, 2003, we monitored the third GPR survey of a restricted area of Touro Park. CRF contracted with Geophysical Applications, Inc. of Foxboro, Massachusetts to perform the geophysical operations. Added GPR and resistivity studies were performed by Dan Lynch of Soil Sight, Inc., of Providence.

GPR profiling is based on the principle that materials with contrasting electrical properties reflect radar signals back to the ground surface. The amplitude of these reflections is determined by the electrical property contrast between the buried object and the surrounding soil, and the length of time since the object was buried.

Data were recorded using a GSSI model SIR-2000 digital radar instrument with a 400 megahertz antenna. Profiles were recorded continuously along an orthogonal grid, with some coverage gaps occurring at obstacles such as benches, statues, and trees. Survey of the park's perimeter was deemed impossible because of a myriad of tree roots. All traverses were 2.5 ft.

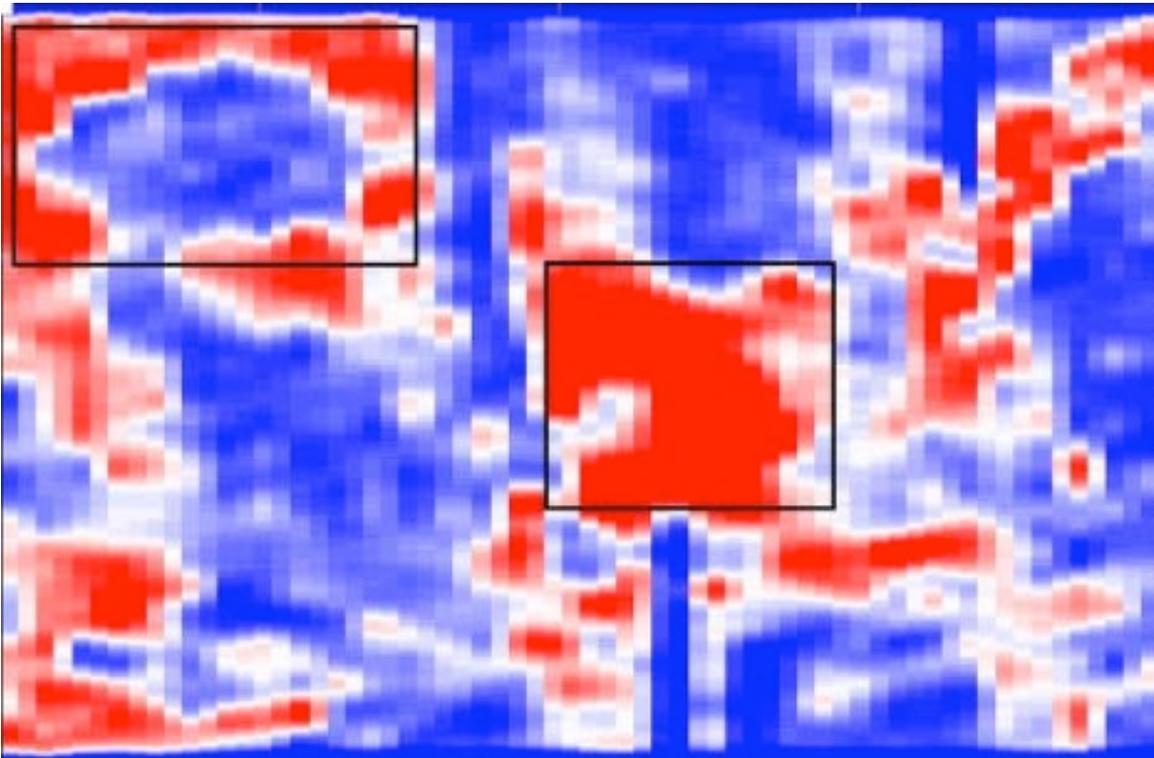


Fig. 14. Ground-penetrating radar profile (October 16-17, 2003) showing buried rectangular feature (upper left) and solid feature (center). 1/2 inch = approx. 6 ft.; Depth: 1.5 ft.

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apart. Data were processed using GSSI's Radan software with a 3-D Quick Draw module, which produced 22 time slices; the time slices present median reflection amplitudes within 0.5 ft.-thick layers from 0.5 to 7.0 ft below the surface.

Our 2003-2006 GPR and resistivity surveys variously identified several apparent anomalies that have provided specific targets for investigation (Fig. 14). One feature, for example, initially appeared to be a possible open wall system measuring about 18 x 30 ft. with an opening in its south section. This feature began to appear about 1.0 ft. below the surface, gradually amalgamating with a second feature at a depth of about 2.0 ft. The second feature looks to be a solid rectangle measuring 18 x 20 ft., perhaps outlining an old foundation, ranging in depth from 1.5-3.5 ft. The other linear anomalies may be paths or roads. Some other east-west-trending anomalies lie at 4.0-5.5 ft. immediately south of the open-walled featured and west of the solid feature.

Disturbance Assessment

Touro Park has been a Newport City Park for more than 150 years and has been well maintained, its lawns groomed, its flowering and non-flowering trees beautifully pruned, its asphalt walks wide and clean. The statues of Rev. Channing and Commodore Perry are surrounded by wrought-iron fences inside which flowers are planted and maintained by

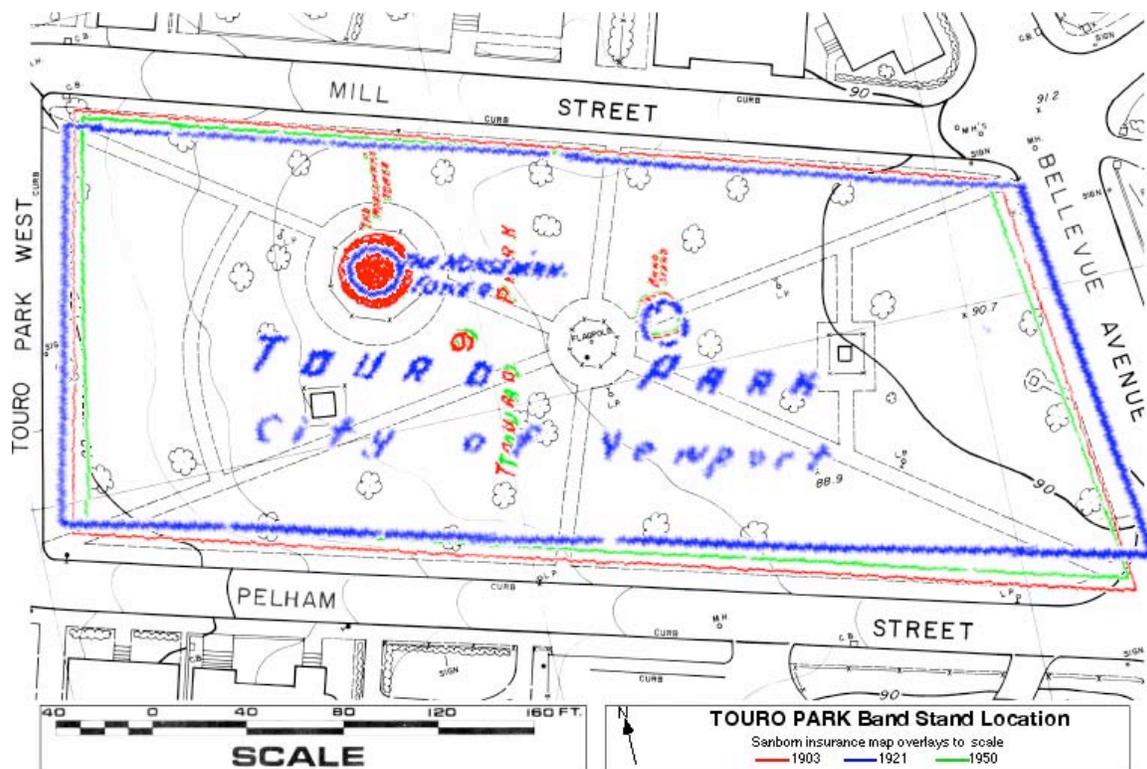


Fig. 15. Topographic survey map of Touro Park, with location of former bandstand shown for three different years: 1903, 1921, and 1950. Each year is represented by a different color. Sanborn Map Company © 2004 Environmental Data Resources, Inc.

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Friends of Touro Park. The Tower is protected behind its own wrought-iron fence topped with spikes, with a padlocked gate. A walkover proved that no archaeological debris or artifacts are to be found on the surface of Touro Park.

Our GPR survey indicated that the first 2.8 ft. of the park's soil profile has been disturbed in certain areas: buried electric utility lines stretch from utility poles on the park's perimeter to the statues, flagpole, and Tower. A bandstand once stood in the park, built between 1896 and 1903 and removed between 1950 and 1963. In order to check whether the bandstand might be one of the features found in our GPR survey, we superimposed the three Sanborn maps showing the bandstand (1903, 1921, and 1950) on the base map, at the same scale and orientation (Fig. 15); the resulting overlays show the bandstand to be completely out of the study area, east of the current flagpole. Neither of the two underground features is the old bandstand foundation, if indeed its foundation still exists.

The base map is taken from Newport's "Topographic Survey of City of Newport, Rhode Island" sheet #51 (Fenton G. Keyes, 1973); only the section showing Touro Park has been used.

Scope of Work

Hypotheses

Based on our GPR findings, we developed five hypotheses regarding excavation:

1. Ground-penetrating radar has located two or more anomalies in Touro Park, both resembling building foundations; since no above-ground structures that might have been associated with the anomalies have ever been described in the literature on Touro Park or the Old Stone Tower, or shown on historic or modern maps, the two anomalies and their connections may be the remains of structures that pre-date the American Revolution and have been previously unknown to the City of Newport, historians, archaeologists, and the public.
2. Because of their proximity to the Old Stone Tower, the anomalies may be related to the Tower.
3. Because of their proximity to each other, the anomalies may be related to each other.
4. Scientific archaeological investigation of the anomalies may reveal their nature, their relationship to the Tower, and their relationship to each other.
5. Data from the study area may tell residents of Newport and the public about the era and previous use of the site and how it might reflect the history of Newport and Rhode Island.

Since staff of CRF are not archaeologists, we do not meet National Park Service qualification standards for further subsurface archaeological investigation of Touro Park. So we set about finding a qualified archaeologist to undertake the investigation and to set a date to

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do the work. Raymond Pasquariello, regional manager of northeastern United States and Caribbean of the Providence office of Gray & Pape, Inc., has been named principal investigator.

Touro Park and the study area within it contain one recorded archaeological site: the stone tower. The park also has the potential for containing an archaeological site that has not yet been discovered or recorded. There is, for example, a possible foundation of another structure that has never been described or recorded in literature or maps of Newport and surrounding area.

A permit from the Rhode Island Historic Preservation and Heritage Commission normally is not required when an archaeological investigation is conducted on land not controlled by the state, its agencies, department, or institutions, or on land that is not a State Archaeological Landmark. However, the City of Newport does require an RIHPHC permit, and a check of RIHCPC listings shows that Touro Park falls within the Bellevue Avenue National Historic Landmark District. Accordingly, CRF and archaeologist Pasquariello applied to RIHPHC for permission to excavate the site in Touro Park. After all of the Newport and RIHPHC requirements were met, city and state approvals of the CRF-planned dig finally were granted in the summer of 2006, enabling the initial excavation to take place that fall. The RIHPHC approval has included the enthusiastic support of Rhode Island State Archaeologist Paul Robinson. And it has represented the first approval of any archaeological dig in Touro Park by the city of Newport in more than half a century.

Maps

In studying historic and modern maps of Newport and Rhode Island, we found one drawn by Blaskowitz in 1776, which notes "Stone Windmill" in the correct location west of what was then "Jew Street", but does not include a reference mark; another, more detailed map of the city of Newport, also drawn by Blaskowitz in 1777, places a circle representing the Tower in the correct location, but does not label it. Blaskowitz also drew "A Topographical Chart of the Bay of Narragansett in the Province of New England, with all the Isles contained therein, among which Rhode Island and Connonicut, have been particularly surveyed, Shewing the true portion and bearings of the Banks, Shoals, Rocks, &c. as likewise the Soundings, To which have been added the several Works and Batteries raised by the Americans, Taken by Order of the Principal Farmers on Rhode Island." This map indicates in red the street layout of Newport at the south end of Aquidneck Island but does not show the tower.

A check of National Park Service and State of Rhode Island listings of National Register of Historic Places and National Landmarks indicates that since 1976 Touro Park has been part of Bellevue Avenue National Historic Landmark District (both sides of Bellevue Avenue from Memorial Boulevard to the Atlantic Ocean at Land's End; bounded, generally, on the east by Easton Bay and on the west by properties on the west side of Bellevue Avenue) but is not

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listed individually. If additional significant archaeological sites are found in Touro Park, they and the adjacent Tower should be considered for a separate listing on the National Register.

Research Possibilities

The overall area to be investigated is small, 60 X 40 ft. The anomalies identified by the GPR studies are located 1-4 ft. under the surface. Such calls for a grid being established over the test area, size to be determined by the archaeologist and RIHPHC, with excavation within the grid to establish the following properties of the features and their context:

- 1) soil types and stratigraphy;
- 2) accurate depth, extent, and orientation of features;
- 3) construction method, materials (stone, brick, concrete, wood, earth, metal, roofing), and
- 4) construction artifacts (mortar, dry stone, nails, forms);
- 5) other artifacts: charcoal, ovens, fireplaces, and trash middens; religious items such as crosses, altars, furnishings; pottery, glass, soapstone implements or wares; metal objects such as cutlery, tools, and weapons; milling equipment, wheat or other pollen from stored goods; trade goods of other types; combs, precious metals, jewelry and beads, coins; animal and fish bones, seeds and nuts;
- 6) connections between the features;
- 7) paths or roads leading to and from the features;
- 8) presence (or absence) of human burial material;
- 9) era and length of habitation or use.

Public Education

In keeping with CRF's strong commitment to public education, it is our intention—through maximum involvement with local schools and news media—to use the excavations, in addition to their research value, as a means of encouraging discussion of Rhode Island's history and of introducing as many students, residents, and visitors as possible by direct exposure to the methodology of archaeology.

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Phase II: Excavations (September 26, 2006 - November 30, 2007)

After some preliminary work, CRF's initial excavation in Touro Park began with a well-attended opening ceremony on October 16, 2006. The dig was led by Providence archaeologist Ray Pasquariello as principal investigator, with Newport geophysicist Dan Lynch serving as field supervisor. Lynch directed a local paid crew of seven plus two volunteers.

Because of a spate of bad weather, the initial dig was not concluded until November 22, 2006. Along the way, some 19 excavation units, most of them one meter square, were carefully excavated to a depth of at least one meter, occasionally deeper, until the archaeologists reached a post-glacial, pre-historic soil layer deemed to be "archaeologically sterile." Photos, drawings, maps, and field notes documented each step.

Apart from the recovery of a large inventory of artifacts, we already can report the following from the initial excavation and related research:

1. As suspected, the top surface of the soil in Touro Park has been seriously disturbed, with material removed, added, and shifted over the years since 1857, when the park was constructed.
2. In addition to the two prior archaeological excavations (Godfrey's in 1948-1949, and Mallery's in 1954), amateur treasure hunting undoubtedly took place under and in the vicinity of the tower long before the formation of the park.
3. Small lenses of debris and artifacts - occasionally from as far back as the 17th century - led us to suppose that people had dumped household refuse in the meadow near the tower long before the park came into being.
4. There have been at least four different configurations of paths in the park. In addition to the current system, our excavation and other research identified changes in the layout of paths in 1893, 1907, and 1921.
5. Some of these earlier paths proved to be what initially had looked on the GPR studies like possible remnants of an open-walled structure of some sort.
6. What had looked on the GPR scans to be a possible old construction site for the tower—perhaps a nearby buried pile of unused rocks and materials—turned out on excavation to have natural explanations: in one case an outcrop of bedrock and, in another, empty spaces left by rotted-out roots of large trees.
7. We also found old photos of picket fencing surrounding the tower, as well as photos and maps of a bandstand that once stood east of the tower in the early 20th century.
8. As a curious sidebar, one possible meteorite was discovered during the excavation of our first unit, at a depth indicating landfall some 2,000 to 3,000 years ago. The object is now being examined for authentication by the Center for Meteorite Studies at Arizona State University in Tempe, Arizona. If the piece is genuine, it would be the first registered meteorite ever recovered in Rhode Island.

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Concurrent with the initial dig in the fall of 2006, besides an Associated Press interview, we participated in extensive news coverage in *Newport Daily News*, *Newport This Week*, and *Providence Journal*. We also took part in TV news segments on Providence ABC Channel 6, Providence NBC Channel 10, and a local public access TV channel. Ray Pasquariello and Jan Barstad participated in two 30-minute interviews on Newport's WADK Radio.

At the Touro Park dig site, in addition to discussions with countless visitors and walkers of dogs, we hosted tours and lectures for an elective senior anthropology class from Portsmouth High School, an English class from East Greenwich High School, an Elderhostel group, and after-school classes from Thompson Middle School, Martin Luther King Center, and the Newport Boys and Girls Club. The Newport Historical Society and Redwood Library and Athenaeum graciously helped us arrange much of this educational outreach.

As the excavation proceeded, we acquired a project mascot, a 21-year-old neighborhood cat named Bubbles, who in turn was eyed with interest by a red-tailed hawk in nearby trees. We hope to find Bubbles alive and well when the dig resumes again this fall.

With unanimously renewed approval by the Newport City Council, CRF's second excavation is set to begin October 9, 2007. Providence archaeologist Ray Pasquariello of Gray & Pape, Inc., once more will be in charge as principal investigator. This year's field supervisor will be Dr. Joyce M. Clements, also of Gray & Pape in Providence, who worked with the crew in 2006. Crew size should be about the same as last year.

The focus of the second archaeological effort will be on an apparent rectangular feature east of the tower, about 18 x 20 ft., detected by GPR at a depth of 1.5 to 3.5 ft. Will it prove to be the remains of an ancient foundation from a previously unreported and unknown structure? Or will there be other explanations? Additionally, the group hopes to examine a cluster of east-west-oriented anomalies at a depth of around 4.0 ft., also detected by GPR.

Weather permitting, the second excavation is anticipated to conclude by mid-November 2007. A comparable inventory of artifacts is expected to be recovered during this part of the process. News media contacts and other public outreach efforts should be similar during the second excavation as well.

For photos and other descriptive information of the 2006 excavation, see CRF's website www.chronognostic.org.

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Phase III: Analysis (September 26, 2006 - December 31, 2008)

By the end of CRF's initial excavation in Touro Park in the fall of 2006, more than 2,000 artifacts (objects and fragments of ceramic, glass, metal, stone, and animal bone - were removed and carefully catalogued. Many could be dated to the 18th and 19th centuries. Some were more modern, even quite close to present. A smaller assortment looked to be 17th century, harking back to British Colonial Newport. There were even a few evident question marks: fragments of old rocks showing metal tool marks of still-uncertain date and origin.

Among the metal objects were two 19th-century American pennies, one dated 1878 and the other 1868. The latter, an Indian-head coin, actually was found by students from the Boys and Girls Club of Newport while they were learning under supervision how to screen soil dug from the site, a very exciting discovery for them. Also among metal objects was a set of lost car keys, perhaps from a Jeep Eagle of recent vintage.

By way of analysis, however, all that CRF has received so far from Gray & Pape has been a very preliminary report and artifact inventory with minimal annotation. We are still waiting for full copies of field notes and follow-up analytical reports from the contracted archaeological firm, which we hope will be available by the end of 2007. Most of the ongoing lab work by Gray & Pape is being conducted at its Providence facility.

Artifacts including similar categories and numbers also are expected to be recovered in CRF's second excavation over October-November 2007. Whether the span of dating will prove to be essentially the same remains to be seen. Based on current experience, concluding analysis of the second excavation should be available by the end of 2008.

Copies of all final analytical reports on the Newport Tower Project will be made available by CRF to those who have contributed to the project or demonstrated a serious interest in it.

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