

Dedicated to the increase and diffusion of knowledge about how the nation's lands are apportioned, utilized, and perceived.

The Lay of the Land

The Center for Land Use Interpretation



WINTER 2017

Everything people do plays out in space on, in, or over the ground, so therefore all of human endeavor can be described through its land use.
-Damon Farrugut

HOLLOWED EARTH

THE WORLD OF UNDERGROUND BUSINESS PARKS



A view into the Gateway Commerce Center in Wampum, Pennsylvania, one of a couple dozen underground business parks inside former limestone mines, featured in the exhibit *Hollowed Earth: The World of Underground Business Parks* presented at CLUI in Los Angeles from December 2016-March 2017. CLUI photo

THERE IS A VAST NETWORK of underground office, storage, and logistics facilities in the former limestone mines of the USA. These drive-in artificial caves can extend for more than a mile, and house a subterranean analog of the world above. Inside, millions of square feet have been paved, painted, wired, lighted, and walled into underground blocks of commercial real estate. Thousands of people collectively work in these warrens, managing government archives, manufacturing equipment, storing food and data, among other activities.

These underground spaces were the subject of *Hollowed Earth: The World of Underground Business Parks*, an exhibition at the CLUI in Los Angeles this winter, where this subterranean world was presented video, photos, and touchscreen maps.

more on page 17

IN THIS ISSUE

FOCUS ON THE UNDERGROUND.....	1
PRESIDENTIAL PLACES.....	1
FIELD REPORT: STONE MOUNTAIN.....	13
FIELD REPORT: GREAT DISMAL SWAMP.....	15
THE DESERT.....	28
WENDOVER REPORT.....	29
CLUI SHOWS ON THE ROAD.....	30
BOOK REVIEWS	31

PRESIDENTIAL TERROIR

THEIR PERSONAL LANDSCAPE LEGACIES



For the exhibit *Executive Decisions*, the CLUI exhibition space was turned into a kind of polling station with four voting booths, each with a touchscreen where visitors could select from 44 presidential landscapes to explore in detail. Nearly a thousand captioned images taken by CLUI researchers over the past year of hundreds of presidential places described the presidential terrain of the nation. There were also displays of souvenirs and tourist information about presidential homes and museums, as visiting presidential places is a nationwide historic scavenger hunt pursued by many. CLUI photo

PRESIDENTS' OUTSIZED AND MYTHIFIED STATURE as people and interpreters-in-chief of America makes for interesting terrestrial manifestations, where their personal identity and legacy emanates from a place, a kind of presidential *terroir*. Last fall, anticipating impending changes to the nation's presidentscape, the Center for Land Use Interpretation developed a research program on the subject, which culminated in the exhibit *Executive Decisions: The Personal Landscape Legacy of American Presidents*, shown at the Center's Los Angeles exhibit space until a few weeks after the election in November.

Starting with George Washington's Mount Vernon, rescued from ruin and restored by the Mount Vernon Ladies' Association decades after the nation's first president died in 1799, each ex-presidency has established a place where their heart, story, and often even their mortal remains resides.

continued on next page

Editor's Note

Welcome to the 40th issue of the *Lay of the Land*. This issue is mostly about presidential space and underground space. The former seems to be on a lot of people's minds, the latter likely on some of our minds. Either way, these two themes have long been of interest to the CLUI, and only just now happen to rise up in the form of programs. Things ebb and flow, wax and wane, come and go, yin and yang, pile up, and sink down. We ride this out, on the surface, in our little boats, trying to safely get where we are going, keeping others in mind along the way. We are honored to share this part of this journey with you, dear reader, so thanks for being here, with us, as well as there, wherever you are. Have a safe trip. See you on the other side.

MOVABLE FEATS

THE SHIFTING GROUND OF PRESIDENTIAL HOMES

One of the curious elements of presidential place-making is the way many of the early homes of the presidents have been memorialized, often dissolving, re-forming, and moving around in very un-house-like ways. They are domestic monuments on a quest for the authentic that is often epic, but which just as often eludes the legacy of these larger than life historic figures. Let's explore some of the shifting grounds of presidential homes.

Presidents #1 - 6: Unreal Estates of our Founding Fathers



The footprint of George Washington's birthplace home at Wakefield is sketched in a white outline, like chalk around a body at a historic home crime scene. An inaccurate replica of the house, constructed in the 1930s, on the wrong foundation, is in the background. CLUI photo

George Washington, America's first president, was born in 1732 at his family's tobacco plantation in Virginia. In 1779, long after he had moved away, the house he was born in burned down. By then it had been expanded into a mansion known as Wakefield, and was owned by Washington's nephew. In 1931, a gift from John D. Rockefeller Jr. helped to restore and preserve the site in time for Washington's 200th birthday. A house was constructed to represent the original birthplace house, sited on what was thought to be the original cellar hole. Though the original house was known to have been made of wood, the replica house was made of brick, for some reason. Archeologists later discovered that the original house site was a hundred feet away, and the cellar that the size and shape of the replica was based on was an outbuilding of some kind, possibly a barn. So now the replica house is called the Memorial House.



George Washington's childhood home at Ferry Farm, being built from scratch in 2016-2017, will float above the ground on a special cantilevered foundation so as not to disturb the archeological integrity of the original home site beneath it. CLUI photo

In 1738, Washington's family moved to a plantation near Fredericksburg, Virginia. The plantation became known as Ferry Farm, as it was used later as a ferry crossing point on the Rappahannock River. George Washington lived here from the age of six to his teenage years, along with his brothers and sisters.

Two hundred years later, many of the childhood myths of George Washington were manifested here for tourists. A structure known as the Surveyors Shed reminded visitors that it was here that Washington learned surveying (which became his trade) though the structure came from a later farmstead. The fable of Washington cutting down the cherry tree is set here too, and for years there was a plaque in front of a stump, even though the story was known to have been made up by a writer, Mason Locke Weems.

The landscape of myth at Ferry Farm is giving way to scientific archeology now. In 2008, the original Washington house site was discovered, and a reconstruction at that location is currently being built. The reconstructed house is designed to structurally float above the ground, so as not to disturb the archeologically hallowed earth beneath it.

★ ★ ★



The empty 17th century Adams Family Houses haunt the streets of Quincy, where they levitated three feet to match the modern street level. CLUI photo

Two adjacent ancient houses in Quincy, south of Boston, stand out as anachronistic anomalies, battered and vacant, on a busy street across from a diner and a funeral home. The unoccupied houses, more than 350 years old, were the birthplaces and childhood homes of two presidents, **John Adams**, president #2, and **John Quincy Adams**, president #6.

When they lived there, in the 1700s, this was rural farmland on the old coast road between Plymouth and Boston. The houses were immersed in historic events, with revolutionary soldiers marching past, and the Constitution of Massachusetts, which preceded the US Constitution, written inside by John Adams, Samuel Adams, and other patriots. Over the years the farmland was divided into lots, and urban sprawl flowed around them. In 1896, the houses, still owned by descendants, were adopted by historical organizations, and turned into preserved landmarks. Restorations included raising the houses and the ground a few feet, to catch up with the roads and sidewalks that had grown up around them. Though now managed by the National Park Service, the houses still seem frail and beached.

★ ★ ★

PRESIDENTIAL PLACES



Jefferson's birthplace house replica, ca. 1960, was removed from Shadwell Plantation, and is now located in a colonial-style office park outside of Charlottesville, where it serves, at the moment, as the office of a collegiate sports media rights management company. CLUI photo

Thomas Jefferson was born in 1743 in a farmhouse built by his father at Shadwell, one of a number of plantations owned by his extended family. He inherited Shadwell on his 21st birthday, in 1764, and it continued to be his home until the house burned down in 1770, destroying his first library, records about the house, and all but his fiddle, they say. After the fire Jefferson moved to a hillside nearby, where he had already started building his dream home, Monticello (little mountain). By the early 1900s, Shadwell had returned to being sheep and cow pasture.

In 1945, the Jefferson Birthplace Memorial Park Commission was established to develop the location into a Jefferson historical site. A historical investigator, known for his work locating the site of Thoreau's cabin at Walden Pond, was hired, and the original foundation of the Shadwell house was thought to have been discovered. A replica house was built at the location in 1961, filled with antiques, and opened to the public. But two years later, the Thomas Jefferson Memorial Foundation, owners of Monticello, took possession of the site and shut it down, claiming that the house was not historically accurate. The house was sold and moved off the site. Later archeological work at Shadwell determined the location and footprint of the original house, but there are no plans for any reconstructions, or to open the site to the public. A granite monument erected by the St. Louis Historical Society on Jefferson's birthday in 1926, 100 years after his death, the only monument commemorating his birthplace, sits alone in a grove of trees, behind a locked gate.



A monument commemorating Jefferson's birthplace, at Shadwell. CLUI photo



James Monroe's birthplace may still rise up from its burial mound. CLUI photo

James Monroe, last of the Founding Fathers presidents, was born in 1758 at a plantation in a house built by his father, five miles up the Potomac River from George Washington's birthplace. Monroe lived there until 1774, when he left for college. After the war, Monroe opened a law practice in Fredericksburg, and sold his land, including his birthplace, in 1783. It changed hands many times since then, and the house slowly fell down, then disappeared completely, as the land became a local dumping ground.

Starting in 1923, some of his descendants led efforts to develop and preserve the birthplace. These and other early attempts generally failed. The foundation of the house was discovered in the 1970s, and the National Park Service was approached, but declined to get involved. A historic marker was erected in 1987, adding to brickwork, a roadway, and other improvements. Wooden posts marked the house mound, and a marker put in the middle of the house site was dedicated in 1989.

In 2005 a memorial foundation was given a 99-year lease on the property, and in 2008 a small visitor center was opened. Inside is a model of the original house, which there are hopes to reconstruct at full scale on the site, someday.



James Monroe's house at Ash Lawn Highland was thought to be relatively modest. However, a few years ago archeologists discovered a foundation extending from the main house, indicating that a much larger structure once stood here, changing more than a century of erroneous assumptions. CLUI photo

PRESIDENTIAL PLACES

In 1793, **James Monroe**, who later became the fifth president of the United States, and his wife purchased 1,000 acres next to Monticello, and eventually amassed a 3,500-acre plantation called Highland. Though they owned other properties as well, this was their principal residence from 1799 to 1823. Subsequent owners called it Ash Lawn, and opened it to the public in 1931. It was donated to the College of William and Mary in 1974, which has operated it as a historic site since then. Recent excavations led to an announcement, in 2015, that the existing house, carefully restored and thought to have been the Monroe's primary residence, was actually likely just a guest house. A much larger foundation was uncovered in front of it from a building which probably had burned down after the Monroes sold the property. The history of the place is now being rewritten.

Presidents #7 - 15: Log Cabins and Pyramids



Andrew Jackson's log cabin birthplace location in North Carolina. CLUI photo



Andrew Jackson's log cabin birthplace location in South Carolina. CLUI photo

Andrew Jackson, the seventh president of the USA, was the first president to be born in a log cabin, and two locations claim to be the site of that cabin. One is located near Waxhaw, North Carolina, where a local chapter of the Daughters of the American Revolution first built a monument in 1858, on what was believed to be the base of the original home's chimney. The other is two miles away, in South Carolina, where a monument erected by another local chapter of the Daughters of the American Revolution claims this as the site of the log cabin Jackson was born in. This monument was erected in 1928, weighs three tons, and has a much more specific claim of authenticity carved into it, citing Jackson's statement that he was born at his Uncle James Crawford's farm, which was located around here. To further assert his South Carolinian origins, the state

established the Andrew Jackson State Park around the birthplace monument in 1953. A log cabin-y museum and visitor center were built, as well as other rustic recreations, such as an imagined log cabin school like the one he might have attended in the area. Part of the uncertainty is due to the fact that the border between North and South Carolina was not fully established until the 1800s.



Andrew Jackson's two-story log home in Nashville was turned into two one-story slave quarters once his family moved into their new mansion, the Hermitage. CLUI photo

Andrew Jackson's home for much of his life was a Greek Revival mansion he called the Hermitage, outside Nashville. It is now an established tourist attraction complete with his museum, and tomb. He purchased the acreage for the Hermitage in 1804, and moved there with his wife, living initially in a log house which has been reconstructed at the site. When the Jacksons moved to the main house, completed in 1819, the two-story log structure was converted into two single-story log buildings, and used to house his slaves. During his two terms as president, from 1829-1837, he had the house expanded and improved, and returned to it in retirement, dying there in 1845. Jackson left the estate to his adopted son, whose family lived there until 1887. Two years later, an organization of prominent Nashville women were granted ownership of the plantation in order to preserve it, and open it to the public. This group, the Ladies Hermitage Association, was modeled after the Mount Vernon Ladies Association, who had successfully taken over George Washington's home in 1858. The Ladies Hermitage Association still owns and operates the Hermitage plantation, and manages the local legacy of the nation's first "log cabin" president.

★ ★ ★



Though the inscription maintains "Here stood the house in which was born..." the solid-looking monument, more than 100 years old, marking the site of the birthplace log cabin of James Polk, was relocated near to the entrance of the park in 1966, when a replica of the cabin was constructed on the actual spot. CLUI photo

PRESIDENTIAL PLACES

The three presidential successors to Jackson’s “log cabin” presidency (Martin Van Buren, William Henry Harrison, and John Tyler) came from Tidewater or Hudson River gentry, but the 11th president, **James Polk**, was born in a log cabin (though a large one) on his father’s 150-acre cotton farm in Pineville, North Carolina, in 1795. The family moved to Tennessee in 1806, when James was 11, and they sold the property a few years later. The local chapter of the Daughters of the American Revolution erected the first commemoration on the site in 1904. Their pyramidal pile was later moved to accommodate the construction of a replica of the original cabin, part of a state-funded park established to honor Polk. The cabin was reconstructed from a brief description made by a public official who had visited the site in 1849, and they used logs from an old cabin found a few miles away.

★ ★ ★



Millard Fillmore’s birthplace cabin site has been located, with some implied precision, in this roadside park in upstate New York. CLUI photo

Millard Fillmore, the nation’s 13th president, was born in 1800 in a log cabin near the current town of Summerhill, in the Finger Lakes district of upstate New York. Two years later his family lost their land due to a defective title, and settled in the town of New Hope. A few decades later the cabin was torn down and used as firewood. The place remained forgotten until 1931, when it was identified to the local historical society by an elderly gentleman who remembered it from a childhood visit. He indicated the exact cabin location, and a state historical marker was erected along the road. Later, a roadside park was established by a local historical society, and the location of the cabin was further delineated. In 2003, the Nucor Steel Corporation, which has one of its mills in the region, built a pavilion at the site (after plans to build a museum in nearby Moravia fell through). The site is on Fillmore Road—which is still a remote place.



Fillmore’s birthplace cabin replica is five miles away from the birthplace site. CLUI photo

Five miles west from Millard Fillmore’s birthplace is the town of Moravia, and the entrance to Fillmore Glen State Park. Inside the park is a replica of the birthplace cabin in Summerhill. The replica was built in 1965 by the Millard Fillmore Historical Association, using wood from another old cabin located three miles away. It was restored recently by volunteers, and is furnished with recreated and period artifacts.



Long after he had passed away, Millard Fillmore’s house in East Aurora, NY was purchased for use as an art studio by the co-founder and chief illustrator of the Fisher-Price toy company, and moved nearby to this location. CLUI photo

As a young adult, Millard Fillmore studied law, then established a practice in East Aurora, a town south of Buffalo, where, in 1826, he built a house. He and his wife lived in this house for four years. The house was originally on Main Street (where the movie theater is now) and by the early 1900s, it was in disrepair. In 1930, the main portion of the house was purchased by Margaret Evans Price, and moved to a side street, for use as an art studio. That year Margaret, who was an artist and illustrator of children’s books, and her husband, who was the town’s mayor, formed a toy company called Fisher-Price. Lithographs of characters from her children’s books were produced in her studio and applied to wood block pull toys at the factory in town. Bankrolled by her husband, who was a former executive at Woolworths, the company grew quickly. The headquarters are still a few blocks away. Fisher-Price went plastic in the 1950s, and made preschool versions of miniature airports, parking garages, and barns. It is now owned by toy giant Mattel. In 1975, the local historical society acquired Millard Fillmore’s house from the Price family, and restored it to its 1826 appearance as best they could. It was opened to the public, and is the only museum dedicated to the president.

★ ★ ★



The site of Franklin Pierce’s birthplace cabin is now under Lake Franklin Pierce. CLUI photo

PRESIDENTIAL PLACES

Franklin Pierce, 14th president of the United States, was born in a log cabin in 1804, in Hillsborough, New Hampshire, at a site that is now under the waters of a reservoir called Lake Franklin Pierce. His father was a prominent citizen who served with George Washington during the Revolutionary War, and later became a government surveyor dispatched to the region. He ended up owning several hundred acres here (not all of which are under the lake). When Franklin Pierce was born, the seventh of nine children, the cabin was just their temporary home while they waited for their large house in town to be finished. He was a log cabin occupant for just a few weeks of his infancy.



A house Pierce lived in for a few years was moved from its downtown location, where it stood next to similar houses, to this rural setting, to save it from being torn down. CLUI photo

In 1838, Franklin Pierce and his wife moved from Hillsborough to Concord, 20 miles away, and bought a Greek Revival-style house at 18 Montgomery Street, where they lived from 1842 to 1848. In the late 1960s, the Housing Authority wanted the land as part of an aggressive urban renewal plan for downtown Concord, and the house was initially considered to not have enough historical value to be saved. The Pierce house was moved to a new location, in a designated “historic area,” in 1971. The historical organization known as the Pierce Brigade continued to raise money to restore the house at its new location, and turn it into a museum celebrating Franklin Pierce, the only president from New Hampshire. The house is open to the public seasonally, and has displays about Pierce, as well as restored period rooms, and a gift shop.



Though only its steps remain, and there is a small stone monument in the lawn, the house Pierce lived in for most of his time in Concord is now a parking lot for a mortuary next door. CLUI photo

Though the relocated and preserved “manse” was the only house he ever owned in town, the principal events in his life occurred elsewhere, particularly at a house he lived in at 52 South Main Street, which is no longer there. He was living here when he heard about his election to the presidency, in 1852, and where he returned to live, after his presidency. These were not happy times, though. Shortly after his election to the presidency, his family was in a train accident in Amherst, New Hampshire, and their 11 year old son was killed in a gruesome way, witnessed by both parents. This was even more tragic, as he was their last surviving child—their other two boys had died a few years earlier. His wife Jane never recovered, and didn’t even join her husband on his inaugural trip to Washington. He returned to this house in Concord after a controversial presidency that linked him with the pro-slavery south. They traveled to Europe for a while, Jane died in 1863, and he sank further into alcohol. He died in the house in 1869 at the age of 64, of cirrhosis of the liver. In 1981, the house, recently recognized officially as a historic site, mysteriously caught fire and burned to the ground. Franklin Pierce is buried in the Old North Cemetery in Concord.

★ ★ ★



A pyramid was constructed on the site of President Buchanan’s birthplace cabin. Buchanan was an active Freemason, a Deputy Grand Master of the Grand Lodge of Pennsylvania, which perhaps explains the pyramid shape. CLUI photo

James Buchanan, the nation’s 15th president, was born in a log cabin in 1791 at Stony Batter, his parents’ frontier trading post at Cove Gap, Pennsylvania, now inside Buchanan’s Birthplace State Park. The site is still remote and rural, and has a considerable amount of interpretation describing conditions here at that time, his presidency, and how his family moved to nearby Mercersburg to run a store when he was six. When they left Stony Batter, the property was purchased by a local family, and remained in private hands until 1906, when it was purchased by a trust, executing the last wishes of James Buchanan’s niece, Harriet Rebecca Lane. Harriet’s parents died when she was 11 years old, and James Buchanan became her guardian. He never married, and when he was in the White House, she served as his first lady, arranging social activities, doing humanitarian work, and guarding his legacy. She died in 1903, leaving \$100,000 to a trust to make two memorials to her beloved uncle. One is a statue in Washington DC, and the other is here, in the form of a pyramid. The construction of the 31 foot-tall pyramid involved 35 men, and required building a small railroad to move 300 tons of material to the site. In 1911, after construction was completed by the trust and its assigned architects, the entire 18.5-acre property was donated to the state, making it the smallest park in the state park system.

PRESIDENTIAL PLACES



Buchanan's birthplace cabin has been reconstructed as a historic monument at a preparatory school in Mercersburg, several miles from its original location. It is believed to be built from some of the original logs and boards. CLUI photo

Buchanan's birthplace cabin, which once stood where the pyramid is now, has its own curious traveling tale. The cabin was purchased by a local businessman in 1850, before Buchanan became president. He removed it from the site at Stony Batter, and reconstructed it in town to use as a workshop. It eventually was expanded, and turned into a home that was rented out. In 1925, the structure, by then in some disrepair, was purchased by another local businessman, who moved it 20 miles to a lot he owned in Chambersburg. A bronze plaque explained its origins, and over the next 30 years it was variously used as a gift shop, Girl Scouts headquarters, antique shop, museum, and Democratic Party headquarters, before it was moved again, leaving an empty lot. In 1953, the cabin was purchased for \$300 by Mercersburg Academy, a prep school in town, and moved to campus, where it remains, for now.

President #16: Lincoln's Logs



The epicenter of Lincoln's birthplace memorial presents a dramatic contrast of architectures, reflecting the ideals of the American republic: The exterior is a neoclassical temple . . . CLUI photo



. . . inside of which is Lincoln's birthplace cabin, later proven to be inauthentic. CLUI photo

In 1808, **Abraham Lincoln's** father bought a property called Sinking Spring Farm, and built a cabin next to the spring, where his son, Abraham was born a year later. The property is now a National Historical Park with a visitor center about the revered 16th president of the USA. The main feature at the site is a Romanesque memorial, with 56 steps, one for each year of the president's life, built on the location of his original birthplace cabin. Inside the structure is his birthplace cabin—which, however, is not really the actual birthplace cabin. Though not the original one, the cabin's journey to this site is an odyssey worthy of a lavish classical shrine.

The Lincoln family moved to another farm two years after he was born, and it is likely that the original log cabin was burned up for firewood by subsequent owners, probably in the 1830s. Another log structure was built on the site, and later moved and reused elsewhere. By the 1860s, with Lincoln in the White House, and the Civil War raging, the importance of this historic president's birthplace and cabin was attracting interest. Federal efforts to acquire the birthplace faltered, and in 1894, it was bought by a New York restaurant chain owner and missionary, Alfred Dennett, with plans to develop it into a tourist attraction. Dennett acquired a cabin that locals claimed was the original cabin, removed from the site years ago. He also purchased the alleged birthplace cabin of Confederate President Jefferson Davis, then took the two cabins on the road, showing them side by side at fairs and expositions, assembling and disassembling them over and over.

By 1904, though, Dennett was in financial ruin, and committed to an insane asylum. The birthplace was auctioned off in 1905, and purchased by the publisher of Collier's Weekly, with the intent of preserving it and opening it to the public, in a proper way. The birthplace cabin, pieces of which by then were mixed up with Jefferson Davis' cabin, consisted of around 200 logs, a door, a window, and some floorboards, in storage in a basement in New York, after being displayed for the last time at Coney Island. Collier's group purchased it from its current owner for \$1,000, and the pieces were eventually transported back to the Kentucky birthplace, with much ceremony, draped in a flag, and people saluting as the procession passed from town to town. Money was raised to commission the large neoclassical memorial, designed by the architect of the Thomas Jefferson Memorial, and a dedication was held at the beginning of construction, in 1909, on Lincoln's 100th birthday, attended by President Theodore Roosevelt.

After the stone memorial building was completed, it was discovered that the cabin was too large for the space, so it was trimmed down from its original 16 x 18 feet, to 12 x 17 feet. At the end of construction, in 1911, another dedication was held, attended by President William Taft. A third ceremony was held in 1916, when Collier's group, known as the Lincoln Farm Association, turned it over to the federal government, and it finally became Abraham Lincoln National Park. President Woodrow Wilson was there to accept it.

Later research officially challenged the authenticity of the logs that made up the reconstructed cabin, and in 1956 the Park Service was finally forced to admit that the cabin was of "debatable authenticity." Eventually the "birthplace" logs were scientifically tested, and they dated to the 1850s, four decades later than Lincoln's birth.

PRESIDENTIAL PLACES

Presidents #17 - 26: Log Cabins to Brownstones



The Lincoln boyhood home log cabin replica at Knob Creek. CLUI photo

The Lincoln family left Sinking Spring Farm in 1811, when Abraham Lincoln was two years old, and moved to Knob Creek Farm, ten miles east, where they lived for five years. The site, owned and operated by the National Park Service, has a replica of the log cabin they lived in at this location, built in 1931, using logs from a nearby cabin. There is also a log cabin-style ranger station, originally constructed in 1933 as the Lincoln Tavern, a watering hole built to attract tourists who were increasingly traveling to the area to visit Lincoln-related sites.



The Lincoln boyhood home log cabin site in Lincoln City, Indiana, where bronze castings suggest the cabin remains. CLUI photo

In 1816, the Lincoln family moved again, to a farm in Indiana, near Lincoln City (though it wasn't called that then). This site is now the Lincoln Boyhood National Monument, and is also operated by the National Park Service. The Lincoln family lived there until 1830, so this is where Abraham spent most of his youth, from age seven to 21.

In the 1930s, the site of the original cabin they lived in was discovered, with some degree of certainty, however the decision was made to not make a reconstruction. Instead, a ruined fireplace and sill beams outlining the walls were cast in bronze, and set on the ground, inside a walled perimeter.



The possible, reconstructed, but definitely relocated building where Andrew Johnson was born, in Raleigh, North Carolina. CLUI photo



The definitely relocated replica of the possible building where Andrew Johnson was born, made in reverse to the original possible building, and located in Tennessee, not in North Carolina. CLUI photo

Andrew Johnson, who became the 17th president, was born in downtown Raleigh, North Carolina, such as it was in 1808, in a kitchen building, which is now a mile away, maybe. The kitchen was a small outbuilding, located behind the roadside inn and tavern where his parents worked. The rest of the inn is gone, but what was thought to be the kitchen structure has been preserved, and is located in a historic park, though its provenance is contested. After it was displaced from its original location in the 1850s, making way for larger buildings downtown, the kitchen birthplace structure moved around town a lot, perhaps reflecting local ambivalence about Johnson, who as president enforced Union policies put in place by his predecessor, Abraham Lincoln, at the end of the Civil War. After Andrew Johnson became president, outsiders came to see the birthplace structure, hacking off pieces as souvenirs, accelerating its demise. In 1904, locals began to appreciate its historical value, and it was moved again, near the railroad tracks. But plans for preservation stalled, and it sat there for 25 years, sometimes occupied by hobos. In the 1930s it was moved to state college property, and partially restored. It remained there until 1974, when it was moved to its present location, at Mordecai Historic Park.

PRESIDENTIAL PLACES

The Andrew Johnson National Historic Site preserves some buildings in Greenville, Tennessee, the town the man who became the 17th president moved to as an adult, and where he lived most of his life. A replica of his birthplace kitchen building was constructed here, though the chimney and window are on the left side of the door, not the right, as in the original. The replica of the birthplace kitchen was commissioned by Johnson's great-granddaughter in 1980, and was originally at Tusculum College, where she went to school in the 1920s. In 1999 it was moved to its present location, though just outside of National Park grounds, as it is not authentic, and is associated with another place entirely, his birthplace in Raleigh, North Carolina, 280 miles away.



Andrew Johnson's tailor shop in Greenville is inside a structure built around it by the state in 1923, and purchased by the National Park Service in 1963. CLUI photo

Johnson arrived in Greenville in 1826 as an 18 year old uneducated tailor's apprentice. He opened a shop, married in 1827, and quickly prospered. In 1830 he was elected mayor, beginning his political career. The house, and his tailor shop, are preserved within the Historic Site, and have displays throughout. The entire tailor shop is inside a structure built around it by the state in 1923. In 1851, Johnson moved his family into a bigger house a block and half away, which would be his home for the rest of his life. It too is preserved as part of the Historic Site, along with the grounds.

★ ★ ★



The cabin that Ulysses S. Grant was born in left its original location in 1888, was taken on tour around the country, and eventually installed on display in Columbus, Ohio. The home finally came home to its original location in 1936. CLUI photo

Ulysses S. Grant, the 18th president of the USA, was born in a small house at Point Pleasant, on Ohio's frontier, in 1822. His father, who worked in a nearby tannery, rented it for \$2 per month. The birthplace cabin was Grant's home for just a year. After that, his family moved on. Though many have come from around the country to see it, this house, too, has seen a lot of the country. After Grant died, in 1885, the house was purchased by a riverboat captain, who moved it onto a barge and took it downriver to Cincinnati, where it was displayed as part of the Ohio Centennial Exposition. After that it traveled to expos and fairs around the country, mostly by railroad, including the 1893 World's Fair in Chicago. Soon after that the house was purchased by a businessman and history buff from Columbus who brought it to the Columbus fairgrounds. He gave it to the state, which covered it with a large brick and glass structure, and opened it to the public as the Grant Memorial Building, in 1896. It stayed there, on display, for more than 30 years.

Meanwhile, back at the actual birthplace cabin site in Point Pleasant, where a small monument was installed in 1907, a movement was afoot to bring the cabin back, spurred on by a well-attended event held there for Grant's 100th birthday, in 1922, where President Harding spoke. But efforts dragged on, so they built a replica in 1927 instead. Nine years later, an agreement was reached, and the replica was removed to make space for the assembly of the original cabin, shipped overland in pieces, then opened to the public. The cabin has had its ups and downs since—flooded, defunded, restored, then worn down again, but it is now on the National Register of Historic Places, and is in pretty good shape, and run by the state historical society.



This cabin was relocated onto the grounds of the Grant's Farm theme park, owned by the Busch beer family in St. Louis. It is believed to have been built by Ulysses S. Grant himself. CLUI photo

Grant graduated from West Point in 1843 and began the military career that made him famous, starting with the Mexican War, and ending with the Civil War. He married Julia Dent in 1848, and lived for some years with her at her father's plantation near St. Louis, known as White Haven. Today ten acres of the plantation are owned and managed by the National Park Service as the Ulysses S. Grant National Historic Site. Most of the old plantation, though, remains in private hands, as part of the estate of the Busch family of the Anheuser-Busch Company, the largest beer maker in the country, headquartered in St. Louis. There are family mansions on the property, but also a theme park called Grant's Farm, which has been open since the 1950s, with exotic animals, tram rides, petting

PRESIDENTIAL PLACES

zoos, and festive German restaurants and gift shops. Also on site is a cabin called Hardscrabble, which was built by Ulysses S. Grant on another part of the property and later relocated to Grant's Farm. Their brochure claims that it's the only remaining structure that was hand-built by a U.S. president prior to assuming office.

★ ★ ★



Rutherford B. Hayes' birthplace building is long gone, but the site has been a gas station for nearly 100 years. CLUI photo

Rutherford B. Hayes' parents moved to Delaware, Ohio, from Dummerston, Vermont, and built the first brick house in town, where Hayes was born in 1822. They moved to another house in town a year later. Being in a downtown location, the home was later occupied by businesses such as a furniture store, before it burned down in 1910. A gas station was built on the lot in 1920, and remains there nearly 100 years later. The Daughters of the American Revolution made a small memorial there in the 1950s, with a plaque and some landscaping, which was paid for the Standard Oil Company. Hayes was the 19th president of the USA.

★ ★ ★



The replica of the Garfield birthplace cabin was constructed at a more convenient location a few hundred feet from the original location, next to city hall. CLUI photo

In 1830, James Garfield's parents bought a 50-acre plot of land 12 miles from Cleveland for \$100, and built a 20 x 30 foot cabin, in which their son James, the last of the "log cabin" presidents, was born the following year. This cabin was his home for the next 28 years, though during this time he spent some years away at college. He moved away for good after being elected to the Ohio state senate, in 1859. Garfield returned here to visit in 1880, and was elected as the nation's 20th president later that year. He died in office in 1881, and the cabin burned down sometime after that. This replica was made in 1999, and sits next to the town hall in Moreland Hills, Ohio, near the actual site, which is in the woods behind the property.

★ ★ ★



Large stone monument declaring this to be the spot where Chester Arthur was born, which it isn't, next to the reconstructed birthplace house that he wasn't born in either. CLUI photo

Though Chester Arthur was not born here, this site was thought to be his birthplace for years. A large granite monument was installed by the state in 1903. Its dedication was attended by a long list of dignitaries, who had come from far away to this remote spot five miles north of Fairfield, Vermont, near the Canadian border. Carved in stone are the words "On this spot stood the cottage where was born Chester A. Arthur the twenty-first president of the United States."

Years later, in 1953, that cottage actually appeared, in the form of a replica that was based on an 1880 photograph of the alleged birthplace house. However, while the photograph likely was of a house that stood on this location, and that house was once occupied by the young future president, his parents didn't move into it until 1830, a year after he was born. In 2002, the state put up a new sign at the alleged birthplace site to help clear things up, saying "...When he was less than a year old his parents moved to a new parsonage built at this site." Five miles away, in town, the state put up another new sign, saying: "...Although the exact location is debated, Chester A. Arthur was born on Oct. 5, 1829, in Fairfield."

The uncertainty about Arthur's birthplace dates back to at least 1880, when he was on the Republican ticket to be Garfield's vice president, and the Democrats hired an attorney to dig into his past. He concluded that Chester Arthur was born in Dunham, Quebec, where his parents had met and were married, and published a book, "How a British Subject Became President of the United States."

By then Arthur had already been president for three years. What is more likely is that in 1828 his parents moved to Fairfield, where his father was hired to be the new minister in a local Baptist church. The congregation had quickly built a temporary parsonage for him, where his son was born, in 1829. A year later, they moved to a new parsonage, where the replica is now. The birthplace replica, closed to the public most of the time, houses displays that address these uncertainties which challenge its very reason for existing in the first place. It may be unique as a museum in this regard.

Chester Arthur is buried in the family plot at the Rural Cemetery in Albany, New York. His own tomb lists his birth date as 1830, not 1829, literally taking the uncertainties of his birth to his grave.

★ ★ ★

PRESIDENTIAL PLACES



A replica of the birthplace home of William McKinley was built on the location where the original house once stood. The original house was cut in half, moved around, and later reassembled elsewhere, where it eventually burned down. CLUI photo

William McKinley, the 25th president, was born at this site in 1843 in Niles, Ohio, and lived here for nine years, until his family moved away. Afterwards the house was occupied by various families and businesses, until the property was bought in 1890 by a bank.

Instead of demolishing the home, it was cut in half, with one half moved to the back of the lot, and the other half moved to an amusement park, and the bank was built on the former house site. The two half houses were turned into usable independent buildings, one of which was a McKinley Museum for a while. In 1909, the two halves were purchased by a developer, who put them back together as the centerpiece for a housing development three miles away called McKinley Heights, where the reconstructed house became the Birthplace Home Museum.

In 1937 the by-then vacant museum burned to the ground, and the site is now a shopping plaza parking lot. In 2001, the McKinley Memorial Library purchased the now closed bank that occupied the actual birthplace site, and an adjacent property, and built a replica, with a non-original but functional addition in the back. It is open to the public as the McKinley Home and Research Center.



The replica of the Manhattan birthplace of Theodore Roosevelt, built at the original location three years after his death, and six years after the original structure was demolished. CLUI photo

Theodore Roosevelt was born at 28 East 20th Street in Manhattan in 1858, in a house very similar to the one that is there now, which is a replica. The house was originally built in 1848 by his grandfather, Cornelius Roosevelt, who was one of the wealthiest people in the city at that time. He built two adjacent brownstones here as wedding presents for his sons (Theodore's father and uncle). Theodore lived here until he was 14, when the family went on a world tour, then moved into a new apartment at 6 West 57th Street. His birthplace stayed in the family until 1896. A group of notable businessmen, including Frick, Guggenheim, and Thomas Edison, got together to preserve the building as early as 1904, but the group became mired in controversy over the misappropriation of funds, and eventually disbanded. Commercial uses took over the building and transformed it, then in 1916 it was completely demolished and a two-story cafe was built on the site. In 1919, the year he died, the Women's Roosevelt Memorial Association purchased the site, and demolished the new existing building. They built a replica of the original home, and a museum and galleries on the adjoining lot. Opened to the public in 1923, it was dedicated on what would have been Roosevelt's 65th birthday. It was donated to the National Park Service in 1963. In 2015 it underwent a \$3.7 million renovation and accessibility upgrade that closed the site for more than a year.

Presidents #27 - 44: 20th Century and Beyond

Roosevelt became the 26th president in 1901, after William McKinley was assassinated in Buffalo. By this time presidents stopped being born in log cabins, and the process for establishing and managing legacy through place was changing, with presidents themselves getting more involved. Sagamore Hill, Roosevelt's house and gentleman's farm overlooking Oyster Bay, New York, was his home during and after his presidency, and is his principal museum site. His successor, **William Howard Taft**, has his official museum in his house in Mount Auburn, Ohio. **Woodrow Wilson** has a museum at his birthplace in Staunton, Virginia, and at his Embassy Row house in Washington DC, where he retired. **Warren Harding**, president #29, has a museum at his longtime home in Marion, Ohio. **Calvin Coolidge's** landscape legacy is the preserved town of Plymouth Notch, Vermont, where he was born, became president, and where more than five generations of his family are buried.



Work on Hoover's historic legacy park began with the restoration of his birthplace cottage in 1937. For years its owners, who had profited by showing thousands of people inside for ten cents a head, were resistant to sell it. It was finally acquired in 1935 by a friend of the Hoovers, who secretly bought it on their behalf. Herbert Hoover himself helped guide the restoration. CLUI photo

PRESIDENTIAL PLACES

Herbert Hoover was the earliest president to create a historic park for himself, with his birthplace, library, museum, and tomb, all in one place, open to the public. He had plenty of time, as he lived for another 30 years after being president. At Hyde Park, New York, **FDR** also created a similar trifecta of birthplace, legacy home/museum, and tomb in one place, and established the precedent for the official presidential library at his home site too, which he designed and built while he was still living there. All presidents since him have selected a place for their official library and archive—14, so far. In 1990, **Nixon** opened his official museum and library next to his birthplace home in Yorba Linda, California, where he was buried a few years later, 100 feet from his birthplace. He, like Hoover, was born on a Quaker farm. **Truman** established his library and museum a few blocks from the home he lived in for most of his adult life, in Independence, Missouri, though his birthplace house is 125 miles south, in Lamar. **Eisenhower** created a historic campus after his presidency, in Abilene, Kansas, where his library, museum, and tomb are carefully arranged around his childhood home in a campus-like quad. **LBJ** has his ranch west of Austin, where his presidential plane and Western White House home are preserved, and where he is buried next to Lady Bird, 100 yards from his reconstructed birthplace dogtrot cabin. **Ford** has Michigan, where he put his library in Ann Arbor, and his museum and tomb in Grand Rapids. **Carter** has Plains, Georgia, where he still lives, and his library/museum in Atlanta. **Reagan's** presidential library and museum is in Simi, California, between Hollywood and his beloved Rancho del Cielo above Santa Barbara. **George H.W. Bush** lives in Houston, and put his library and museum at Texas A&M, where he already has a site picked out for his grave—even if his heart pines for Walker Point. **Clinton** left a swath of former homes across Arkansas, from Hope to Little Rock, where he put his library and museum. **George W. Bush's** museum and library is at SMU, near Dallas, where he lives in a gated community near one-time presidential candidate Ross Perot, and still weekends at Crawford.

And **Obama**? Though he will hang around DC for a few years, he still has his home on Greenwood Ave, on the south side of Chicago, a 6,400 square-footer on a double lot he once called his Kennebunkport, not too far from where his Presidential Center will be built, at Jackson Park. ♦



Obama's Sweet Home—for the moment—Chicago. His landscape legacy is still in the works, and he has lots of time to work on it. CLUI photo

See the online exhibit at www.clui.org/section/executive-decisions-personal-landscape-legacy-american-presidents.

Executive Decisions was supported by a grant from the Andy Warhol Foundation for the Visual Arts.

SWELLED HEADS OF STATE

BIG PRESIDENTIAL PORTRAITS LOOM (AND ROT) O'ER THE LAND



Mount Rushmore, the biggest heads of heads of state.

CLUI photo

WE ALL KNOW MOUNT RUSHMORE, home to some of the largest presidential heads in America. Sixty foot tall faces of Washington, Jefferson, Roosevelt and Lincoln, carved out of solid living rock by Gutzon Borglum (and others) gaze out and down at the masses below, who in turn look up and gawk at them.



President Coolidge and his peers peer at the empty trails in Presidents Park, South Dakota, now closed. CLUI photo

A few miles north in the Black Hills, however, another cluster of presidential heads lurks in the woods, unvisited, at Presidents Park, an attraction that closed in 2010. Here twenty foot tall busts of 43 presidents (up to the second Bush) are arranged along a winding path, behind a closed gate, slowly falling apart.

The heads were made by the larger than life artist David Adickes, known for his fifty foot-tall Sam Houston Monument, next to the interstate in his hometown of Huntsville, Texas. He was initially inspired to make the presidential heads after visiting Mount Rushmore, and was later commissioned to make them all by the developers of Presidents Park, five miles outside of Deadwood, in the Black Hills. The park opened in 2003, but lasted only a few years before going out of business. Apparently it is still for sale.



The big heads from Presidents Park, Virginia, now closed. CLUI photo

This was one of two complete sets of president busts of this scale that Adickes made. The other is 1,488 miles away, near Norge, Virginia. This set was commissioned for a Presidents Park in Williamsburg, Virginia, which opened in 2004. It too went out of business in just a few years.

In this case, the land was auctioned off, and a local contractor, Howard Hankins, was tasked with crushing and removing the heads, but could not bear to do so, so instead he hauled them one at a time to his property. Though damaged by the move, the ten-ton plaster busts, placed in haphazard rows, are decomposing in a dignified manner amidst his commercial mulching operation. Hankins hopes someone will come forward to help get them fixed up and put on display somewhere. Meanwhile people sneak in when they can and post photos of them online.

Other stray presidential heads made by David Adickes are scattered around, here and there. Reagan, George W. Bush and JFK are clustered next to the highway and a drive-in in Hermosa, South Dakota, and a giant Eisenhower looms over the interstate outside his birthplace at Denison, Texas. Adickes has become the go-to guy for big presidential heads, though at the moment the boom in big busts seems bust. ♦



Big Head Nidus: The artist David Adickes studio in Houston is the point of origin of large white presidential heads that are scattered nationwide. CLUI photo

STONE MOUNTAIN
A CONFEDERATE MOUNT RUSHMORE



Covering 1.5 acres of carved space, and started by the sculptor that did Mount Rushmore, the Confederate memorial at Stone Mountain is said to be the largest bas-relief sculpture in the world. Left to right are Jefferson Davis, Robert E. Lee, and Stonewall Jackson. CLUI photo

OUR NATIONAL LANDSCAPE CONTAINS MASSIVE monuments of the many other nations that have existed in this same space over time. Such as the San Jacinto Monument, in Houston, ten feet taller than the Washington Monument, commemorating the decisive battle that led to the creation of the Republic of Texas, an independent nation that existed adjacent to the USA for ten years. Or the crazy huge Crazy Horse monument in South Dakota, being built by some of the Lakota, to symbolically counter the national claim of the four white presidents carved on nearby Mount Rushmore. Then there is the Confederacy, which has monuments all over to keep its vestigial physical existence locked in place, in a big way.

These include the Confederate White House in Richmond, Virginia, where its president, Jefferson Davis, resided and presided from 1861 to 1865, which is now a museum. It's at his birthplace in Fairview, Kentucky, however, where his legacy really soars, more than 350 feet up, at one of the tallest memorial obelisks in the land. And then there are all the Civil War battle monuments, scattered all over the country, including Gettysburg, Pennsylvania, the most monumented historic site in the country, with 1,328 monuments, at last count.

But the most monumental monument of the Confederacy is the hard to miss, but often overlooked Stone Mountain, a natural rock outcrop rising 800 feet above the surrounding land north of Atlanta, Georgia, like an American Ayers Rock, on which is carved the "largest bas-relief sculpture in the world," depicting three prominent Confederate figures: Jefferson Davis, Robert E. Lee, and Stonewall Jackson.

The carving was conceived by the filiopietistic (a great word, look it up) United Daughters of the Confederacy, in 1916, though it took nearly six decades to finish it. Gutzon Borglum, the sculptor who went on to carve most of Mount Rushmore, was originally commissioned to create the piece, supported by several local businessmen, who, like Borglum, were members of the KKK, and who regularly rallied at the site. The famously contentious Borglum abandoned the project in a huff, in 1925, after completing the head of Robert E Lee. Work was

FIELD REPORT

taken up by another sculptor, but then stopped in 1928, with little done for decades. Around 1960, the state of Georgia bought the site, and sculptors were hired to complete the piece, which was finally pronounced finished in 1972.



The sculpture is occasionally maintained and cleaned by workers who rappel down from the summit. CLUI photo



Two can be seen here on top of Stonewall Jackson's head. CLUI photo

The memorial carving is still privately owned, by the Stone Mountain Memorial Association, and though the land around it is a state park, the association has control over what kinds of activities can take place there. The commercial operations are by a private concession company, the Herschend Family Entertainment company, which started out by running Marvel Cave in the 1950s in the Ozarks, and now operates several amusement sites, waterparks, and entertainment entities, including Dollywood, Ride the Ducks amphibious tour vehicles, and the Harlem Globetrotters.

Activities at the park include an aerial tram called Skyride, commissioned by the Association in 1996, part of a major renovation and upgrade of visitor services at the park. The tram leaves from a museum and gift shop complex, and arrives at a café and gift shop at the top of the mountain. Visitors are free to wander the barren landscape of exposed rock for as long as they like, then return to the gift shop, where a Coca Cola, whose worldwide headquarters is nearby in Atlanta, sells for \$3.39 a bottle.



The barren top of Stone Mountain, an anomalous igneous intrusion known geomorphologically as a pluton, with the city of Atlanta visible in the distance. CLUI photo

The ride up and down the tram provides a close-up view of the relief carving, and easy access to the top of the mountain. Visitors can also hike to the summit up the western side, and there is a road, though it is closed to the public.



A memorial lawn extends from the Memorial Hall and Visitors Center down to a pond at the base of the carving. The lawn is flanked by 13 overlooks, each representing one of the 13 states that were part of the Confederacy (the Union counted 11 Confederate states—one of the many differences of opinion between them). CLUI photo

Activities at the base of the monument include summer laser shows which project onto the Confederate carving. And in the winter a snow slide is constructed, using sloped staging and snow making machines that can generate 360 tons of snow per day, though earlier this year the attraction had to be closed, due to a rare, actual snowstorm. Also in the park is a reconstructed antebellum plantation, farm and petting zoo, and lots more. Though it is sort of a state park, it's really a kind of a family-style amusement park, and tickets for access and its activities run around \$30-\$60. This is no doubt one reason why most people stay away and don't think about it, even though this Confederate Mount Rushmore feels like a parallel universe, and is one of America's truly strange and wonderful places. ♦

BURNED TREES AND BLACK WATER
THE EERIE CANALS OF THE GREAT DISMAL SWAMP



Washington was the first president to attempt to drain the Great Dismal Swamp. CLUI photo

THE GREAT DISMAL SWAMP, in the southeastern corner of Virginia, is one of the largest remaining forested swamplands in the eastern USA. Its story is a microcosm of American history, to the present day.

At the time of European settlement, the swamp covered more than a million acres, much of the region between Albemarle Sound and Norfolk. Most of the swamp has since been developed into farmlands, and today the part that defied development is a 130,000 acre rectangular remnant at the core of the once vast swamp, and is preserved by state and national agencies.

The Great Dismal Swamp straddles the Virginia and North Carolina state line, with most of it on the Virginia side. This portion is the 110,000 acre Great Dismal Swamp National Wildlife Refuge. The south part is a 15,000 acre North Carolina State Park. Each side has its park headquarters and visitor center, and though managed as a natural area, and teeming with wildlife and scenic beauty, the swamp is a maintained artifact of the natural past.

The first European of note to pass through and write famously about it was Colonel William Byrd, part of the survey team that hacked their way through the swamp from east to west in 1728 in order to draw the state line. His desire, like others after him, was to drain the swamp and build a canal though it from north to south. He also is credited for giving the “dismal swamp” its name.

In 1763 George Washington, another Virginian surveyor, who purchased much of what he surveyed, came to the Swamp to implement his improvement plan, draining it for agriculture and building canals.

Washington formed the Dismal Swamp Land Company with other local businessmen, and purchased at least 40,000 acres. He directed the construction of a five mile-long canal known as the Washington Ditch, the first real attempt to reach into the core of the swamp, which is said to be the first of the many American landmarks that now bear his name.



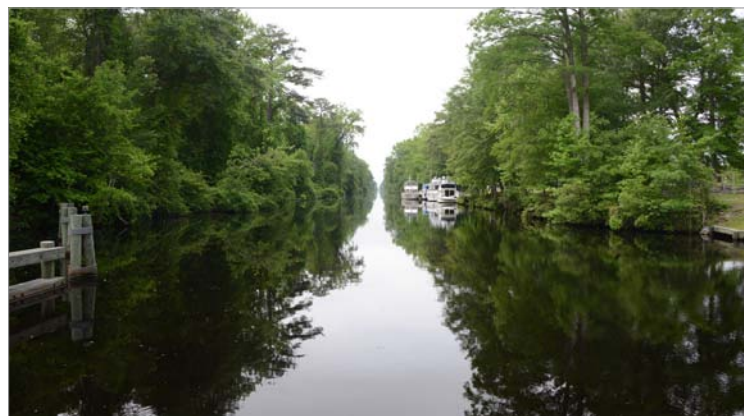
The Washington Ditch heads straight towards the center of the swamp from the northwest. Like many other ditches built in the Great Dismal Swamp, it is both a road and a trench, as the material extracted to make the trench created a linear mound alongside it—the road. CLUI photo

The swamp remained tenacious, resisting these attempts to drain it, so instead of focusing on agriculture, the company pursued logging. Many old Cyprus trees were extracted and milled into shingles and planks.

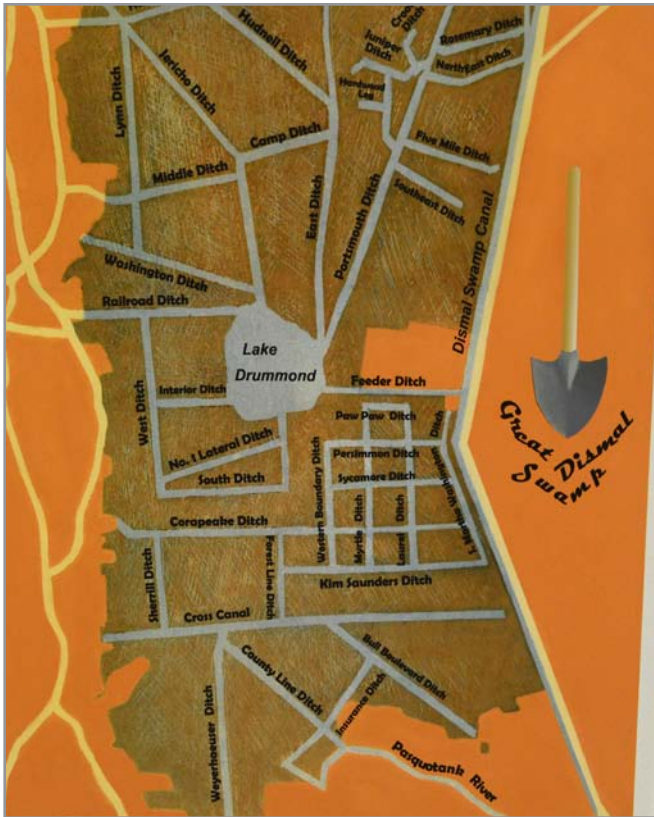
Slaves continued to be the labor for the company, and conditions were especially harsh in the nearly inaccessible terrain of the swamp, which was also full of chiggers, ticks, mosquitoes, and poisonous snakes. Since the slaves knew the swamp better than anyone, many escaped into its inner reaches, and even settled there in isolated “maroon colonies.”

Washington also pursued the idea of building a navigation canal along the east side of the swamp, which would connect the resources of the region, like his lumber, to the markets and ports in the north. The canal would connect Albemarle Sound with the Chesapeake Bay, spanning watersheds, and creating a shipping corridor that avoided the long and shallow waters to the south, and the small treacherous cut to the ocean at Ocracoke Island.

Construction on the 22 mile long canal started in 1793 by the Dismal Swamp Canal Company, using slave labor, and was completed in 1805, six years after Washington’s death. It was one of the earliest canals made in the USA. As imagined, the canal opened up the region to commerce, and commercial traffic peaked in the mid 1800s. In 1860 the bigger and better Albemarle and Chesapeake Canal opened, and the Great Dismal Canal’s use waned. Then the railroads moved in, and the canal era ended all over the country.



The Great Dismal Swamp Canal. CLUI photo



Map showing the extent of the canals in the swamp, from the display in the Refuge Visitor Center. CLUI photo

Today the canal is a relic, the oldest operating artificial waterway in the country, still maintained by the Army Corps of Engineers, including its locks and rotating bridges. It is used primarily by recreational boaters seeking a scenic inland alternative along the Intracoastal Waterway, down the eastern seaboard.

Washington's share of the land and logging company passed to his heirs, and logging continued into the 1960s. In 1973 and now owned by the Union Camp Corporation, the land was given to the Nature Conservancy, which led to the creation of the Great Dismal Swamp National Wildlife Refuge.

Originally, of course, the swamp formed in a natural balance between water and land. Now, with more than 150 miles of canals in the swamp, the refuge has to try to recreate the original conditions to keep the trees and wildlife intact. It does so through a network of a few dozen control structures along the canals that regulate the amount of water coming in and going out.

In the middle of the swamp is a surreal circular clearing, three miles wide, known as Lake Drummond. Reachable by a dirt road from the west, or by boat along the perfectly straight Feeder Canal that connects to the main canal, the lake is a hole in the middle of the swamp, which itself is a hole in the farmland that surrounds it.

Lake Drummond seems too round and distinct to be a naturally occurring form, and not some byproduct of this altered and artificially maintained swamp, but it is natural, looking very much as it did when it was spied in the 17th century by the colonial governor, William Drummond, who gave it its name. In fact, it is the largest natural lake in the entire state of Virginia, and one of only two. Some speculate that it was formed by a meteorite.



The dark still waters of Lake Drummond, at the heart of the Great Dismal Swamp. CLUI photo

The lake used to be ringed by hunting cabins, all of which have been removed. Its water appears black due the dark muck just beneath the surface—the lake is only around three feet deep. The water itself is brown in color, like tea, full as it is with tannins and peat. Dismal Swamp water was once prized by sailors and taken in kegs on sea-going journeys. Next to the lake is a clearing, where fires in 2008 and 2011 burned 10,000 acres of forest. Fire and water at the core of the swamp.

The Great Dismal Swamp stands out for what it is, but also for what it is not—the farmland and sprawl that surrounds it. The swamp is in the back yard of Norfolk, the east coast hub for the Navy. A number of training sites and airfields ring the swamp, on land successfully drained for agriculture long ago. Some of them are fading into obsolescence, being reabsorbed. Others are finding new uses, or soldiering on, in these increasingly unstable times. ♦



The Academi Training Site, south of Moyock, on former farmland reclaimed from the drained part of the Great Dismal Swamp, is a large and diverse training center for private military and security forces. Many refer to it by its original and better-known name, Blackwater, a reference to the aqueous color of the swamp. CLUI photo



CLUI photo

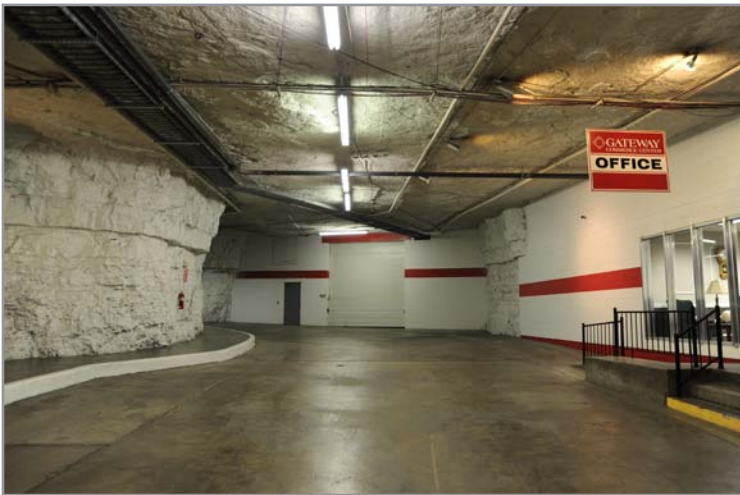
HOLLOWED EARTH
THE WORLD OF UNDERGROUND BUSINESS PARKS



Space Center Underground, Independence, Missouri. CLUI photo

THERE ARE A FEW DOZEN commercial underground business complexes in the country, mostly in the Midwest, Missouri, and around Kansas City. Thick beds of limestone found in this region were mined by boring horizontally into hillsides, into these dry deposits, above the water table. Miners used the room and pillar technique, leaving empty space punctuated by rows of columns of un-mined rock to hold the ceiling up.

Limestone is one of the most common rocks out there, and is used in all kinds of industries, including for cement, fertilizer, and steel, though mostly these days it's used as aggregate for construction and road projects. Generally quarried in open pits today, there are dozens of underground limestone mines in the midwest and south, mostly left from the old days, before big earth moving and rock crushing equipment was developed.



Wampum Underground, Pennsylvania. CLUI photo

The vast hollows left by underground limestone mining began to be redeveloped commercially in the post-war boom of the 1950s. Some sites were marketed for safety and security, in an unstable Cold War climate. Others grew simply due to economics—stable temperatures, ease of construction, and a central national location.



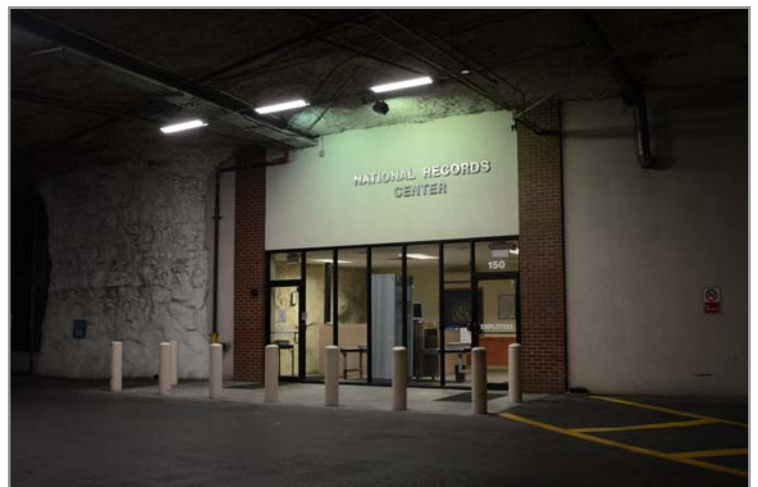
SubTropolis, Missouri. CLUI photo

The Kansas City area has the most underground business parks. Around 20 million square feet of the city's business and industrial space is below ground, in ten large-scale redeveloped limestone mines.

Beyond Kansas City, the rest of Missouri is full of limestone, and riddled with known and unknown underground spaces, including natural limestone caverns formed by dissolution of the soluble rock, and mined spaces where limestone and other material were extracted. Several limestone mines in the Ozarks, and around St. Louis, have been turned into commercial business parks and storage facilities.

Beyond Kansas City and Missouri, underground limestone mining took place in Tennessee, Kentucky, and western Pennsylvania, where it was extracted to a large degree by the local steel industry. It occurred in other states, too, though few of these other mines have been redeveloped in a major way.

The majority of former underground limestone mining space remains undeveloped. Even at places that have been redeveloped, there is usually much more space that remains raw. At the edges of the warehouse districts, the caves continue, dirty and dark. These spaces remain, latent—possible underground business parks of the future.



Underground Federal Records Center, Missouri. CLUI photo

FOCUS ON THE UNDERGROUND



CLUI photo

SubTropolis

SubTropolis is the largest underground business park in the nation. It is located northeast of downtown Kansas City, across the Missouri River. It was developed by the Hunt Midwest real estate company, which started in the local asphalt and limestone mining industry, and carved out this mine. It started leasing out space inside in 1964, and now has five million square feet of developed space inside, and has plans to build out another nine million more. Inside are 4.5 miles of paved roads, 2.1 miles of rail spurs, 350 truck docks, 1500 parking spaces, and around 50 companies that lease space, employing more than 1,000 people. Companies include Underground Vaults and Storage, which has a major commercial film archive inside; truck customization businesses; Hallmark cards; and the US Postal Service. There is also a large data center, part of the SubTropolis Technology Center. Hunt Midwest has also developed the space on top of SubTropolis with vehicle auction and storage yards, tucking terminals, and the Worlds of Fun amusement park. Hunt Midwest was founded by Lamar Hunt, a member of the famous Dallas oil tycoon family, who was better known as the founder of the National Football League.



CLUI photo

Space Center Lee's Summit

One of two underground business parks in the Independence Missouri area operated by Space Center, this one, at Lee's Summit, has the US government's Federal Records Center as a major tenant. This is one of 18 large-scale regional Federal Records Centers, operated by the National Archives and Records Administration, a number of which are located underground. This one serves several federal agencies' storage needs for the region covering New York, New Jersey, Puerto Rico, and the US Virgin Islands—one of nine different regions that cover the nation. Records handled by the Center include tax-returns, passport applications, and even secret military records. Also located here is SERCO, an electronic records and data company, which works mostly for the government, and the cash and carry store for Hanna's Handiworks, a seasonal home décor supplier. Space Center's other site nearby, known as the Executive Park, contains offices and warehousing for around 50 tenants. Several businesses are related to document storage and management, including the federal government, which has a park service office and a Social Security records facility here. There are also manufacturers of furniture, doors, caskets, moulding, and puppetry. The facility has around five million square feet of space, and covers around 160 acres.



CLUI photo

Parkville Commercial Underground

This underground business park is located underneath the grounds of Park University, in a small town across the Missouri River from Kansas City. A limestone mine operated here, on the shores of the river, until sometime in the 1940s. The University has used some of it for a while, such as for library and other campus services, but decided to further develop it into a commercial operation, which opened around 2005. There are now 385,000 square feet of leasable space constructed within a mined area of more than a million square feet. Tenants include a data center, a whiskey distillery, and distribution companies.



CLUI photo

Commercial Distribution Center

Commercial Distribution Center is an underground business, storage, and distribution center in a former limestone mine on Truman Road, west of Independence, Missouri. This facility, one of several in the area, specializes in food grade storage, and one of its largest tenants is Food Distribution Associates, a grocery supplier. It opened in 1974, and has around 160 acres underground. The freezer space alone covers more than 18 acres at -5°F . Other businesses inside, accessed through a second entrance, include an ice company, a printing and binding company, a moving company, and construction companies.



CLUI photo

Brunson Instrument Company Headquarters

The Brunson Company is a precision tool company based in Kansas City, and is a worldwide leader in the field of measuring technology known as metrology, used in a wide variety of industries from surveying to aerospace. In 1955, Mr. Brunson was seeking a stable location to build and calibrate specialized equipment, and decided to mimic the process used by local limestone miners, and extract limestone, while creating an underground space for the company to operate out of. Over a few years it excavated into a bluff east of town, across from an existing mine, and created a 140,000 square foot lab and factory, that opened in 1960. This was the first major commercially developed underground space in the region, and possibly the only intentionally created underground space, as opposed to the others, which were created as an unintentional byproduct of the mining process. The Brunson project, now expanded to 225,000 square feet, helped city planners and building safety officials see the possibilities, and the value, of the existing limestone mining caverns that ringed the city, which eased their redevelopment.



CLUI photo

Springfield Underground

Springfield Underground started as a limestone quarry in 1946. Warehousing began in the excavated caverns in 1960, while mining continued. By 1994, the mine had excavated around 2 million square feet, and Springfield Underground was created by its owners to market and further develop it as an underground business park. Today a few dozen companies operate in the space, including Buske, a third party logistics and supply chain company which leases 235,000 square feet underground. A 56,000 square foot data center and co-location facility was built by the local municipal utility, and was sold to Bluebird Networks in 2014. The largest tenant is Kraft Foods. This has been one of their principal bulk cheese storage facilities for decades.



CLUI photo

Wampum Underground

A former underground limestone mine in western Pennsylvania, across from a large Cemex cement plant in Wampum, has been turned into a multi-tenant business park. For some years it was known as the Gateway Commerce Center, but is now called Wampum Underground. It was mined from the 1870s to 1946, leaving 2.5 million square feet of excavated space, with more than a million of that now redeveloped into offices, warehouses, and storage. Records storage started with the General Services Administration in 1963, and now Underground Archives manages records and media. An optical company started working on a lab inside in 1965, which is now L3 Brashear's high-tech construction facility for sensitive optics used on observatories and satellites. There is also storage for RVs and personal effects.



CLUI photo

Meritex Lenexa

Meritex, a commercial real estate developer based in Minnesota, opened this underground office park in a former limestone mine in Lenexa, a southwestern suburb of Kansas City, in 1999. It has around 3 million square feet of mined space, with more than half of that developed. One tenant is Caverns Technologies, which has operated a data and co-location center there since 2007. The National Archives and Records Administration operates a Federal Records Center next to the commercial underground office park, connected underground, but with a separate driveway and entrance. It is one of 18 Federal Records Centers, some of which are underground, which store hard copy and digital data from dozens of federal agencies, including the IRS, Defense Department, and the Social Security Administration. These facilities are separated into nine regions that cover the nation, though the storage facilities are often not located in those regions. This facility houses material for the region that includes Iowa, Kansas, Missouri, and Nebraska, as well as the IRS processing center in Ogden, Utah.

FOCUS ON THE UNDERGROUND



CLUI photo

Rock City Underground

Rock City Underground is a former limestone mine on a bluff above the Mississippi, downstream from St. Louis, near the town of Valmeyer, Illinois. It is a location for the National Archives and Records Administration, which leased 400,000 square feet to house federal personnel records in 2008. Another major tenant is Blue Line Food Distributors, which handles the Little Caesars Pizza brand. So far around 1 million of the 6 million square feet of the mine has been redeveloped.



CLUI photo

Neosho Underground

Also known as the Ozark Terminal, the underground limestone mines north of the town of Neosho, began in 1943, and warehouse construction there began in 1956. There are two principal portal areas. One is the main Ozark Terminal, which has three portals leading to leased spaces underground. The other is dominated by the JT Sports Licensing Company, which has a few brands of sports equipment products, mostly baseball-related, such as Rawlins bats and gloves, which are warehoused inside. Total square footage inside is around 2 million square feet, 600,000 of which is developed into nine rooms.



CLUI photo

Rush Creek Underground

A few miles northeast from the massive underground spaces of SubTropolis, and past a large Fedex distribution complex, is another Kansas City area underground business park called Rush Creek Underground. It is relatively new, and is being marketed as a light industrial development, with over a million square feet of developable space.



CLUI photo

Interstate Underground Warehouse and Distribution

This underground space in a former limestone mine east of Kansas City, with over 5 million square feet, mostly serves as a food industry warehouse. Its freezer space covers more than 500,000 square feet, and the rest of it is cooler space and dry storage space that covers an area equivalent to more than 70 football fields. It also has a rail entrance. A separate entrance is used for self storage and for RV storage.



CLUI photo

Mega Cavern

Limestone mining stopped here in the 1970s, leaving around 4 million square feet of caverns on a single level, extending under portions of the city, including the zoo. In 1989 it was purchased by developers to be turned into an underground business park. Today 700,000 square feet has been converted to this function, with around a dozen or so tenants, including Underground Vaults and Storage. A similar amount of space has been converted into a kind of underground amusement park, with a 350,000 square foot mountain biking course, zip lines, and aerial rope lines. A tourist tram runs regularly through the caverns, and seasonal lights and other displays are open to the public as well.



CLUI photo

National Cold Storage

An underground limestone mine along the Kansas River at Bonner Springs, Kansas, west of Kansas City, has been developed into two commercial operations, with separate entrances. One is National Cold Storage, a food services warehouse with truck and rail access, with a half a million square feet of freezer space. North of that is a corporate records storage facility called, aptly, Corporate Record Storage.



CLUI photo

Carthage Underground

This former limestone mine has a few pits with several access portals and loading docks for trucks. Most of it is owned and operated by Americold, the largest refrigerated warehouse company in the country. Americold, based in Atlanta, has more than a hundred chilled warehouses around the nation, usually next to meat and vegetable production sites, or in logistics centers near major cities. Carthage is the company's largest facility, and is located roughly in the middle of the country, between the food production areas of the south and midwest, and the consumer markets on the east and west coasts. The company has around three million square feet of underground warehouse space here, and 37 million cubic feet of refrigerated space, roughly ten times the amount in a typical facility. Other companies use the underground space as well, including a veterinary equipment manufacturer, and Schrieber Foods, a national cheese company with production centers nearby. A tennis club with two courts opened underground in 1979, taking advantage of the constant 60 degree temperatures, and the unusually high ceilings of the mine, as much as 60 feet. Rumors of hundreds of miles of tunnels, alien encounters, and government conspiracy seem to be centered more on Carthage Underground than at other similar places, and urban explorers plumb the undeveloped caves around the facility.



CLUI photo

Brady's Bend Underground Storage

Brady's Bend, located in western Pennsylvania, is an underground limestone mine with a reported 50 million square feet of excavated space, under around four square miles of land, which might make it the largest underground limestone mine in the nation. So far, around one million square feet has been turned into storage, warehouse, and office space, and another million used to store RVs and boats. The mine was started in the early 1900s by US Steel, and is still producing limestone. It is associated with the redeveloped mine at Wampum, some distance away but owned by the same family.



CLUI photo

Carefree Industrial Park

Carefree Industrial Park is one of four underground commercial complexes near the town of Independence, Missouri, east of Kansas City. Carefree is in an industrial area south of the Missouri River, next to the Central Plains Cement Company, which operates a large and active plant in and amidst the former underground limestone mining network. Carefree's mines cover more than seven million square feet, but not all of it has been developed. It has several underground entrances accessed from a central pad, where trucks can park and wait. Inside space is leased mostly to warehousing and distribution companies, including third party logistics companies like Midwest Material Management, Centerpoint, and FW Warehousing. The site was first developed as Innerspace Storage in 1975.



CLUI photo

Iron Mountain, Boyers

This former limestone mine is one of the more notorious underground sites in the nation, covering more than a thousand acres underground, with up to two million square feet of developed space. In addition to storing films and documents for many national companies, it has been the location for one of the largest image archives in the world, generally known as Corbis, once owned by Bill Gates, but now merged into the collections of its former rival, Getty Images. The facility was originally owned by US Steel, which from 1902 to 1952 excavated limestone for use in its steel mills around Pittsburgh. The largest tenant in the complex has been the US government, which started storing records here in 1960, and has at times employed more than a thousand people inside the mines, working for the Office of Personnel Management, the Patent and Trademark Office, US Investigations Services, and others. In 1998 its owner, National Underground, based in the Pacific Northwest, was purchased by Iron Mountain, now the largest records storage company in the nation, with over 100 locations, only a few of which are underground. Iron Mountain has recently expanded its data center, known as WPA-1, inside the mine.

GOING DEEP

AN OVERVIEW OF THE UNDERGROUND

FORMER LIMESTONE MINE CAVERNS MAY be the largest redeveloped and occupied subterranean structures in the nation, but there are other kinds of mines and underground spaces all over the place, some of which have been redeveloped in curious ways too. There is also, of course, intentionally constructed occupiable underground space, like basements, vaults, and tunnels. One wonders at times if there may not be more enclosed space below the surface of the nation, than above it.

In cities, lots of space can be found underground. Most tall buildings extend below grade, and sometimes these spaces are connected to shopping malls, subway stations, pedestrian tunnels, and parking garages, all below street level. This subterranean city can be an interconnected public space, where people might not even be aware they are underground, or care. It is simply an extension of the city below grade, without streets to cross, or weather to endure. Street level itself is a mutable thing in cities, as exemplified in places like Seattle's or Atlanta's downtown, where storefronts from older street levels can be visited on underground tours.

Outside of cities, corporate, industrial, and educational campuses, with integrated buildings on a limited footprint, are rife with underground spaces, like the steam tunnels clandestinely explored by collegiate rite and ritual. On campus and off, a remarkable number of libraries have extensive basements, or additions that are below grade. As do other collecting entities, like archives, museums, and government agencies. And most domestic structures have some kind of basement, perhaps with the furnace, or an apartment building laundry room, or perhaps just enough crawlspace inside the foundation to crawl.

In all these cases, these spaces are extensions of the above ground architecture. They are not really, self-consciously, or exclusively, underground. True underground space is space that acknowledges its undergroundness, or requires it. It has some kind of transition, a displacement, between above, and below, the outer worlds and the inner, a portal with a garage door, a ramp, or a 16-ton blast door.

The CLUI has had its head in the ground since the beginning of its existence, understanding that everything on the land has some relationship with what's below. What follows here is an exploration of true underground spaces, arranged typologically, as they occur across the American land. These sites and more can also be found, in a sense, in our Land Use Database, visitable remotely, if not actually. They are of course all out there, somewhere.

Underground Mines Turned Into Farms, Night Clubs, Data Centers, Physics Labs, and Paintball Fields

Our exhibit about limestone mines that were turned into business parks had to leave out some limestone mines that were turned into other things, things that were not business parks. These include single-purpose businesses, like Toys Underground Storage, a vehicle (primarily an RV and boat) storage company, which uses an old limestone mine in western Pennsylvania. It is near the Creekside



Entrance to Creekside Mushroom Farm, said to be the largest mushroom farm in the country, underground or not. It is inside a former limestone mine, more than a square mile in size, with 150 miles of galleries along its grid of roads. It can produce up to 60 million pounds of mushrooms annually, and employs more than 500 people. Founded in 1937, it is also known as Moonlight Mushrooms, its brand name.

CLUI photo

Mushroom Farm, which operates inside a former limestone mine as well.

It's not just limestone mines that get repurposed, of course, though they are the largest kind of underground mine that offers a drive-thru, single layer that makes them convenient for redeveloping. Though generally softer and less stable, and mined in open pits, some former gypsum and sandstone mines have also been repurposed.

A former underground gypsum mine in Grand Rapids, Michigan was converted into a produce storage warehouse in 1957, called Michigan Natural Storage, though, of course, a mine is not very "natural." Its caverns are accessed by elevators operating inside two vertical shafts. Around 750,000 square feet is said to be available for use still, underground. In 2001, the Underground Secure Data Center Operations company (USDCO) opened a data center in the mine.

In Crystal City, Missouri, a former underground sand mine has been turned into a recreational center called Crystal City Caverns, with laser tag, volleyball, disc golf, and kayaking tours on a 150 acre subterranean lake. It also has some underground warehousing, though the entire facility has been closed down for a few years due to flooding.

It's not unusual for recreational activities to be installed inside closed mines. There are zip lines and mountain biking courses in Mega Caverns, in Kentucky, and at SubTropolis, in Kansas City, where Jaeger's Paintball is inside one of the cavern areas.

The Wabasha Street Caves are former sandstone mines on the shore of the Mississippi River, near St. Paul, Minnesota, which were turned into a speakeasy in the 1920s, and have since been further developed into an event venue and a big band dance hall. A castle-style front was constructed in the 1930's, when it was known as Castle Royale.

A former underground sandstone mine in Festus, Missouri, was turned into a roller rink and night club called Caveland, where musical acts including MC5 and Bob Seger once played (though not at the same time, unfortunately). It closed in 1985, and sat idle

FOCUS ON THE UNDERGROUND

until 2003, when it was bought on Ebay in 2003, and turned into a private home. It is located down the street from Festus RV and Boat Storage (inside another mine, in the same bluff).

Some former mines have been turned into physics research facilities, like portions of the Soudan Iron Mine, in Michigan, which has the MINOS neutrino detector installed deep in the mine, measuring neutrinos sent through the ground from the Fermi Lab, outside Chicago, hundreds of miles away.

The Sanford Lab in the former Homestake mine, in Lead, South Dakota, is another particle physics lab inside a mine. The underground mine is huge, sometimes referred to as the largest mine in the western hemisphere. Over 125 years, more than 40 million ounces of gold was extracted from the mine, until it closed in 2001. There are 370 miles of tunnels, as deep as 8,000 feet down. With private and public funding, the mines have been turned into research for cosmic radiation, like dark matter and neutrinos, which are more visible deep underground, due to the filtering effects of the earth above them.

Part of a decommissioned copper mine in White Pine, Michigan, has been converted by Prairie Plant Systems into an underground grow house and plant research facility called SubTerra. Doing this kind of research in an underground facility isolates it from the outdoor environment, limiting the possibility of contamination from inside to outside, or outside to inside, both important, especially if working on genetic modifications.

Mining in large underground salt deposits occurs in upstate New York, Louisiana, Oklahoma, and underneath the city of Detroit, to name a few places. It creates large hollowed out underground spaces. In a few cases these mines have been turned into storage facilities. The most developed of them is the salt mine in Hutchison, Kansas, one of the largest salt mines in the world, part of which has been turned into a storage site for records and other assets, including Hollywood films and oil company data. Developed by Underground Vaults and Storage, it opened in 1959, when a lease was struck with the Carey Salt Mine, which still operates at the location, under a different name. Underground Vaults and Storage (UV&S) has expanded into



A storage area for Underground Vaults and Storage is part of the display of the Salt Mine Museum. The two entities seem to be merged underground. CLUI photo

several other cities, though it has underground locations at only two other sites, in Mega Caverns, in Louisville, and in the SubTropolis development in Kansas City, where it has a refrigerated film vault.

At Hutchison, UV&S has 1,660,000 square feet of storage space, employing 65 workers, within a mine that covers more than a square mile underground. The mine has a vertical entrance only, and is not a drive-in cavern, like many of the limestone mines that have been converted into storage. In 1985, UV&S built a loading dock building next to the shaft that connects to the mine. In 2003, the Kansas Underground Salt Mine Museum was established, operated by the county historical society and supported by the salt company and UV&S. A new shaft into the mine was constructed, and opened in 2005. Visitors descend in the main shaft, 650 feet below grade, and can tour 100,000 square feet of the mine filled with displays, next to the UV&S storage location.

Iron Mine Turned into Iron Mountain

After a series of acquisitions and mergers over the past twenty years, Boston-based Iron Mountain has become the nation's largest records management and data storage company. Most of its hundreds of facilities around the USA are above ground offices, truck depots, and warehouses, but several are underground. The largest of the company's underground sites is the former US Steel limestone mine in Boyers, Pennsylvania, which has one of the company's ten data centers inside it too. But it all started with a former iron mine in Livingston, New York, where ore was extracted to feed the iron works up river at Troy.



Entrance to Iron Mountain, Livingston. This former iron mine, in the Hudson Valley, near Livingston, New York, is where the Iron Mountain company started, and where it got its name. CLUI photo

The surface property at Livingston, which included the now abandoned iron mine, was eventually acquired by a mushroom farmer named Herman Knaust, who marketed the mine as a safe underground storage site for New York City banks and corporations, starting in 1951. Customers were found, initially banks seeking safe records storage, after he set up a sales office in the Empire State Building, calling the business Iron Mountain Atomic Storage. Soon the company expanded into another underground mine, a former limestone mine across the Hudson in Rosendale. The company opened above ground storage warehouses in the 1970s, and started buying up other records management companies, like Bekins, Bell and Howell, and Recall, to become the dominant player in the field today.

Banking Bunkers and other Purpose-Built Underground Storage Spaces

The use of underground space for storage and safekeeping is, of course not limited to re-used pre-existing mines. Purpose-built underground archives and records storage facilities, made during the Cold War and to the present day, are scattered here and there, with a remarkable number around New England.

Iron Mountain expanded into New England in 1980, when it purchased a bank records bunker near Greenville, Rhode Island, known as the Industrial National Bank Repository (a bank that evolved into the Fleet Bank of Boston). The facility was constructed underground for safety and security, in the 1960s, and remains in use by Iron Mountain.

The Pepperell Underground Records Storage Center, in Pepperell, Massachusetts, near the New Hampshire state line, was a vault belonging to the First National Bank of Boston, built in 1960. It was shared with seven other of the major banks of New England. Underground space measures 60 x 120 feet, a total of 7,200 square feet. Known as Location X, it had emergency supplies for up to 50 people, as well as decontamination showers, a generator, and a 16,000 pound blast door. It was located on a 40-acre estate that was also owned by the bank. In 1991, it was bought by Archive Storage Inc, for use as a computer records storage facility. It has been on the market relatively recently.

Off-site underground bank vaults built during the Cold War are not uncommon, though few are in use as records storage vaults now. There is another underground banking bunker in rural northern Connecticut, similar to the vault in Pepperell, though a bit larger, at 10,000 square feet. It was built in 1962 by the Underground Record Protection Cooperative Trust, a group of banks and insurance companies. Its primary function was to store records out of the way of nuclear attack (outside the city, and underground), but, like Pepperell, it could also house a few dozen people, presumably executives associated with the Trust, for a few weeks, and had decontamination showers, cots, and food rations. After its original purpose ended, somewhere in the early 1990s, the bunker changed hands a few times, then fell into disuse. In 2013, it opened as a secure wine storage facility called Horse Ridge Cellars.

One of the most notorious banking bunkers is the former Federal Reserve facility at Mount Pony, near Culpeper, Virginia, a three-level underground vault built by the Federal Reserve and the Treasury Department in 1969 to house the hub of their nationwide communications network, and to store \$241 billion in cash (including rows of palletized \$2 bills), which would be used to jump start the economy following a nuclear attack. After being offered for sale in the early 1990s, the facility was purchased by philanthropist and film preservationist David W. Packard, and thoroughly redeveloped over many years into the National Audio Visual Conservation Center of the Library of Congress. Inside are millions of movies, TV episodes, and audio recordings on every conceivable recording format, including nitrate film, kept in one of the two underground film vaults there. (This facility was described extensively in the 2013 issue of *The Lay of the Land* (www.clui.org/newsletter/winter-2013/nations-media-archive).



The top of the underground vaults at the Packard's National Audio Visual Conservation Center, in the former bank bunker at Culpeper, Virginia. CLUI photo

Through the Packard Humanities Institute, which provided the funding for the \$250 million facility in Culpeper, David W. Packard built another preservation campus and film vault on the west coast, north of Los Angeles. The facility, next to Interstate 5 in Santa Clarita, opened in 2014, and, from the outside resembles the colonnaded stoa found in the cities of ancient Greece. The interior is modeled after a 15th century Florentine monastery. Two film vaults are located in an adjacent structure, partially underground. Underground storage is considered optimal for film storage, especially the old nitrate films which are unstable and prone to combustion.

There are only a few film archives in the country that store nitrate film, and they include the major film archives in the nation: the two Packard archives; the George Eastman House's Louis B. Mayer Conservation Center in Chili, New York; and the Museum of Modern Art Film Archive, in Hamlin, Pennsylvania. MoMA's collection is the largest private film collection in the world. Most of it is located in a purpose built 33,000 square foot, two-building, partially underground compound on 37 acres of woodland and meadows in the Pocono Mountains.

A considerable part of the history of document management and archiving centered around another film medium, microfilm, which was first developed to more efficiently record and store documents by the banking industry in the 1920s. Kodak bought these technologies and expanded them into a standard for archiving newspaper, paper which degraded quickly. As printed information in all forms continued to test the storage limits of archives and libraries, microfilm became the standard master format for much of the printed material produced in the world. Library basements and off-site library storage areas are often full of microfilm, though it is going away—being digitized, like everything else.

One of the largest collections of microfilmed records is inside the Granite Mountain Records Vault, the principal storage facility for the genealogical research programs of the Mormon Church. Since the Mormons are interested in converting the ancestors of every living person, that means having the names for everyone who has ever lived on the planet, or as close to it as they can get. This effort has created the largest genealogical reference system in the world, the hard copy of which is stored on millions of rolls of microfilm (and microfiche) inside this facility—billions of tiny images on acetate. The Granite Mountain Records Vault was constructed in the early 1960s, and

FOCUS ON THE UNDERGROUND

contains six archival storage areas, covering a total of 65,000 square feet. The space was created by drilling and blasting into solid quartz monzonite rock at the base of the Wasatch Mountains, in Little Cottonwood Canyon, minutes from Salt Lake City.

Two miles further up Little Cottonwood Canyon from the famous Mormon records vault is another underground storage facility, which is privately owned and operated by Perpetual Storage Incorporated. It was built after the Mormon vault, in 1968, taking advantage of the same monolithic and moisture-free rock structure, and is marketed as a highly secure storage facility. It accepts only digital media, like hard drives, magnetic tape, and optical discs, or microfilm, but not paper, further adding to its non-flammable safety.

Keeping Good Company: Corporate Bunkers

The extent and location of corporate “go-to” “bug-out” places is one of the most unsolved mysteries of the underground, as it’s hard to tell the difference between something that is successfully hidden from the public, and something that doesn’t exist. But it is certain that it isn’t just the government and banks that had Cold War bunkers for their executives.

One “outed” corporate bunker that received some media attention is the Westland Bunker, located northwest of Houston. It was originally constructed by the owner of Westland Oil, which was headquartered in an office building next door. The underground facility has around 40,000 square feet on two levels, underneath a (now dry) pond on the corporate grounds, designed to hold as many as 350 people for up to 3 months. Westland Oil didn’t last, going bust in 1987, and the camp was left empty for 13 years. In 2001 it was bought by Curtis Development, which hired the local Westlin Corporation to redevelop, market, and lease it. After hurricanes in 2005, companies began leasing the space, including Continental Airlines, which converted some of it for use as a crisis operations center. The building is now mostly being marketed as a secure data center, called The Bunker.

Ma Bell’s Bunkers

The corporation with the most underground space is—or was—AT&T. AT&T’s communications infrastructure of the 1950s to 1990s included hundreds of underground facilities, ranging from



The Razor Road AT&T bunker. This AT&T facility is a typical large underground telco equipment vault. It is located along Interstate 15, between Los Angeles and Las Vegas, at the Razor Road exit. The highway here follows a utility corridor, which includes major coaxial communication cables operated by AT&T. This is one of a few vaults on this stretch of desert highway between the two cities. Below the surface is 8,200 square feet of space, mostly in one large room, with a 20 foot ceiling. Inside would be equipment, generators, fuel, and maintenance machinery. On the surface is just a fenced two acre lot, with a small building containing the stairwell and crane hatch. The vault is under the lot, under two feet of concrete. This site was listed for sale a few years ago for \$750,000. CLUI photo

single story equipment vaults to multi-level underground system control centers. Many of these were hardened concrete structures to help vital communication equipment survive a nuclear attack. It also reduced the likelihood of damage from vandals, as many of these facilities were unmanned, and sometimes very remote.

One of the most common types of large underground telco vault can be found at repeater stations along the national microwave tower and coaxial cable networks. Starting in the 1990s, many of these facilities were sold off. If the site was on a hilltop near a commercial market, it might have been purchased by the American Tower Company, which leases space on towers to radio and cell companies, though the underground vaults remain mostly under-utilized. In some cases these vaults were purchased by private companies or individuals, and found new uses. Many remain on the market.

Larger underground AT&T facilities are generally found on mountain tops, accompanying antennas for long range communication. Some of these were designed to house members of the government, and people designated by the government, during a national emergency, like a nuclear attack. One such site sits atop Short Hill Mountain near Harpers Ferry, Virginia. It was built by AT&T in the 1960s as part of the company’s communications infrastructure, and especially the part of it related to military communications. It is similar to four other facilities in the mid-Atlantic region known as Project Offices, which had large concrete parabolic tropospheric communication antennas, and an underground bunker of at least several thousand square feet, with a drive-in entrance. Four of the five Project Office sites are still in use in some form. At this site, in 2016, AT&T was proposing to build a 160,000 square foot building next to the underground building, but without being able to adequately specify its function, the plan was not supported by locals, and the company changed its mind. The large concrete antennas were removed a few years ago, in anticipation of this development.

Another AT&T Project Office site is known as the Chatham Big Hole Site, south of Chapel Hill, North Carolina, so-called because of the big hole that was observed by locals during its construction. The other Project Office sites are closer to the nation’s capitol, and the reason for this location, further away, is unclear. It is even more curious, as its communication connection to the others through the large tropospheric antennas was enabled through a relay facility, which was built at great expense. That site, the Buckingham Relay Site in Virginia, also had an underground facility, and is now out of service, and privately owned as part of a residence.

While some of these larger AT&T bunkers remain as part of AT&T’s mysterious infrastructure, some have been sold to individuals, or, more commonly, to other companies, once stripped of their now obsolete telecommunication functions. One such site is the AT&T Boone Tower bunker, in the farmland north of Des Moines, Iowa, which is now being marketed as an underground data center called the Infobunker. On the surface is a microwave relay tower, built as part of AT&T’s nationwide communications system in the 1960s. The bunker here, with around 20,000 square feet, was larger than a typical relay station, as it housed equipment for the AUTOVON system, which was a military communications network that existed independently of AT&T’s civilian network. Additional security included thicker walls, more space, bigger blast doors, and spring loading for equipment rooms.

FOCUS ON THE UNDERGROUND

There are a few dozen communications bunkers across the nation that were part of this system, some of which have been sold to the public. Even what was once one of the most important AT&T facilities in the nation is now in private hands. For more than a decade, the Netcong Bunker was the principal network operations center for AT&T. It is located on a hilltop in Netcong, New Jersey, not too far from the company's later control center and headquarters in Bedminster and Basking Ridge. The Netcong center is in a 86,000 square foot, two level subterranean building, with walls of concrete more than 2 feet thick, and entirely cased in steel. Communications lines once branched out from here all over the land, and through microwave links in the tower. The facility included accommodations and supplies for the 30 people who operated the center to live underground for up to three weeks.

Vital Records Incorporated purchased this facility from AT&T in 1995, and calls it the Roxbury Vault. The company has a smaller underground vault in Flagstown, purchased from AT&T in 1980. Though it operates a data center inside too, the company specializes in tape vaulting. Besides paper, microfilm, hard drives, and optical disks, another widespread form of records storage is magnetic computer tape, and some off-site underground storage locations are still referred to as tape vaults.

Governing Underground

The only entity to rival AT&T in the development of underground space is its partner throughout the Cold War, the US Government itself. Major underground military command and control centers exist underneath the Pentagon; at Raven Rock, Pennsylvania; and at Cheyenne Mountain, Colorado. At Offutt Air Force Base in Nebraska, the underground command center for Stratcom is being upgraded with a new \$1.2 billion HQ right now.

And then there is FEMA, the bunker masters, operating out of the underground motherearthship, Mount Weather, in Virginia, with somewhere around 600,000 square feet of subterranean space, and accommodations for hundreds of government officials, if not thousands, including the president. (Many of these "federal arc" sites were covered in a 2002 issue of *The Lay of the Land*, so we won't go into them any more here.)

FEMA divides the nation into ten regional districts, each of which has an Emergency Operations Center (EOC), several of which are underground. Region 10, for example, covers Oregon, Washington, Idaho, and Alaska, and is based in Seattle, and is supported by a supply base with an underground EOC in Bothell, Washington. For Region 6, covering Texas, Oklahoma, New Mexico, Louisiana, and Arkansas, the supply base and EOC is in Denton, north of Dallas, where the Denton Federal Regional Bunker opened in 1964.

At that time, the Office of Civil Defense and Mobility, FEMA's precursor agency, was planning on building major underground civil defense complexes in all eight of its regions (at Olney MD, Harvard MA, Thomasville GA, Battle Creek MI, Denver CO, Santa Rosa CA, and Everett WA). Denton was the first, and some of the others did get built, but not at this scale. It has two levels underground, with each around 25,000 square feet. Inside are communication facilities and, formerly, accommodations for up to five hundred people for 30 days. The office and reception center located above ground is still on site, and in use by FEMA.



The Federal Emergency Management Agency's regional operations center for New England is housed in this underground bunker in Maynard, outside Boston. Built in the early 1960s, when the agency was more concerned about nuclear attacks than it is now, the bunker has an operations room for organizing emergency relief teams throughout six New England states, and a variety of communications antennas on the roof of the building. CLUI photo

FEMA does not have the only network of underground emergency operations centers. Many state, county, and even city agencies across the country have built their own emergency bunkers, some with accommodations for people to stay for long periods too (though not necessarily to wait out the fallout, but to rest between shifts while managing an ongoing crisis). Though not always underground, they are often located at communication sites, and may also house services such as call centers for local police. But some of them are deeply underground, like the Massachusetts Emergency Management Agency (MEMA) EOC, which is housed in a bunker on Route 9, near Framingham. With JFK directing the nation to build fallout shelters at the beginning of the 1960s, it perhaps is no surprise that his home state was among the most responsive in this regard. Originally, and allegedly, the operation center was intended to provide shelter for up to 300 state-selected people, including the governor.

The federal continuity of government program provided go-to bunkers for the departments and representatives of the primary federal agencies. An underground bunker in Harpers Ferry, Virginia, was reportedly for the Department of the Interior, and its Secretary. The bunker has a few thousand square feet of underground space. It is located on the campus of what is now the National Park Service's national training center, and the bunker is now used by the Interpretive Design Center.

Between the end of the official Cold War, and the beginning of the official War on Terror was a moment of slack in defensive tensions, enough to even let some of the continuity of government bunkers and underground command centers find their way into the public.

The most famous of these is the Greenbrier Government Relocation Bunker, in West Virginia. Planned by the Eisenhower Administration and completed in 1961, this formerly secret underground bunker was designed to house members of Congress and their staffs during (and after) nuclear attack and is located below the Greenbrier Resort Hotel. Construction of a new hotel wing and expansion of its golf course served as cover for the bunker's construction, starting in 1958. Inside is 112,544 square feet of space, to support a maximum

FOCUS ON THE UNDERGROUND

of more than 1,000 people, with 18 dormitories, fuel storage, a cafeteria, power plant, water supply, hospital, meeting rooms, and an assembly room with a backdrop of the Capitol Building, for doing news reports. A pharmacy stocked current prescriptions for congressional members. In 1992, the bunker's cover was blown by a *Washington Post* reporter tipped by sources who saw the bunker as outdated and unrealistic. In 1995, the government ended its lease with the hotel, and now the bunker is open for tours for \$34 per person. Photography is not permitted on the tour, however. Probably more for marketing reasons than security concerns.

Also in 1992, a former underground military control center in the mountains of western Massachusetts was sold to Amherst College, and is now a book repository. This 44,000 square-foot underground bunker, called the notch, was built in 1956 as a regional control center by the Strategic Air Command (SAC), which operated a bomber base nearby in Westover. The three story building features a self-contained water supply and electrical generation system, a cavernous "war room" with a glassed-in balcony, and accommodations for up to 300 people. In 1973, as SAC centralized its command centers in Nebraska and Colorado, the Federal Reserve Bank of Boston moved in and used it as an emergency back-up facility, and for records storage, along with New England Telephone and the New York Federal Reserve.

Private Survival Bunkers

An assessment of all the underground bunkers made over the course of the Cold War has yet to be made, and might be impossible. It would include thousands of backyard bomb shelters (and storm shelters too) built for family use, and numerous apocalyptic (or pragmatic, depending on your POV) group facilities, made by secretive survivalist preppers, and religious groups, like the Scientology bunker in Trementina, New Mexico (one of three operated by Scientology's Church of Spiritual Technology), or the \$25 million shelter complex at the Royal Teton Ranch, built for a few hundred members of the Church Universal and Triumphant, near Gardiner, Montana. President Kennedy, who led the charge for individuals to go underground, had several bunkers for himself, including one he could escape to while vacationing at the Cape, now rotting away next to a baseball field on Nantucket.

Though there are thousands of backyard bomb shelters and survivalist bunkers underground left from past and future fears of nuclear attack, one of the most unusual ones is in, or rather under, Las Vegas. On the surface, it's a more or less ordinary 1970s home on a one acre lot, at 3970 Spencer Street in a residential area. This is the caretaker's house. Inside it is a staircase and elevator leading to a hollowed out cavern, whose walls are lit by a system that can create the impression of a day, night, or twilight sky. Inside the cavern's 15,000 square feet of simulated outdoor space, with fake trees and lawn, is a main house, a guest house, swimming pool, putting green, and barbecue, all underground. It was constructed by a businessman and his wife, who claimed to be able to live there for a year without surfacing. It was sold in 2013 to a group called the Society for the Preservation of Near Extinct Species.

With so much of the motivation for going underground driven by the fears of nuclear attack, we would be especially remiss to not address the small matter of the two thousand or so underground missile silos across the country (450 of which are still locked and loaded,

incidentally). Most of the 1,500 former silos and launch sites were imploded or otherwise destroyed when they were declared surplus, or obsolete. Their surface land was turned over to private citizens, usually banned from digging out the old silos, even if they could.

Not so in many other cases though, like the 72 Atlas F missile program sites from the 1960s, each with 180 foot-deep silos, as well as an underground launch control building. These are among the most favored silos for people who build them out into hardened underground homes, like the Survival Condo Project, which has two silos in Kansas, one of which is said to be sold out, with more than a dozen apartments going for more than \$1.5 million.

More on this type of underground space later. The CLUI is working on a missile silo exhibition.

What Goes Down Must Come Up

At the other end of the nuclear weapons underground spectrum from missile silos and Cold War bunkers is the other small matter of radioactive waste storage, which has resulted in two of the largest purpose-built underground facilities in the country.

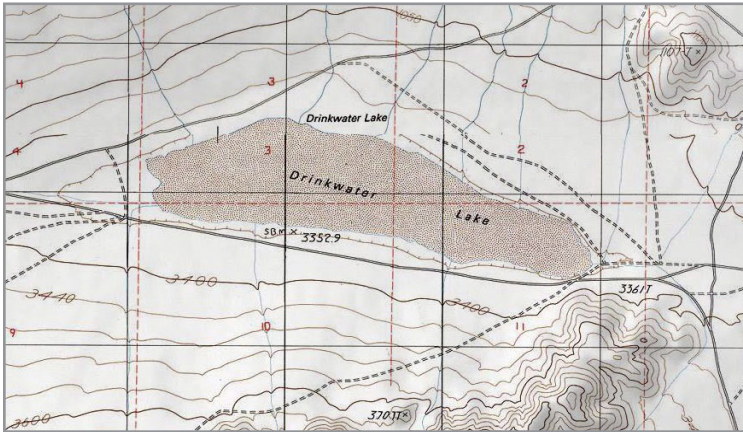
The Waste Isolation Pilot Plant (WIPP) is the first major underground nuclear waste disposal facility to be built in the United States, and so far also the only one. This Department of Energy (DOE) facility east of Carlsbad, New Mexico, is a final disposal site for government-generated radioactive waste, including material from nuclear weapons production. The underground space was constructed in the early 1980s and finally received the first load of waste in the late 1990s. Designed to be a permanent, geological tomb for the material, the facility consists of a central mile-long corridor 2,150 feet underground, off of which are other corridors, and 56 one hundred yard long chambers for waste storage. There are 30 or so support structures at the surface, in a secure zone covering over 10,000 acres. All the waste disposed of at WIPP is from other DOE and military sites, and is of the low-level and TRU (trans-uranic) variety (none of it is commercial, spent-fuel, or high-level nuclear waste—that is slated for Yucca Mountain, Nevada, or not). The waste at WIPP is comprised of mostly irradiated laboratory material, such as gloves, protective clothing, and other disposable test equipment. The repository is built in a bedded salt formation, a geologic layer of salt that is expected to slowly encroach on the waste material, surrounding it and isolating it from the atmosphere and ground water. Work on the design of a "keep out" sign for WIPP that would remain legible for 10,000 years is ongoing.

The largest and likely the most expensive underground facility in the nation is one that is still incomplete, and may never see the light of day: Yucca Mountain Radioactive Waste Repository. Located on the western edge of the Nevada Test Site, Yucca Mountain is the only site being considered as an underground repository for the nation's high-level commercial radioactive waste. So far \$12 billion has been spent to study the site and partially build the repository, including a 25 foot wide exploratory tunnel extending for five miles. In 2008, the federal government suspended work on the project, and it is currently mothballed, awaiting the political will to restart it.

But who knows. These days anything seems possible. We may be entering a protracted underground renaissance. ♦

THE DESERT

MIDDLES OF NOWHERES DRY LAKES OF THE MOJAVE



Drinkwater Dry Lake, California.

USGS map

DRY LAKES ARE PLACES IN the desert where drainage stops, and goes no further. They are landscape dead-ends. Terminals. As such they attract the things that like nothing, such as aircraft development (for their use as remote obstruction-less landing areas), off-highway vehicle recreation (driving quickly in a straight line, or in circles, because it's fun), film and advertising work, model rocket meets, and visitors from all over the world, especially from the urban and forested lands of Europe, who revel in sublime vacuity.

As non-places, many have no name, and are marked on maps as alkali flat, salt flat, sink, mudflat, wash, or playa, if at all. Or simply, generically, "dry lake." Others are well known and indelibly marked on maps, due to their size, frequent visitors, or famous functions, like El Mirage, Rogers, Frenchman, and Groom.

As part of our commitment to exploring and understanding the Mojave, the CLUI has been engaged in an ongoing research project exploring the history of uses of dry lakes. The research is based out of the Center's Desert Research Station, located near Harper Dry Lake, west of Barstow.



View down old railroad roadbed running through Silver Lake, Nevada. Dry lakes often are the path of least resistance for power lines and railways. CLUI photo

In 2016, DRS managers produced an exhibition depicting and describing the seventy dry lakes in the Mojave Desert that are recognized enough to be given names recorded on maps by the United States Geological Survey, the federal agency that manages the official naming of places in the USA. The exhibit, *Middles of Nowheres: Dry Lakes of the Mojave*, shown at the Center's Los Angeles location, depicted each lake as rendered on the USGS map. Each depiction was shown at the same scale, so the relative size of each "lake" could be measured against the others, as they range in size from less than a square mile, to more than a hundred square miles. ♦

See the online exhibit at www.clui.org/section/middles-nowheres-dry-lakes-mojave.



Roach Dry Lake, Nevada.

CLUI photo

SEVEN MAGIC MOUNTAINS A TEMPORARY ROADSIDE ATTRACTION



Selfie heaven: *Seven Magic Mountains*, with Jean Dry Lake a few miles away in the distance. CLUI photo

DRY LAKES HAVE ATTRACTED creative projects and art for decades. There is something about an empty slate that lures people to draw on it with big chalk. This subject has been covered well by writers, most thoroughly by Kim Stringfellow's ongoing online *Mojave Project* and William L. Fox, whose book *Playa Works* examines this history (guided in part by CLUI director Matthew Coolidge).

THE DESERT

A few years ago Fox, now the director of the Center for Art + Environment at the Nevada Museum of Art, began working on the idea of a new artwork at Jean Dry Lake in southern Nevada, site of Jean Tinguely's 1962 *Study for the End of the World, Part 2*, arguably the first contemporary artwork on a dry lake, and a few years later, the site of the first of Michael Heizer's *Nine Nevada Depressions*.

What the project evolved into is now on view, and will be until May 2018. It is called *Seven Magic Mountains*, and is a work by Ugo Rondinone. It consists of large limestone rocks, painted bright fluorescent colors, arranged into seven stacks, each around 30 feet tall, evoking hoodoos and rock mounds of ancient cultures, coated in the contemporary surficial sheen of the shimmering city twenty miles north, Las Vegas.

It's on a two lane highway that parallels Interstate 15, the main road between Los Angeles and Las Vegas. The piece is visible from the interstate, so passers-by heading in either direction, wondering what on earth it could be, can opt to get off at the next exit, and drive back to it within a few minutes. At the site they will find a parking lot and explanatory text, and a short walking trail to the site. On most days, there are several cars there, and families and individuals posing and taking selfies in front of this curious, extreme, and playful attraction.

Located in relation primarily to the road, and not to the dry lake bed miles away, the piece seems less like old school land art and more like roadside sculpture. Its serial outlandishness is like *Cadillac Ranch*, in Amarillo, Texas, made by the Ant Farm group in the 1970s, and adored critically and publically. Or even more like the *Tree of Utah*, Karl Momen's less universally adored sculptural tower along the interstate crossing the Bonneville Salt Flats, built in the 1980s to counter the superlatively dead white flatness of the landscape with a colorful vertical symbol of fertility and life.

Tree of Utah is better than nothing because its context is empty. It is nowhere, so, by being there, it makes us think about nothing. *Seven Magic Mountains* is not about nothing, because it is somewhere: as the plaques remind us, it is intentionally sited near this art-historically significant dry lake, and reflects, starkly, Las Vegas, down the road. It's most ardent fans and critical critics might agree on one point: that nothing is better than *Seven Magic Mountains*, and most of its many visitors would not stop at nothing. ♦



Seven Magic Depressions: The foundations for the rock stacks being prepared before installation. CLUI photo

CLUI PROGRAMS AND PROJECTS

WENDOVER REPORT

FROM THE CLUI OUTPOST IN THE BONNEVILLE BASIN



Crew gearing up for a voyage on the Great Salt Lake Exploration Platform, where for months last year the GSLEP was the sole vessel using the drying-up marina at Antelope Island. CLUI photo

WITH A FOCUS ON THE Great Salt Lake this year, researchers in residence were based out of the CLUI Complex at Wendover, Utah but spent most of their time out in the field, around the lake.

These included landscape architects Karen Lutsky and Sean Burkholder, from the University of Buffalo, School of Architecture and Planning, who made studies of the littoral and liminal zones of the Great Salt Lake, building on similar work they have done on the Great Lakes, but with a pinch or two of salt; Zach Moser, who for years has worked on a creative investigation of the shrimp industry in the Gulf of Mexico known as *Shrimp Boat Projects*, and who is investigating the brine shrimp industry of the Great Salt Lake; Michael Page, a geographer from Emory University Center for Digital Scholarship in Atlanta, who is making detailed aerial renderings of the lake's expanding shores; and Hans Baumann, an architect and artist based in Los Angeles, who is working on a study of microbialites, a form of biologic rock found in the Great Salt Lake.

Several other previous resident researchers visited the CLUI Wendover complex in 2016, including Marie Lorenz, who continues to explore the aqueous canals of the region, and Pat Kikut, from the University of Wyoming, who was part of a residence team a few years ago, but who continues to do work in the region.

Class visits included a group of History of Science graduate students and teachers from Harvard, studying "technical lands" and 11 graduate students in art, art history, and architecture from MIT on a long Landscape Experience Field Trip around the southwest.

2017 will continue with the emphasis on the phenomenology of the Great Salt Lake as an engineered product and byproduct, though the research program remains open for other projects around Wendover.

This winter saw a remarkable moment when the Lucin Cut-off, a causeway that acts as a dam separating the lake in two parts, was intentionally breached, allowing for flow between the north and south halves of the lake for the first time in decades.

CLUI PROGRAMS AND PROJECTS

The causeway, once made of wooden trestles which enabled the lake to flow underneath it, was filled in with gravel in the 1950s and 1960s, creating a dam that divided the lake in two. Though there were some openings, they were small, and ineffective.

Over the past fifty years, with less fresh water coming into it from runoff and rivers than its southern half, the north half became saltier and saltier, and drier and drier. Its levels sank a few feet lower than the southern half of the lake. The brine shrimp industry was harmed, the chemical industries were left without a source of water for their evaporation ponds, and the safe island rookeries for pelicans were now connected to the land. *Spiral Jetty* was left high and dry.

The breaching of the causeway occurred on December 1, 2016, when excavators made a small cut in the dam underneath the new bridge that supported the tracks over the anticipated channel. Water began immediately breaking down the dam, and flowing into the north half of the lake. Eventually the north half might be 1.5 feet higher, and the south half 1.5 feet lower. How long this will take and what the long term effects will be to the salinity—which is at full-saturation of salt on the north half—is unknown.

Another significant breaching and flooding event also occurred in the region over the winter, though this one was unintentional. During a period of high temperatures, rain, and snowmelt in February, the Twentyone Mile Dam, 35 miles upstream of Lucin, broke. Its contents flowed down the valley, taking out miles of state highway and railway, and flooding Montello, the only community in this remote corner of northern Nevada/Utah. The flood pushed down through Grouse Creek, and took out some more roads and railroads, north of *Sun Tunnels*, Nancy Holt's sculpture near Lucin, then fanned out on the fringe of the Bonneville Basin.

These two flood events, one intentional and one not, but both engendered by human activity, show how dynamic and vast the anthropogenic landscape is in this region—one reason why it's so interesting out here around Wendover. ♦



The south half of the lake, three feet higher than the north half, flowing through the new breach in the causeway. CLUI Photo by Hikmet Sidney Loe

CLUI SHOWS ON THE ROAD

MANY OF THE CENTER'S PROGRAMS and projects live on by circulating in various forms at thematic exhibitions around the globe. 2016 saw CLUI material in more than a dozen different exhibit contexts, large and small. Typically, a curator approaches the Center with an invitation to contribute, and we do our best to consider and suggest material that might be appropriate.

Last year, the Center produced a custom interactive touchscreen of CLUI images and text about model railroad layouts in the USA for the exhibition *Routine Pleasures*, shown at the MAK Center for Art and Architecture at the Schindler House in West Hollywood, CA. This commission helped support field research and photography for a CLUI exhibition about American railroads, currently in production.

Another custom photo screen program, this one about drone test sites, was generated for the exhibition *To See Without Being Seen*, at the Mildred Lane Kemper Art Museum, in St. Louis, MO. The CLUI also provided some material about the Great Salt Lake Exploration Platform for the exhibition *Radical Seafaring*, at the Parrish Art Museum, in Water Mill, NY.

The CLUI *Texas City Landscap* premiered at the 3rd Istanbul Design Biennial in Istanbul, Turkey. It was also shown as part of the *New Cities, Future Ruins* programming at Southern Methodist University, in Dallas, TX, and in the exhibition *L'Image Volee*, at the Prada Foundation, in Milan, Italy. That exhibition, curated by the artist Thomas Demand, also commissioned a series of photographic prints that were shown in the *Hollowed Earth* exhibit at CLUI later that year.

Other CLUI landscaps were included in the exhibit *Landschaft=Labor*, at the Carthian Museum of Modern Art in Klagenfurt, Austria, and as part of Ballroom Marfa's *Marfa Dialogues* at the Museum of Fine Arts Houston, in Houston, TX.

One of the Center's Los Alamos Rolodexes was acquired by the Victoria & Albert Museum, in London. It is now part of their permanent collection, and will be displayed at an exhibit in China later this year. Another Rolodex was shown in the exhibit *Data (after) Lives*, at the University of Pittsburgh Art Gallery, in Pittsburgh, PA. CLUI project posters were shown in the exhibit *Setting Out*, at Apexart, in New York, NY, and a series of CLUI postcards was exhibited in *Making Use: Life in Postartistic Times*, at the Museum of Modern Art, in Warsaw, Poland.

We put ourselves on display too, when we can accommodate invitations to speak at universities, museums, and other cultural venues. This year CLUI director Matthew Coolidge, or program manager Aurora Tang, spoke at places that included the KTH Royal Institute of Technology in Stockholm, Sweden; the Prefix Institute of Contemporary Art in Toronto, Canada; and Ohio State University, West Virginia University, Kansas State University in Manhattan, Kansas, and the Institute of Contemporary Art in Philadelphia. Visiting academic groups also come to the CLUI in Los Angeles, and to other CLUI venues. ♦

BOOK REVIEWS

BOOKS NEW TO THE SHELVES OF THE CLUI LIBRARY

Exploding the Phone: The Untold Story of the Teenagers and Outlaws Who Hacked Ma Bell, by Phil Lapsely, 2013

In addition to being the “largest machine on earth,” the American phone system, before it was digitized, and fractured by deregulation in the 1980s, was controlled by internally-produced sounds, and was thus the largest musical instrument on earth. People slowly learned that 2600 hertz notes, which could be generated by things like cheap plastic flutes found in Cracker Jack boxes, and other signals produced with tone generators made by electronic tinkers, could be used to take sonic excursions telephonically all over the country, and even to ring the president’s private line. Some of the pioneers of exploring the phone system—phone phreaks—became the innovators of the ensuing computer era, like Steve Jobs and Steve Wozniak, who made and sold “blue-boxes” that enabled free long distance phone calling before turning to computers. Much of the ethos and culture of creative computer hacking formed in the phone phreaking communities of the early 1960s and 1970s. This book is that history, and in so telling reveals a vivid portrait of the workings of the phone system too, one of the most opaque and critical constructions of the modern era.

Ecologies of Power: Countermapping the Logistical Landscapes & Military Geographies of the US Department of Defense, by Pierre Belanger and Alexander Arroyo, 2016

Begun as a mapping project and research seminar at Harvard’s Graduate School of Design in 2009, this ambitious overview of the “largest developer, landowner, equipment contractor, and energy consumer in the world,” the US Department of Defense, became, as it must, a hefty and graphically volatile tome, published seven years later. The book covers the orbits of beltway contractors and satellites, and domestic desert practice ranges to global prepositional nodes, quantifying the massive infrastructure, not of war itself, but the logistics of preparedness: how everything—food, housing, weapons, planes, ships, soldiers—have to move all over the place, leading to the stunning circuitous fact that that the DoD, the largest institutional consumer of fossil fuels in the world, uses most of it just to move fuel.

The New Explorers: Making Meaning in the 21st Century American Landscape, by Kris Timkin, 2015

“This book offers a compelling selection of some innovative creative interpreters of the American land. Through their endeavors, these inspired artists help widen the spectrum of perceptual possibilities. They evoke the charisma and courage of the original explorers of the new nation, but probe instead into the world that we made, collectively—a constructed landscape whose complexities and mysteries are as rich and varied as its inhabitants.” That’s what we said for a promotional blurb that ended up on the back cover of the book—which talks about several contemporary artists, several of whom we have had the pleasure of working with—and we stand by it!

Big Science: Ernest Lawrence and the Invention that Launched the Military Industrial Complex, by Michael Hiltzik, 2015

Nice readable story of this wizard of physics, fundraising, and politics who more than anyone else fused and fused the atomic era. Focuses on the technology, as it should, and how he took the cyclotron from a hand-held flask to a building sized machine that smashed atoms and revealed new elements, and begat another of the “largest machines on earth,” the enrichment plant at Oak Ridge, which fueled the atomic bomb. Lawrence was perhaps the most influential scientist of the modern era, and the reason the Manhattan Project existed. His work lives on at Berkeley, Los Alamos, and at the Lawrence Livermore National Laboratory, where the hydrogen bomb was developed, and in other places where it seems we need bigger and bigger machines in order to see smaller and smaller things.

Networks of New York: An Illustrated Field Guide to Urban Internet Infrastructure, by Ingrid Burrington, 2016

A handy, almost-pocket-sized book that depicts and describes the wide variety of indigenous and exotic telefauna that abounds and thrives in the multi-spectral terrainium of New York City.

The Man who Found Thoreau: Roland W. Robbins and the Rise of Historical Archeology in America, by Donald W. Linebaugh, 2005

The self-taught are often the passionate pioneers of new fields of endeavor, but their efforts sometimes end up being occluded when the professionals and academics move in. Such is the case of Roland Robbins, who located not only Thoreau’s Walden Pond cabin site and remains, but who went on to locate and exhume the Saugus Iron Works, Thomas Jefferson’s birthplace, and dozens of other historic sites in the northeast. Starting in 1945, he invented the basic tools of site surveys and excavations that were late in coming to non-native, historic archeology in the USA, though many who came after considered his methods crude and destructive. But as we know, it is often the amateurs who are the real professionals.

Shooting Space: Architecture in Contemporary Photography, by Elias Redstone, 2014

Big Phaidon book about what the title says, put together by former curators at the Barbican, Architecture Foundation, Photographers Gallery, and the curator for contemporary architecture at MoMA, features the work of 51 photographers, including Baan, Burtynsky, Gursky, Leibovitz, Opie, Ruff, Struth, Sugimoto, Tillmans, Welling, and one non-human photographer, the CLUI, doing its part to hold up the institutional minority.

Revolving Architecture: A History of Buildings that Rotate, Swivel, and Pivot, by Chad Randi, 2008

This look around the world of rotating structures is a missing link of architectural literature that nobody knew was missing till we found it, and another winning title from Princeton Architectural Press.

New Jersey as Non-Site, by Kelley Baum, 2013

In the old days, New York artists headed up the Hudson to pursue the romance of landscape portraiture, or to Long Island to work out more abstract and subjective interpretations of the natural world. By the time of the post World War Two and postindustrial era, New York City artists headed to the nearest landscape left in the overbuilt region—New Jersey, a land of relative freedom and mystery. This book is about artistic researchers and explorers in this terrain from the 1950s to 1975, by which time the state had become the ground zero for Robert Smithson’s dialectic of site/non-site. Interestingly, New Jersey was actually the *site* in this dialectic—the non-site was the representational, and commodifiable, object in the galleries of the New York City art world.

The American Country Club: Its Origins and Development, by James M. Mayo, 1998

American city clubs, based on the British model, were favored especially by wealthy financial professionals. In a way, the development of sporting clubs in the suburbs in the late 19th century were an extension of these urban clubs, though they were more inclusive—sometimes even allowing women and family members to engage in leisurely outdoor activities, such as fox hunting and golf. Though somewhat more democratic than their precursors, the country clubs of today essentially serve the same function, to provide an environment of leisure and sport for the exclusive use of their exclusive membership. This book is a history of these clubs, and thus a history of the powerful elite, and about the spread of this form of community space across the nation, with some interesting regional variations.

Where the Presidents Were Born: The History and Preservation of the Presidential Birthplaces, by Louis L. Picone, 2012**The President is Dead! The Extraordinary Stories of the Presidential Deaths, Final Days, Burials, and Beyond**, by Louis L. Picone, 2016

More than you ever wanted to know about the beginnings and ends of the lives of the presidents of the USA #1 - 44. These encyclopedic and site-based tomes are resplendent with managed piles of sifted presidential research compiled by the author.

CLUI Corps: Matthew Coolidge, Sarah Simons, Aurora Tang, Ben Loesch, George Budd, Steve Badgett, Tellef Tellefson, Steve Rowell, Igor Vamos.
Newsletter Editors: Matthew Coolidge, Sarah Simons, Aurora Tang.



Stone Mountain, Georgia

CLUI photo



THE CENTER FOR LAND USE INTERPRETATION
9331 Venice Blvd.
Culver City, CA 90232
www.clui.org clui@clui.org