“Interpretation is a seed, not a tree.” - from the Interpretive Development Program, National Park Service

The Lay of the Land
The Center for Land Use Interpretation

IN THIS ISSUE

THROUGH THE GRAPEVINE EXHIBIT.......................... 1
STATE IN FOCUS: VERMONT................................. 1
CENTERS OF THE U.S.A........................................ 2
CLUI REGIONAL FACILITIES REPORTS.................... 3
CLUI ARCHIVE INITIATIVES.................................... 5
SITE REPORT: CAPE CANAVERAL............................. 6
OVER THE SIERRAS............................................... 20
CLUI EXHIBITS AND PROGRAMS.............................. 21
THROUGH THE GRAPEVINE BUS TOUR..................... 25
UNUSUAL REAL ESTATE LISTING #24213............... 33
BOOK REVIEWS.................................................. 34

THROUGH THE GRAPEVINE
SOUTHERN CALIFORNIA’S GREAT MOUNTAIN PASS

CALIFORNIA’S RIDGE ROUTE WAS THE subject of an exhibit at the Center’s Los Angeles space in the latter half of 2010. The exhibit, Through the Grapevine: Streams of Transit in Southern California’s Great Pass featured digital display panels describing different aspects of this landscape of transition. Also on view was a landscale of the region, a continuous shot of the landscape between the edge of Los Angeles’ sprawl and the beginning of the rural valley at the base of the Grapevine, shot by the CLUI and Ron Chapple of Aerial Filmworks from a helicopter with a gyrostabilized high definition camera.

DIGGING VERMONT
WHAT LIES BELOW THE GREEN MOUNTAIN STATE

VERMONT MAY BE THE MOST uniformly scenic and pastorally idyllic state in the union. Perhaps many imagine Vermont as rolling hills with rushing brooks and snowy glens, peppered with whitewashed villages populated by DIY Yankees, back-to-the-land localists, and red barns full of fat happy cows making Ben and Jerry’s ice cream. As if it was designed by Olmstead, and inhabited by bread and puppeteers. While this is at least partially true, it is only part of the story. This most green state has a grey core.

With a small population (625,000 people, only Wyoming has less), and no urban space to speak of (Burlington, population less than 40,000, is the smallest largest city of any state in the union), Vermont has the lowest Gross State Product in the country. The largest component of the economy is government, not surprising for a state with prominent “democratic socialists” like Bernie Sanders, and better than average services for the poor.

The second largest component of the state’s economy is real estate, much of it from rents and leases for seasonal occupants. 15% of the homes in the state are occupied seasonally or recreationally. In some towns, like Ludlow, Stowe, and Manchester, as much as ¾ of the houses are second homes owned by people from out of state. Only Maine has a higher seasonal dwelling percentage (and, curiously, Maine is the only state with a higher white person count than Vermont, 98%).

Yes, Vermont makes more maple syrup than anyone (a million gallons per year, and rising), but many of the state’s other industries are similarly monolithic, and singular. One high-tech plant near
THE CENTERS OF THE USA

An exhibit produced by the Institute of Marking and Measuring and the CLUI, opened to visitors on August 14, 2010. The exhibit is inside a CLUI Unit temporarily installed at the center of the contiguous United States, north of Lebanon, Kansas, and it depicts and describes several of the “Centers” of the nation, such as the geodetic center, in Lucas, Kansas and the geographic center, near Belle Fourche, South Dakota.

The Centers of the USA is available for viewing by the public 24/7. A phone number on the door tells people where to call to get the access code for the keypad lock on the door, a technique used at several other exhibit facilities operated by the CLUI. The trailer, which has also been enjoyed as a shelter by members of the local highway department, has been visited by hundreds of people passing through over the last six months. Though the site is in a sense a historic relic, as it is the center just of the 48 contiguous states, it is a popular spot for people trying to get to the heart of things.

The exhibit will be moving soon to provide interpretive scope at other Centers. It’s next stop is expected to be the new Population Center of the USA, near Plato, Missouri. Every ten years a new population center of the country is determined by geographers at the Federal Census Bureau, using data from the latest recently completed national census. Announced just a few weeks ago, this new center has been located at a point that is half a mile southwest of the town of Plato. A Platonic center indeed!

The official Center of Population for the USA is determined mathematically as the place where an imaginary, flat, weightless and rigid map of the United States would balance perfectly if all the 310,570,000 or so residents counted in the 2010 census were of identical weight. The previous official population center of the USA, based on the results of the 2000 US Census, is 2.8 miles east of Edgar Springs, Missouri. It moved 35 miles west-southwest from a point near Steelville, Missouri (its position determined by the 1990 census). The new Population Center, near Plato, is 25 miles southwest of Edgar Springs, reflecting the general migration of population from the wintry urban northeast to the sunbelt of the Southwest. Currently the federal government is working with local representatives at Plato to determine a location for a monument to mark the new center in a place that is accessible to the public. Meanwhile, the CLUI is working on looking for a spot nearby to place its exhibit trailer.

CLUI Houston

A NEW KIND OF INTERPRETIVE research platform has been deployed at the CLUI Gulf States Field Office in Houston. Constructed over the last year by Sim parch, with the support of the Mitchell Center for the Arts, the Buffalo Bayou Partnership, and the Center for Land Use Interpretation’s Inland Waterways Initiative, the vessel is a floating workstation designed to support the production and presentation of creative interpretive projects on the nation’s inland waterways.

Built on an aluminum pontoon base, the boat is named TexHex, due to its Texas origins and the hexagonal shape that recurs in its form and concept, referencing such things as Fullerian polygons, coastal fortifications, and petrochemical molecules. The boat connects to a modular polygonal raft structure that can be moved and reconfigured, like a small floating island, and a transition between ship and shore.

TexHex will be used as a live-aboard structure, to develop and refine self-contained and energy efficient living systems, including solar power and water treatment technologies. It will also be possible to use the platform to produce and display audio/visual programs related to research about the environment (such as the Buffalo Bayou, where the vessel is currently based). An integrated folding screen and projection system enables recorded and live video content to be viewed while the boat is stationary or in motion.

In 2008, while the CLUI was in residence with the Mitchell Center for the Arts at the University of Houston, the CLUI and Sim parch started on the design of the boat. Sim parch is a build-design group that works in the margins between art and architecture. For the past ten years, Sim parch has been operating a sustainable living research facility supporting the CLUI Residence Program at a former bombing range on the salt flats of Utah. The TexHex project brings some of these notions and capabilities to an industrial aquatic environment.

The CLUI Houston exhibit area is now open to visitors during the day. Information on getting to the Field Office, and into the exhibits, is on our website, www.clui.org.

This project is part of the CLUI Lines of Site thematic program, an ongoing series of presentations about surveying, cartographic lines, perimeters, and borders. It was made possible with the support of the Salina Art Center, Creative Capital, the Hub Club of Lebanon KS, and the Institute of Marking and Measuring (IMAM).
The Desert Research Station
The Center’s Mojave desert outpost experienced a year of protracted stagnancy punctuated by abrupt bursts of energy and transition. Evolving observations of disintegration and decay were interrupted by invited and uninvited visitations.

The use of the Desert Research Station as an adjunct to the Wendover Residence Program continued this year, with Wendover program participant William Lamson using the local dry lake bed for his research, after the consistency and composition of the playa at Bonneville proved inadequate. The higher organic content at the DRS and Harper Lake worked well with his rolling Fresnel lens apparatus, enabling the completion of a complete, 366-foot burn arc over the course of a day. The display of the resulting project a few months later in New York prompted the New York Times to declare “Mr. Lamson can’t go back in time, but he can still go to the desert.” Indeed.

The desert regions of Los Angeles exaggerate the economic conditions that prevail in the rest of the state. This meant that last year, places, buildings, and things left alone out there for more than a few months were considered by some to be under-utilized. No doubt, in the minds of many, a higher and better use could be imagined, and found for items at a remote research station. Over the winter, everything that was potentially valuable at the DRS was removed by persons unknown to us, including a vintage travel trailer, garage door opener, stove, refrigerator, and the nonfunctional CLUI van. Even the old hot water heater left the building. Tire tracks and cut barbed wire indicated that they came in or out by the back gate, obscured from the road by the building and tall fence. “It’s likely these back-engineers took their time,” said DRS program manager Erik Knutzen, “looks like they might have stayed a while, fixed the van, loaded it up with all the appliances, hooked up the trailer, and drove out. The deep ruts and wood scattered around by the gate says they got stuck in the sand outside the gate while leaving with all the stuff too – that must have been a bit scary for them!”

It’s the law of the high-impact desert: Use it or Lose it. The value of material was actually pretty minimal, and was replaced with more energy efficient models that will probably save us money in the long run. A new warning system from Hi-Desert Alarm now protects the site.

CLUI Albuquerque
The storm water drainage system of Albuquerque was the subject of a display in the Center’s New Mexico Exhibit Unit. Urban Pave-ment: Navigating Storm Water through Albuquerque featured image and text panels put together by students from Albuquerque Academy, led by their teacher Louis Schalk.

The Albuquerque Metropolitan Arroyo Flood Control Authority (AMAFCA) was established in 1963 to coordinate the surface runoff from rains that would often damage the growing, and increasingly paved, city. Today the agency operates as the backbone of a multi-agency group, controlling 69 miles of channels, 9 miles of underground facilities, and 7 miles of dikes and diversion structures, as well as storm drains, drainage ponds, dams, and pump stations. This vast network concentrates the dramatic flow of seasonal storms into a watery highway system that removes water from the city as quickly and nondestructively as possible.

The exhibit provides an overview of the system with maps and images, and goes into details such as the last chance ladders located strategically to provide egress for people that might get washed into the system, before facing the baffle chutes – large, staggered concrete teeth designed to catch debris and slow water in the main channels.

Also discussed are recreational uses of the system, such as frisbee golf, hang gliding, dog parks, and other ephemeral activities allowed to occur in sacrificial flood basins, and the usually unsanctioned skateboarding that goes on inside the large spans of empty concrete channels. The exhibit also examined the pollution issues that result from concentrating the runoff of the city, especially bad during the first flush of the rainy season in the spring, where waste accumulated over the dry months of the fall and winter are swept up into a trash slurry and delivered to the Rio Grande.

This was the second excellent exhibit produced by Schalk’s AP-2D Design class for the CLUI display space in New Mexico. The exhibit was shown from October 23, 2010 to January 28, 2011, at the CLUI New Mexico Exhibit Unit, located at the end of Los Picaros Road, in the valley of the Tijeras Arroyo, between the Airport and Mesa Del Sol. The exhibit was visitable 24/7 via the Center’s site access telephone network.
Now on display is the work of 2010 resident William Lamson, entitled *A Work in Slow Descent*, which involved covering the windows of the exhibit hall in caramel. Lamson’s work at Wendover, and at the Center’s Desert Research Station in Hinkley, California, involved observational research into the transformation of materials through the application of solar radiation.

Lucy Raven’s film *China Town*, conceived and partially executed while in residence at CLUI Wendover, remains on display, visitable year around in a self-serve theater in Exhibit Hall 2.

Several former residents returned in 2010 to do more work, including the writer Ginger Strand, photographer Joni Sternbach, landscape architect/theorist/researcher Sarah Cowles, Smudge Studio, and artist/photographer Neal White.
OVER THE PAST FIFTEEN YEARS we have accumulated over 100,000 images of places and phenomena related to the American landscape. These photographs form the core of our programming here at the CLUI, and represent a distinct portrait of the nation in these times. Keeping up with the preservation, management, and distribution of these images has often been a challenge. A new initiative, the Morgan Cowles Archive, established over the last year and officially launched on December 20, 2010, has enabled us to put this effort on the front burner, to acquire better storage software and hardware, and to spend more time getting images cleaned up, organized, and out there, where they belong.

The Morgan Cowles Archive was created with an endowment established by the family and friends of Morgan John Cowles, in his memory. Morgan died in an avalanche while skiing in the Sierras in January, 2008, at the age of 39. He was a librarian, traveler, and adventurer, who worked as a map and photo archivist at the University of California-Santa Barbara’s Davidson Library. Though unknown to us, he was a follower of the programs at the CLUI, and had visited our exhibits in Los Angeles. Members of his family first approached the Center with the idea of establishing an endowed archive in his name in late 2008. The archive project has been in development since that time.

The endowment enables the Center to preserve and present the image resources of the organization for current and future generations. The commitment of the Cowles family to support this task is an unexpected honor, and one that we take seriously. It has forced us, happily, and in our best interest, to imagine and prepare for the future in ways that organizations immersed in the present sometimes fail to do. The Morgan Cowles Archive is a physical thing, an electronic storage system and a website portal, but it is also the connective tissue that bridges a gap, connecting the didactic physicality of our land use database to the public realm in a new way, and in a way that highlights the value of imagery. Web pages describing the Archive are now on the CLUI website. More images are being added to it, and a thematic search engine will become the main portal into the archive in the future.

ON APRIL 13, 2010, THE Nevada Museum of Art’s Center for Art+Environment (CA+E) publically announced its acquisition of the complete and ongoing records of the Wendover Residency Program run by the CLUI. The archive represents more than 15 years of creative production supported and encouraged by the CLUI, and executed by over a hundred individuals and groups that have been official participants in the program, based out of our facilities in Wendover, Utah.

“This acquisition is a significant addition to the current CA+E Archive collection,” commented William L. Fox, Director of the Center for Art+Environment. “The CA+E is designed to be a global leader in studying how people construct creative responses to natural, built, and virtual environments and aims to collect notable archives from across the globe. The CLUI archive provides a core sample of the working practices of artists engaged at the intersections of art and geography, art and environment, and desert regions. The Museum is thrilled to have developed such a relationship and will continue to collect the archives and create an exhibition and possible publication from them.”

The announcement of the acquisition was made at the recent CA+E Advisors meeting held in Reno, Nevada and organized to develop the planning and programming for the second Art+Environment Conference, taking place September 30 through October 2, 2011.

“We are very pleased that the material from our Residence Program will be part of the CA+E Archive collection,” said Matthew Coolidge, Director of CLUI. “The CA+E Archives are emerging as an innovative and pioneering accretion of materials about art and landscape that will be a great resource to researchers of the future. We are honored to have our program be considered among the other important materials archived by the CA+E.”

The CLUI Wendover archive capped the first year of archive collecting by the CA+E, which in 2009 acquired twenty other archives from six continents. The CA+E Archive now includes materials relating to projects by more than 200 artists, including Michael Heizer, Walter De Maria, and Lita Albuquerque.

In April, the Center delivered several boxes of material covering the first ten years of the program (1996/-7-2007), including documentation of work, samples, and ephemera. This April another batch of material covering the 2008 season will be sent to the archives in Reno, and every year thereafter another year’s records will be delivered.

“Since its an ongoing program, we actually need to hold on to things that may still be current and useful before sending them to the archive,” said Sarah Simons, Wendover Residency Program Manager. “This relationship [with an archive] really helps us keep a perspective on things, and will help the participants in the program find a wider audience in an established art museum.” Some Wendover resident’s work has already been featured at the museum, and more is on its way.
CAPE CANAVERAL IS THE NATION’S main door into space, and a place of extreme contrasts. NASA’s visitor complex, privately designed, built, and managed, draws 1.5 million visitors a year, with rides, omnimaxes, and cavernous display halls, suiting an attraction that is an hour down the road from Disneyworld. Most of the Cape, though, is a vast restricted military area, where the nation’s most sophisticated and secretive satellites are delivered into orbit.

With the end of NASA’s Space Shuttle coming this year, the Cape furthers its transition into a federally subsidized privatized space portal. At this point of transition for the Cape, it seems a fitting time to look into it – both sides of it: the privately funded public side, and the publically funded, but more private side.

A Complex Launch Complex Complex

Side One: The Limited-Access Part

The Cape’s importance to the world’s history of space flight is rivaled only by the Baikonur Cosmodrome in Kazakhstan.* More than 500 launches into orbit, or beyond, have been launched from the pads at Canaveral and the Kennedy Space Center, including all of the US’s manned space program flights, and 3,000 or more suborbital launches have taken place from its shores. The forty or so launch complexes at the Cape (called SLCs or “slicks” or even more simply LCs) line the shore of central Florida like an eighteen-mile long hemispheric coastal battery aimed at the sky. Of these, most are relics; a few have been converted to other uses; and seven or so are currently actively used in orbital launches.

NASA’s Kennedy Space Center has two launch pads, and they are the largest on the Cape: 39A, and 39B. 39A is the current space shuttle pad, and the site for the future Ares V program, NASA’s conventional rocket follow-up to the shuttle, due sometime after 2019. This is also the pad used for all the manned launches where astronauts landed on the moon. Next to it, 39B is similar, and has also been used by the shuttle and the manned space program, until it was deactivated in 2009. All the other launch sites, active and historic, are on the grounds of the adjacent Cape Canaveral Air Force Station, with around 7,000 workers, and limited public access.

Launch complexes in this area were used for the manned and unmanned space missions of the Mercury Program (LC 5) and its associated rockets, the Jupiter and Redstone (LC 6, 26). Launch Complex 26 has been saved as a historic site, and a number of rockets are set up outside on the launch pad in a static display. The Air Force Missile and Space Museum operates the site, which is publicly visitable on special tours through the Kennedy Space Center. Many other historic structures at Cape Canaveral have been torn down, most recently, the Mission Control building for the Mercury

* It should be noted that the Russians have had more than twice as many successful orbital launches as the US, with over a thousand launches each at Kazakhstan’s Baikonur Cosmodrome, and from the Plesetsk Cosmodrome, 500 miles north of Moscow.
though it resembles a rocket, and is managed by the Air Force, the old iron lighthouse has been at this location since 1894, after it was hauled a mile inland from its previous location, which was being undermined by shoreline erosion. The lighthouse marks the bulge near the tip of Cape Canaveral, the most pronounced protrusion on the Atlantic Ocean side of Florida, and thus the reason for the establishment of the rocket proving ground here, starting in 1949. So long as they were headed eastward, even slightly, or aloft long enough to be carried by the prevailing wind, the rockets could only fall into the ocean, and not over land (unless, of course, they went into orbit, or happened to hit Bermuda).

Near the tip of the Cape are LC 46 and LC 36, both currently dormant, but may be active again soon. LC 46, the furthest east launch site on the Cape, located east even of the lighthouse, is a former Trident II rocket launch pad used in the late 1980s. After that it was used to develop Lockheed’s Athena rockets, in the late 1990s, and was transferred from the Air Force to become part of the new state-managed Spaceport Florida. LC 36 was used for Atlas launches from 1962 to 2005, with a total of 145 launches from two pads, A and B. The two umbilical towers were demolished in 2006, and the LC has also been transferred to Spaceport Florida.

Spaceport Florida is an initiative to develop more uses for launch facilities at the Cape, many of which are now laying idle after the heydays of the Apollo program and the Cold War. Spaceport Florida is managed by Space Florida, a state agency created to stimulate and diversify aerospace related economic activity in the region. The program, despite being on the National Register of Historic Places, was demolished in the summer of 2010. This museum, run mostly by retirees and volunteers, is a critical and authentic on-site gathering of artifacts telling the physical history of the development of rocketry at the Cape.

The old launch complexes are more uniform in size and shape north of the Cape. One after the other, the adjacent LC 11, 12, 13, 14, 15, 16, 19, 20, are referred to as ICBM Row, as they were used to develop Titans, Pershing, Thor, Delta, Atlas, and other intercontinental ballistic missiles. Some of them have been used for other things as well, such as LC 14, which was used for all four of the manned Mercury/Atlas launches (the first U.S. program that put astronauts in orbit, starting with John Glenn, in 1962.) The blockhouse at LC 14 has been restored voluntarily by site contractors including Johnson Controls, Brown and Root, General Dynamics, Lockheed, and Boeing, into a sort of conference center for special gatherings. Several memorials and plaques have been installed at the entrance of the access road, including a time capsule that will be opened in 2464, 500 years after the end of the Mercury Program.

LC 34 is a larger complex north of ICBM Row, now abandoned, with much of the site dismantled. This is where six of the first seven of the Apollo missions were launched, including the first manned flight in the program, Apollo 7. After that, Apollo 8 through 17 were launched from the new NASA Launch Operations Center at the Kennedy Space Center’s LC 39.

Known to the world, and defining the age, the Apollo Program was the most glorious period for the Cape. It started in 1961 after Kennedy’s declaration to go to the moon before the end of the decade, and ended with Apollo 17, in 1972, when, by the time of this last moonwalk, space travel had begun to appear banal to a jaded public. All we could do with the moon, it seemed, was to drive around on it in 4x4s, and play golf. Truth is the moon was visited only six times, and walked (or driven) on by a total of twelve people.

LC 37, just north of its twin, LC 34, is still in use. Like its twin it was built to support the Saturn 1 rockets, in 1963, and hosted a total of eight launches. The last launch, Apollo 5, the only official Apollo launch at the complex, was an unmanned test of the lunar module. After that the complex was dormant until it was retrofitted for launching Boeing’s Delta IV rockets in 2002. Still part of the Air Force Station, the launch complex manages launches by

Air Force officially handed over management (though not ownership) of these two facilities to Space Florida in March, 2010.
the United Launch Alliance (ULA), a company that is a shared venture by Lockheed and Boeing. ULA, headquartered near Lockheed’s Space Systems plant in Littleton, Colorado, in the southern suburbs of Denver, was established in 2006 to provide a standardized satellite launching platform for government payloads. Using three expendable rockets, Boeing’s Delta II, Delta IV, and Lockheed’s Atlas V, ULA is busy at Cape Canaveral, and at Vandenberg, the Air Force’s west coast launch facility, favored for satellites that require a polar orbit.

On November 21, 2010, ULA launched what is generally considered to be the largest spy satellite ever made, from LC 37. Though the payload was classified, experts believe the mission, known officially as NRO LR-32, was to launch a National Reconnaissance Office (NRO) satellite high above the equator (hence the east coast launch), in a geosynchronous orbit, to eavesdrop on communications. It is believed to have an antenna the size of a football field. It was launched by a “Delta IV Heavy” rocket, 23 stories tall, the largest payload capacity launch platform that the NRO has at its disposal.

There are two other active space launch complexes left to mention, both among the largest at the Cape, LC 40 and LC 41. Both were originally developed by the Air Force in the early 1960s for the Titan III, and served as busy, large-scale workhorses on the base for over 30 years, launching many of the largest and most sophisticated satellites and scientific probes of the day. In 2002, LC 41 was converted to launch Lockheed’s bigger and current Atlas V, which it continues to do, now operated as part of United Launch Alliance’s operations at the Cape (like LC 37, which is used for ULA’s Boeing Delta IV rockets.)

LC 40 was used for Titan launches up until the end of the Titan program, in 2005. The towers were demolished in 2007 and 2008, to make way for a new tenant, with a new rocket, and a new approach: the Space Exploration Company, also known as Space X. Space X was founded by, and is directed by Elon Musk, the famous entrepreneur who manages to embody the qualities of both a James Bond movie villain and James Bond. (Musk is also famous for his development of the exotic Tesla electric car). With an additional launch facility on the remote Marshall Islands of the Pacific, Space X has been developing a new space program with lighter and more efficient rockets, in contrast to his competitors, Lockheed and Boeing.

In 2005, Space X filed complaints against Boeing and Lockheed, citing violations of antitrust, unfair practices, and racketeering. The U.S. government dismissed the charges, and even allowed the two dominant aerospace companies to create a new space launching company, the United Launch Alliance. Soon afterwards though, Space X won a $1.6 billion NASA contract to develop rockets to supply the Space Station, and work began to develop a launch site for their Falcon 9 rocket at the Cape’s LC 40.

In June of 2010, the first Falcon 9 rocket was successfully launched and orbited. On December 8, 2010, the second Falcon 9 was launched, this time carrying a payload spacecraft, called the Dragon, which orbited successfully. The company seems well on its way to fulfilling the contract, a veritable David, charging at the Goliath titans of aerospace. Space X, whose founder Elon Musk was propelled to riches as a co-founder of Paypal, is not alone in this battle, of course. Other information age fueled space enterprises include Amazon’s founder Jeff Bezos’ Blue Origin Company with its New Shepherd Spacecraft, being tested and flown out of his 165,000 acre West Texas ranch, and the Scaled Composites/Virgin Galactic project in Mojave, California, whose first space flights were funded largely by Microsoft co-founder Paul Allen, and whose Spaceport America is currently under construction in New Mexico. These are perhaps the new titans of the emerging post-internet space age, who may become themselves, someday, Goliaths for Davids to slay.

Beyond LC 40 and 41 is the northern limit of the Air Force’s Cape, and the site of NASA’s shuttle launch pad at the Kennedy Space Center. The space shuttle Discovery is currently in the vehicle assembly building being readied for its final launch to deliver components to the International Space Station, sometime after February 24, 2011. After that, Space Shuttle Endeavour will take its place on the pad, and if all goes according to plan, make another delivery of components to the Space Station, and complete it’s last space shuttle mission, in April 2011. Then there may be one more flight of the third shuttle, Atlantis. What happens at the Space Center after that is still up in the air.
A Complex Visitor Complex Complex
Side Two: The Unlimited-Access Part

It seems, with efforts like Virgin Galactic, that the future of space travel, besides deploying satellites and the occasional probe, is tourism. The main motivation to go into space is perhaps "because it is there." In the meantime, before these facilities are built, for those trying to get close to the space experience, and who can't afford millions of dollars for a few minutes ride above the atmosphere, the Kennedy Space Center may be as close as you can get to space, in one direction, at least.

Like some other NASA facilities, public visitation has been integrated into the site. Since NASA's future is affected largely by the will of American tax-payers it behooves them to provide a good time for visitors, not to mention the fact that it is their duty to do so, if they really are there to serve the public's interest. At the Kennedy Space Center, the visitation infrastructure has grown to the point that it is now, itself, a destination, largely distinct from the actual function of the Space Center.

Visitors bound for Cape Canaveral are directed by road to the Kennedy Space Center Visitor Complex, the only part of the Cape that is open to the public on a drop-in basis. With processing halls and crowd management structures, where entire buildings are made to hold lines and fold crowds while they wait to enter an attraction, the experience of visiting the visitor center is what it might be like to visit a foreign planet if the Disney corporation got there first.

After parking in a vast lot, visitors approach the Ticket Plaza, with a long kiosk structure that is a pedestrian toll booth, from which collectors extract the basic admission, $41 per person. The first stop after the Ticket Plaza is an entry building called Information Central, where visitors pass through turnstiles, and into a lobby with bathrooms, breathing space, friendly space-suited greeters, and a site map that few people look at, indicating the layout of the various visitor facilities that lie beyond in the interpretive launch complex.

Through the doors to the outside is a round plaza called NASA Central, with the NASA logo on a pedestal for photo-ops, and wayfinding aids and concourses leading to the various buildings. These sites include the Astronaut Encounter building, where a real live astronaut, usually a space shuttle veteran, one of the less than 600 people who have actually been in space, presents a talk about their experience, and where visitors have the opportunity to talk to them. Across from that is the "Exploration Space: Explorers Wanted" hall, another exhibit and live theater environment where visitors are introduced to ideas of what future space travel might look like and where we might be headed in hypothetical futuristic future missions. Also on the first plaza is the main gift shop, called the Space Shop, and labeled as the "World's Largest Space Shop."

On the other side of the plaza is the Orbit Café, cafeteria style, and the Imax theater. IMAX and the space program have always seemed to go together, and the Visitor Center has two IMAX theaters showing dramatic NASA footage shot from space, as well as related promotional Hollywood movie tie-ins (like Tron: Legacy An IMAX 3D Experience®). The IMAX theaters are flanked by a Hubble Telescope display and the NASA art gallery, with changing exhibits of paintings and photographs of space, rockets, and related things. Behind the IMAX theater is a lagoon with alligators (and a sign warning visitors not to feed them as they "attack their prey with vice-like jaws, gripping their victim, then twisting until [it] is torn apart." This might be the most compelling sign in the complex).

At the west end of the Visitor Complex is the Rocket Garden, a static display of vertical rockets, arranged in a sprouting, clustered bouquet, and lit dramatically at night. Next to that is the Early Space Exploration building, off to the side and appearing to be among the least visited of the interpretive complexes. Displays inside highlight the Mercury and Gemini programs, and feature the actual Mercury mission control consoles, arranged as they were in the original control building before it was torn down in 2010. Next to it is a meeting and conference facility used for special events and memorials.

At the northeast end of the Visitor Center Complex is the Space Mirror Memorial, dedicated in 1991, and built to honor the astronauts that have lost their lives in space exploration. The memorial is on a white frame structure, faced with a 50-foot wide rectangle of black granite, where the names are inscribed, designed to look like they are being projected out into space. There are 24 names on the wall, with lots of room left for more. Next to it, the Space Shuttle Plaza has a full sized replica of the Space Shuttle Explorer, which you can go inside of to see the flight deck and the capacious cargo bay.
Across from that is the most elaborate interpretive complex at the Visitor Center, the Shuttle Launch Experience, a 44,000 square foot facility that opened in 2007, and cost $60 million to build. To experience the experience, visitors enter the Shuttle Launch Simulation Facility, a six-story structure that resembles the monolithic space shuttle facilities at Kennedy Space Center. All loose material must be removed from pockets, and stored in lockers available outside the facility. You climb up the ramp of a kind of support tower/gantry, zig-zagging many levels up, while astronauts on video monitors overhead give testimonials about what the launch experience is like.

Inside, finally, is an empty hall that fills with the next load of visitors, who look up at video screens that move around on robotic arms. A video astronaut (actually Charlie Bolden, a former astronaut and now a NASA administrator) describes the shuttle launch sequence, making sure visitors are aware of the stress levels so they can opt out (people with high blood pressure, and heart, back or neck problems are discouraged from going any further.) Amid fog, doors open, and visitors climb into the “crew module” of a stylized space shuttle bay, with rows of benches in an enclosed platform, facing a large screen. After being strapped in, doors close, and the platform moves the tourist payload to an upward angle, giving one the sense of pointing vertically up at the sky, like the shuttle on the pad. Then the countdown, the fiery blast, shaking, combined with more tilting to simulate Gs, the apogee, and a slow transition back to the horizontal. The cargo bay doors open and reveal a calm fiberoptic starry cosmos.

The largest feature of the Visitor Center is the tour bus depot, large to support the long lines that can develop while people wait for their turn to get on the bus. Reservations are highly recommended. The Visitor Center has a fleet of 40 motor coaches, circulating continuously during the day, offering three tours. One, the basic Kennedy Space Center tour, leaves every 15 minutes, and takes visitors to a 60-foot tall “Observation Gantry” overlook tower that provides a 360-degree view of the distant launch facilities.

Two other, more extensive tours are available, each lasting about 2.5 hours. One, “KSC Today and Tomorrow,” takes visitors to see the Vehicle Assembly Building, the Shuttle Landing Facility, and the A/B Camera Stop, a point of view that is the “closest possible view of the Space Shuttle Launch pads.” The other tour, “Cape Canaveral Then and Now” takes visitors onto the grounds of the Air Force Station to see some of the old launch complexes, and the Air Force Space and Missile Museum at LC 26. Photography is restricted to places where people get off the bus. Both tours make a stop at the Apollo/Saturn V Center, another visitor complex located six miles north of the main Visitor Center. This is a massive display hall, covering a Saturn V rocket, prone and distended in sections, on its side. At 363 feet in length (as tall as a 36-story building), the Saturn V is the largest rocket ever made, and is the vehicle that carried all the astronauts to the moon. On the edge of the hall are souvenir shops and other displays, including an opportunity to touch real space rock, and the Apollo Treasures Gallery, where spacesuits and hardware from the Apollo missions are presented like crown jewels inside a dimly lit display hall, entered through a faux bank vault-like door.

The tours are scheduled so that to do both the “Yesterday and Today” and the “Today and Tomorrow” tours would require a second visit on another day (perhaps yesterday, or tomorrow). They cost $21 each, on top of the admission price of $41, bringing the total for a visit to Cape Canaveral to $83.00. These expenses are due to the fact that the visitor facilities are privately designed and operated, and are intended to be self-sufficient in funding, and not to use tax-payer dollars (though presumably many of the visitors shelling out the price of admission are American tax-payers who funded the space program to begin with).

The company that operates and generates a profit from the Kennedy Space Center Visitor Complex is called Delaware North, and is one of the largest privately held companies in the country. Delaware North is a hospitality services company, managing gaming and entertainment venues, such as Indian casinos, dog tracks, sports arenas, resorts, airports, and even National Park facilities at the Grand Canyon, Yellowstone, and Yosemite.

Delaware North is similar in some respects to its main competitor, the company Xanterra, also privately held, which operates National Park System visitor facilities at the south rim of the Grand Canyon, Death Valley, Crater Lake, Mount Rushmore, Zion, and most of Yellowstone, as well as a dozen major resorts and conference centers in the country. Delaware North might be more diversified in their portfolio of landmarks, and is certainly more sports oriented: It operates the Queen Mary, Niagara Falls State Park, the massive Memphis Flea Market, a number of state fairgrounds, and does retail and concessions for more than 50 sports venues, including the new Meadowlands Stadium in New Jersey. It also manages Boston Garden, as the owner of Delaware North, Jeremy Jacobs, also owns the Boston Bruins. Jacobs’ father started the business with a popcorn stand in 1915. It now has around $2 billion in annual revenues, and Jacobs is listed as a billionaire on the Forbes list. The company motto is “Focus on what you do best, and leave the rest to us.” Indeed.

Delaware North won the visitor concessions contract at Cape Canaveral in 1995, and began making improvements there soon after. A $160 million Thematic Development Plan was announced in 2005, to take place over ten years, which included the Shuttle Launch Experience facility. With Delaware North’s contract with NASA now renewed through at least 2020, the company will preside over a period of transition at the Kennedy Space Center, with the end of the Space Shuttle program this year. No doubt the interpretive space complex will expand to fill the void.
OTHER POINTS OF DEPARTURE
THE REST OF AMERICA'S GATEWAY TO SPACE

THOUGH VERY SMALL SATELLITES CAN be deployed from rockets launched from anywhere on earth, including from ships, submarines, and aircraft, larger space assets, like surveillance and communication satellites, are generally launched from fixed, land-based launch complexes.

Delivering large payloads to space is very difficult, and costs millions of dollars per pound. It takes tremendous amounts of energy to break the confines of gravity (speeds over 15,000 mph are generally required to get objects 100 miles above the surface, into low earth orbit). And sophisticated engineering is required to do so reliably enough to carry satellites, some costing hundreds of millions of dollars to make.

Currently only a handful of companies build rockets that do this, though they represent a huge industry of R&D and suppliers. And only a few places in the USA have the capability to launch these vehicles into orbit to deliver their payload. Of these sites, four are at NASA or military bases and two are commercial or state-run. And of these, one dominates, and operates on the scale of Cape Canaveral – Vandenberg Air Force Base.

Vandenberg is the West Coast Cape, where more than 500 orbital satellite launches have taken place, about the same number as at Cape Canaveral. It is located on the north Pacific, on a bulge on the California coastline, enabling it to launch vehicles southward over the ocean without overflying land, and enabling the placement of payloads into longitudinally looping polar orbits, allowing them to scan anywhere on the earth's surface (as the earth rotates perpendicular to a polar orbit). This is the orbit favored by American intelligence organizations. Vandenberg is also used to launch government research satellites, for NASA, NOAA, and other scientific projects needing a polar orbit.

There are currently six active launch complexes at Vandenberg: SLC 2, used for Delta II rockets; SLC 3 East, used for Lockheed's Atlas V; SLC 3West, used for Space X's Falcon 1; SLC 6 for the Boeing's Delta IV; SLC 8 for the Orbital Science Corporation's Minotaur; and SLC 576 E, used for Orbital Science’s Taurus rocket.

On January 20, 2011, a Delta IV Heavy rocket lifted off at Vandenberg, the largest rocket ever launched from the West Coast. Like the Delta IV Heavy launch two months earlier at Cape Canaveral, the rocket contained a classified spy satellite for the NRO. This mission, known as NROL-49, was the first of a series of Delta IV Heavys to be launched from the newly upgraded SLC 6 at Vandenberg. Both coasts are now equipped for the largest payloads.

There are at least 5 inactive launch sites at Vandenberg, left undeveloped after platforms such as the Titan and Thor rockets were discontinued. The first polar orbiting satellite, Discoverer 1, launched on a Thor, was a precursor for the recently declassified Corona spy satellite program, based out of SLC 10. Vandenberg is also an ICBM test launching site, over the years launching Atlas, Titan, Minuteman, and Peacekeeper ICBMs over the Pacific Ocean, to be tracked by the antenna sites at Kwajalein Atoll. And Vandenberg is a current Missile Defense Site, with anti-ballistic missiles ready to launch at enemy ICBMs that might be coming over the poles, or across the Pacific.

On January 20, 2011, a Delta IV Heavy rocket lifted off at Vandenberg, the largest rocket ever launched from the West Coast. Like the Delta IV Heavy launch two months earlier at Cape Canaveral, the rocket contained a classified spy satellite for the NRO. This mission, known as NROL-49, was the first of a series of Delta IV Heavys to be launched from the newly upgraded SLC 6 at Vandenberg. Both coasts are now equipped for the largest payloads.

Currently only a handful of companies build rockets that do this, though they represent a huge industry of R&D and suppliers. And only a few places in the USA have the capability to launch these vehicles into orbit to deliver their payload. Of these sites, four are at NASA or military bases and two are commercial or state-run. And of these, one dominates, and operates on the scale of Cape Canaveral – Vandenberg Air Force Base.

Vandenberg is the West Coast Cape, where more than 500 orbital satellite launches have taken place, about the same number as at Cape Canaveral. It is located on the north Pacific, on a bulge on the California coastline, enabling it to launch vehicles southward over the ocean without overflying land, and enabling the placement of payloads into longitudinally looping polar orbits, allowing them to scan anywhere on the earth's surface (as the earth rotates perpendicular to a polar orbit). This is the orbit favored by American intelligence organizations. Vandenberg is also used to launch government research satellites, for NASA, NOAA, and other scientific projects needing a polar orbit.

There are currently six active launch complexes at Vandenberg: SLC 2, used for Delta II rockets; SLC 3 East, used for Lockheed's Atlas V; SLC 3West, used for Space X's Falcon 1; SLC 6 for the Boeing's Delta IV; SLC 8 for the Orbital Science Corporation's Minotaur; and SLC 576 E, used for Orbital Science’s Taurus rocket.

Beyond the U.S.'s main space launch complex at Cape Canaveral and its associated Kennedy Space Center (discussed earlier), there is another major East Coast rocket launch site facing the Atlantic Ocean: the Wallops Flight Facility, on the southern end of the Delmarva Peninsula, in Virginia. Much smaller than Cape Canaveral, this is a busy launch complex, though it is used mostly for suborbital and atmospheric launches, using rockets smaller than 20 feet or so in length.

Wallops has had over 14,000 launches since being established as an early NACA (later NASA) rocket site in 1945, and was used for high velocity, high altitude tests, using research rockets such as sounding rockets (to take measurements of the atmosphere). The facility has six primary launch pads and a few blockhouses, spread along coastal Seawall Road. It is operated by NASA’s Goddard Space Flight Center.

At the southern end of the Wallops Flight Facility is the Mid Atlantic Regional Spaceport (“MARS”), a state-run initiative to use some of the site for larger, orbital satellite deployments. Since its inception in 2003, there have been three successful MARS launches, using Orbital Science Corp’s Minotaur rocket to place government satellites in low earth orbit.
The Kodiak Launch Complex, on Kodiak Island in Alaska, was the first commercial spaceport in the nation to be built outside of a pre-existing federal launch site. It is operated by the Alaska Aerospace Corporation, a state-owned company. Its northern Pacific location is convenient for launching polar orbiting satellites.

Kodiak has had 14 successful launches since its first in 2001, though most of them were target rockets, launched in order to be shot down over the Pacific by other rockets, as part of the testing of national missile defense programs. Its most recent launch however, on November 19, 2010, using a Minotaur IV rocket, fielded a number of small satellites into orbit.

Sea Launch is technically not part of the United States, as it is a boat (registered in the Cayman Islands), but the American company Boeing was the lead company operating this unique venture, with Norwegian partners converting the rig, and Russian and Ukrainian companies providing the Zenit rockets. The company filed for chapter 11 bankruptcy in 2009, and was bought by its Russian partner, the rocket company Energia, which now owns 85% of the Sea Launch company. They say it will resume launching in 2011, and remain based in Long Beach, close to where many of the satellites in the USA are made.

There are a few other launch sites outside the borders of the USA which are under United States control, though they are used for rocket and missile tests, and not for satellite deployment. Foremost among these is Kwajalein Atoll, part of the remote Marshall Islands, a major hub for American military in the Pacific. The islands were captured from the Japanese in WWII, and have since served as a communication, testing, and logistics base, including for the first atomic testing program, Operation Crossroads (though no nuclear bombs have been detonated there).

The military leases eleven of the islands from the Marshallese, and facilities include tracking and telemetry stations, launch sites, and a principal satellite control earthstation for the military’s fleet of deployed satellites, including surveillance platforms and the GPS system. The atoll is part of a 750,000 square mile missile test area in the Pacific Ocean, now called the Ronald Reagan Ballistic Missile Defense Test Site. In recent years, anti-ballistic missiles have been launched from Kwajalein’s Meck Island to shoot down mock enemy missiles launched from ships, Vandenberg, and from the Kodiak Launch Complex in Alaska. Another, Omelek Island, is a launch complex for testing rockets for SpaceX, Elon Musk’s company.

Other launch sites for non-orbiting missiles include Point Mugu, part of a Navy complex near Ventura, California; Poker Flat, a state-run suborbital launch site in Alaska; Fort Greely, Alaska, the nation’s anti-ballistic missile base; and Barking Sands, a military range on Kauai, in Hawaii. Johnston Atoll, one of the Pacific’s loneliest islands, has been used to launch rockets into space for the atomic testing program, but is no longer. Then, of course, there are the 450 Minuteman III ICBMs still at the ready in 450 silos (principally in North Dakota, Montana, and Nebraska), and the 14 Ohio class submarines that can launch our 350 Trident ICBMs.
Burlington, for example, IBM’s Essex Junction facility, provides 25% of all manufacturing jobs in the state. And though Vermont is one of only two states in the union without a coal-fired power plant, that is because nearly 75% of the electricity produced in the state comes from one place: Vermont Yankee, a nuclear power plant in Vernon.

Such contrasts continue beneath the surface of the Green Mountain State as well. For amidst the verdant hills and dales are some of the most dramatic and superlative excavations in the country. Vermont is a place that people dig, in all kinds of ways.

**Vermont Is/Is Not the Granite State**

The largest granite quarries in the world, they say, and possibly in fact (as it all depends on how you measure them), are in Vermont, around the town of Graniteville, south of Barre. Granite has been quarried here since the 1820s (the nearby state capitol was built with rock from here), but it took the railway, coming later in the century, to provide a way for this high grade material to get to markets elsewhere in any quantity (granite is hard and heavy – a one-foot cube weighs 170 pounds).

Vermont’s Rock of Ages is the largest supplier of granite tombstones in the country. CLU1 photo

The Rock of Ages company now owns most of the operating quarries in the district. It was already an agglomeration of several companies when it took its name, Rock of Ages, from the religious hymn in 1925. The company continued to expand, acquiring other local companies and quarries, as well as quarries located in New Hampshire, Quebec, and Georgia. Rock of Ages now has over 40 quarries, and is the largest supplier of granite memorials (tombstones) in the country. It also provides cut stone blocks for use in building construction all over the world, including stone for Mormon Temples in Salt Lake City, the steps of the U.S. Capitol, hotels in Abu Dubai, and business towers in Hong Kong.

The grey granite of the Graniteville quarries is still widely popular, especially for cemetery memorials, and that is the main business of Barre. Several companies are at work shaving and engraving tombstones in the region, rock usually bought from Rock of Ages. Rock of Ages itself has a 200,000 square-foot rock processing mill in Barre, one of the largest in the world, where they cut blocks into slabs and shape granite into nearly any form imaginable. One famous custom gravestone, ordered for a teenager’s grave in Linden, New Jersey, was in the shape of a full size 1982 Mercedes Benz limousine. It weighed 32 tons.

The quarries themselves are unusually dramatic and picturesque. The “largest and deepest dimension granite quarry in the world,” the Upper E. L. Smith Quarry, can be visited on tours leaving from the Rock of Ages visitor center in Graniteville. Like a building negative, the squared, vertical sides are on a scale of landscape, and stagger the viewer. These quarries have been well documented by photographers, perhaps most dramatically by Edward Burtynsky, who came here in 1991, taking photos which launched his career.

In 1984, Rock of Ages was acquired by Swenson Granite, a family-run company that has operated quarries in New Hampshire for over 100 years, including its flagship quarry, a mountaintop pit still operating north of that state’s capitol, Concord. Though New Hampshire is officially called the “Granite State,” the material has not been quarried to the extent that it is today in Vermont. New Hampshire’s granite remains in place, for the most part.

**A Carrara Inside Dorset Mountain**

The big excavation story for Vermont, though, is not granite, it is marble. Marble is the only other stone cut dimensionally (as opposed to in gravel or granular form) out of holes in the state (sandstone has been quarried in the state in small amounts, though no quarries for that material are active at the moment). In the early 1900s, when marble was still a major building material, the Vermont Marble Company dominated the trade, and was one of the largest companies in the nation. Its legacy can be found in scenic abandoned and flooded quarries, mostly around the central southern part of the state. Only a few marble quarries are still active, and one in particular stands out, even though you can’t easily see it: Danby.

The principal opening is the same one that has been in use for over 100 years, and leads to the main shop area, where blocks are cut and sliced into slabs, polished, then trucked out. CLU1 photo

Located inside Dorset Mountain, the Danby Quarry is the largest underground marble quarry in the world. Its ceilings are 60-feet high and the primary excavation is a mile in length, plunging gently downward as it follows the buried bed of marble deeper under the mountain. Over the past century, a 25-acre chamber has been excavated, with a colonnade of thick pillars holding up the roof.
The large quarry cavity is known as the Imperial Quarry, and is the source of the company’s most popular marble. A second level, the Brook Quarry, is also active. A third level, the New Imperial Quarry, started in 2006, is located immediately above the old excavation, and apparently there is enough quality marble in this bed to follow the old bed for a mile into the mountain too. Danby has supplied stone to federal buildings in Washington DC, and to many prestigious contemporary architectural projects, including the UN Building in New York, the Knowlton School of Architecture at Ohio State University, and the new additions for the Montreal Museum of Fine Art, the Art Institute of Detroit, and the Museum of Modern Art in New York.

Danby is a major supplier of marble for the Federal Government, such as for the Jefferson Memorial, and the tombstones of Arlington Cemetery. These freshly cut slabs are destined for ten new bathrooms in the Supreme Court (the tenth must tip the scales of justice!).

The work is done by a staff of less than 30 people, local Vermonters, including a couple of veteran Italian quarrymen. The company that operates the site, the Vermont Quarries Corporation, is owned by the largest stone company in the world, Italy’s R.E.D. Graniti, with roots in Carrara, the legendary source of Italian marble for hundreds of years. The major equipment in the quarry is Italian, much of it unique and superlative for its type, and at times repairmen have to be flown in from Italy to work on it.

Most marble, and other dimension stone for that matter, is excavated in pits, not underground, which makes Danby unusual. The other two or three active dimensional marble quarries in the state are minute in comparison to Danby, and are open pits. In the old days, there were other underground operations in Vermont, as the excavations followed the marble beds which trended diagonally downward, following the contorted geologic fluctuations of the rock strata. Sometimes the strata was nearly vertical, other times close to horizontal, as at Danby. These quarries, long abandoned, are now flooded by groundwater.

Danby is the "world's largest marble exhibit," at the Vermont Marble Museum in Proctor.

The “world's largest marble exhibit,” at the Vermont Marble Museum in Proctor. CLUI photo

The legacy of the marble industry in Vermont can be seen at a number of interesting places. The Carving Studio and Sculpture Center in West Rutland is an active art production site, located at a large, long-shuttered Vermont Marble production plant. Most of the buildings are leased to other companies, but the Carving Studio occupies a few of the more picturesque old ones, and installs artworks amidst the ruins of the old bridge crane and in and around the outbuildings and flooded quarries that dot the area.

The Vermont Marble Company’s headquarters was in Proctor, a town renamed in 1884 after the founder of the company, Col. Redfield Proctor. He expanded the existing marble operation there, recognizing its potential, due to its proximity to the quarries, railroads, and to the Sutherland Falls along Otter Creek, one of the largest water drops in the state, which were harnessed for power to drive the saws and mill. The company eventually employed thousands of people, and acquired rights to all the marble deposits in Vermont, Colorado, Tennessee, and Alaska, and dominated the nation’s marble production.

The town of Proctor today produces no marble, and though inhabited, is a bit of a marble ghost town. Several unusual-looking marble-faced structures include the school, the firehouse, company administration buildings, and the bridge over Otter Creek. Part of the long marble production plant has been turned into the Vermont Marble Museum, said to be the largest marble museum in the world. The museum rambles in the rustic shed building, through the former showrooms for the marble company, where kitchens, bathrooms, and other displays made as far back as the 1930s provide a refreshingly authentic view of the industry. Outside, barely visible, the Sutherland Falls quarries plunge diagonally a couple of hundred feet downward, underneath the building, flooded for eternity.

Many of the fanciest buildings in Proctor, the quarries, and other scattered assets of the former Vermont Marble Company, including the Danby Quarry (which is leased to the Vermont Quarry Company), are now owned by a company called OMYA. OMYA dominates marble in Vermont, but in a different way than its predecessor – in a manner that is more industrialized, and global.

Rather than extract dimension marble, OMYA grinds up the rock deposits to extract the calcium carbonate that marble is composed of. This material is trucked from the quarries to a plant for processing, then it is shipped by the company’s fleet of rail cars (OMYA is the largest user of freight rail in the state) to other plants and customers around the nation.
Calcium carbonate is a widespread material, making up 4% of the earth's crust. Found in limestone, chalks, and other common rocks and minerals, it is often used to make aggregate and cement. Because of the high purity, whiteness, and homogeneity of OMYA's deposits, the material can be used in commercial and industrial goods as fillers, coatings, and pigments, common in such products as paper, toothpaste, paint, adhesives, tires, chewing gum, and plastics.

The Vermont operations of the company are major, but it also has plants in Washington State, Tennessee, Kentucky, Arizona, Alabama, and California. OMYA is a privately held Swiss company, originally founded in 1884 as Pluss-Staufer, with locations all over the world as well. It changed its name to OMYA in 2000, and is now the largest producer of industrial grade calcium carbonate in the world. Until 2007, its North American operations were headquartered in Proctor, occupying the best of the Vermont Marble Company's old buildings. It has since moved its headquarters to Ohio, reflecting the company's expansion across North America, and the number of jobs in Proctor have diminished considerably.

Though it sold off many of the Vermont Marble assets over the years after buying the shrunken company in 1976, OMYA still has extensive holdings around Vermont, in 25 separate towns. Currently two quarries are being excavated for calcium carbonate: the Middlebury Quarry, southeast of Middlebury; and the Pittsford (or Hogback) Quarry near Florence.

The Pittsford Quarry is located less than half a mile north of the processing plant, known as Verpol, and is connected to it by a haul road, making its impact on the region much less prominent. The Middlebury Quarry, however, which supplies more material, is 25 miles away, and ships the crushed rock over public roads to Verpol, at the rate of up to 115 truckloads a day, most if it on the state's main (and scenic) artery, Route 7. The company is working with officials on a plan to build a rail spur to the quarry.

Despite the volume of material they handle, though, the company's two large pits have been able to maintain a remarkably low profile, and are nearly invisible from surrounding public space. Only the Verpol plant is plainly visible from far away, poking out of the sea of green treetops.

Talc Is/Is Not Cheap
OMYA's operation marks a formal transition for terrestrial material extraction in Vermont, from cut dimension marble, to ground-up calcium carbonate; from quarrying, to mining. A surprising variety of other materials have been mined in the state from underground mines and open pits. For many years, Vermont was one of the leading states in the production of talc, and it is still one of only six states that does so, and is ranked third in the nation. All of the talc production currently comes from a single mine, the Argonaut Mine, in Ludlow.

Talc is the softest rock in the world – the starting point on Mohs Scale of Hardness. It is used primarily as an industrial chemical filling material, not unlike calcium carbonate, adding tensile strength to plastics, paints, pharmaceuticals and building materials such as roofing shingles.

Luzenac is the world's largest producer of talc since acquiring the Cyprus Minerals company's talc mines in 1992. Luzenac America is based in Denver, with operations in Texas and Montana, and in other countries. It is owned by the British/Australian company Rio Tinto, one of the largest mining companies in the world.

Surprisingly, Vermont once had the nation's largest copper mines. Though this was before the big pits of the West opened up, the mines were worked on a western scale. In 1880, the Ely Copper Mine, near Vershire, produced 3/5ths of the nation's copper, em-
ploving 2,000 people to do so, in a mine that covered more than 300 acres.

The Elizabeth Mine, in South Stafford, was also once the largest copper mine in the nation, and was still the largest in New England during WWII. Its production peaked in 1955, when it covered 850 acres (more than a square mile) and employed more than 200 people. When it closed in 1958, it was the last ore mine operating in the state.

Both of these mines are still being worked, though not for copper, but for their toxic legacy, as they are both now superfund sites, suffering the same fate as many mines in the nation – acid mine drainage, and the leaching of chemicals into creeks and rivers. Superfund work at the Elizabeth Mine started in 2006, and plans are still being formed for the clean-up of the Ely mine, which also closed more than 50 years ago.

Asbestos was mined in great quantity in Vermont – the state was one of only two states in the Union that produced the material (the other was California – most North American asbestos came from Canada). The principal Vermont asbestos mining area is on Mt. Belvedere, in the northern part of the state. Mining started here in 1889, and by 1930, nearly all asbestos in the nation came from here. The main mine is known as the Eden Mill Mine. GAF, the chemical and film company, operated the mine for a number of years, as did Johns-Manville, a Canadian company. It closed in 1993, but remains as a mile-long pit and overburden pile in the hills above town. Its future, and its impact on the region, is being debated.

Clean Slate

Of all these mineral extractions out of the Green Mountain State of Vermont, none is as vast or dramatic as what can be found along the state’s western edge. Running like a twenty mile zipper up the state’s border with New York is the Slate Belt, the largest slate producing area in the nation, and one of longest mining scars in the country.

From West Pawlet in the south to Fair Haven in the north, there are around 100 quarries, sometimes within such close proximity that they create a continuous trench a few miles in length. The industry started in 1839 in Fair Haven, and peaked in the period between 1850 and 1900, when slate was used for tombstones, blackboards, billiard tables, and especially roof shingles. Though still used for shingles (for repairs on old buildings, or as new roofing on designer buildings), and for laboratory benches, architectural projects, flagstones, and a few other things, slate is not so much in demand today. But it’s still enough to employ over 300 people in Vermont, at 25 or so active quarries.

Similar “slatescapes” can be found at smaller scales elsewhere. The Slate Belt of Pennsylvania is also impressive, with 53 original quarries around Bangor, Pen Argyl, and Wind Gap, but it is not as extensive, and most of those quarries closed a hundred years ago. There are other slate production areas in Virginia, New York, and Maine, but they are smaller, sporty and localized.

Slate’s long term effects on the ground are dramatic-looking, due to the steep, jagged excavations, and the less steep but more wide piles of waste rock. More than 90% of the slate extracted from the pits is not usable, due to texture, imperfections, or size, so it is simply piled up near the pit. The result is literal mountains of slate pieces, loosely piled, and maintained at the angle of repose by gravity. Trees have a hard time taking root in the slippery flat rock mounds, which shed water and debris to their perimeter, as a roof would.

Dangerous and difficult to climb, the mountains are unstable and composed of sliding rock pieces that weigh hundreds of pounds. But there are no toxic materials or acid mine drainage issues related to the industry, so the effect is primarily on the physical form of the land, and is largely aesthetic. And given how few people seem to know about this superlative slate belt, remarkably few seem to mind how it looks.

As recently as a decade ago Vermont ranked 4th in the USA in tonnage of dimension stone overall, 3rd in granite, 2nd in marble, and 1st in slate, even as one of the smallest states in the country. But Vermont’s leadership role in dimension stone is slipping due to expansion in other states, competition from foreign markets, and the increasing difficulty of reconciling the visual effects, if not the fact, of large scale mineral extraction in such a highly prized pastoral landscape.

Maybe we will decide, though, that terrestrial excavation’s honest depiction of our collective consumption can be alluring, or even beautiful, like the picturesque old quarries that litter the state already. Maybe one day the extraction of the mineral resources of the Green Mountain State will be more highly appreciated, as unlike ski condos, it operates, for the most part, below grade, in the gray area under the green.
Vermont of course is not all dug up. In addition to the interesting museums associated with the state’s rock industries – the Vermont Marble Museum in Proctor, and the Rock of Ages Visitor Center in Barre – the state’s folded land contains several unique, instructive and nationally significant land-related museums and historic sites. Yes there are maple syrup museums, covered bridge museums, and even a Snocat tractor museum, but here are a few other notable sites in the state recently added or amended on our Land Use Database:

**American Precision Museum**

The American Precision Museum is museum of manufacturing technology, featuring a collection of hand and machine tools, housed in an old armory in the small Vermont town of Windsor. Among the museum’s remarkable collections and displays of small-scale invention and industriousness are John Ernst Worrell Keely’s 19th century Etheric Force Machine, a device that breaks down water into its “ether,” and a large collection of tiny machine tool models made by a retired technician from Detroit named John Aschauer.

**Bentley Snowflake Museum**

The Snowflake Museum in Jericho is one of the most remarkable museums in the state. It is located in the back rooms of the Old Mill Craft Shop, past the door for the Jericho Village Office. It features the work of Wilson Bentley (1861-1931) who lived his entire life in Jericho, and became fascinated with ice crystals, the building blocks of snowflakes. He made thousands of precise photomicrographs of crystals in an attempt to catalog as much of the spectrum of different snowflake forms as he could. He celebrated their beauty and diversity by making lantern slides and montages of his images, giving many away, in order to spread the joy they gave him. “Oh for a thousand hands, a thousand cameras, to preserve more of this exquisite beauty so lavishly scattered over the earth,” he once exclaimed.
Marsh Billings Rockefeller National Historic Park

The Marsh Billings Rockefeller Historic Site is a complicated place. Located in the town of Woodstock, perhaps Vermont's fanciest town, it is the state's first and only National Park. It consists of a few hundred acres covering Mount Tom, and the farm and houses of an estate donated to the government in 1992 by its last owners, Mary and Laurance Rockefeller. The estate is significant especially for its history of conservatively inclined land use practices, and former owners. The Park Service operates a visitor center at the site that describes the history of American conservation, from John Wesley Powell to John Muir, and its New England roots in things like the Appalachian Mountain Club, and the three phases of residents of this place: the early conservationist writer George Perkins Marsh (author of *Man and Nature*, published in 1864); the lawyer, railroad president, businessman-turned conservationist Frederick Billings; and the Rockefellers, whose many good works included giving this place to the people.

Joseph Smith Birthplace

The farm where Joseph Smith, founder of the Church of Jesus Christ of Latter Day Saints (aka the Mormons) was born, in 1805, was located on this hillside in South Royalton. The site is now one of more than a dozen historic sites across the country owned by the LDS Church, and is a pilgrimage site for Mormons, and anyone else who wants to stop by. On site is a church, visitor center, exhibits about his life, and a 38.5 foot tall granite monument, one foot for each of the years he lived. Smith moved with his family to the town of Palmyra in western New York, when he was 11, and there, at 18 years of age, he was visited by an angel named Moroni, who told him about the golden tablets he would later dig up and transcribe into scripture. The church Smith founded with six people in 1830 now has over 14 million members, including powerful politicians and cultural figures. Mormonism is a true American religion: based on Christianity, borne of the northeast, executed in the west, spreading its influence globally today, and archived in bunkers for the future.

Swanton ICBM Silo

Though possibly the least militarized state in the Union, Vermont has two intercontinental ballistic missile silos, no longer in service — as missile silos, that is. One, near Swanton, is used as an equipment yard by the Chevalier Drilling Company, a local drilling contractor that has owned the silo for over thirty years. The other silo is owned by the town of Alburgh, near the Canadian border, and is used as a maintenance yard. Both were built in the early 1960s, part of a group of twelve that surrounded the nuclear base at Plattsburgh, New York. The missiles were Atlas Fs, rated at four megatons, with a 6,000 mile range. They were aimed at Russia. The silos are 175-feet deep, and were connected to an underground Launch Control Center. 45-ton doors would open at the surface to raise and launch the missile. Despite a cost of around $15 million each in 1960 dollars, the silos were operational for just three years, from 1962-1965, and according to many were obsolete before they were even finished.
Vermont has one full-fledged military range, the Ethan Allan Firing Range, near Underhill Center. Owned by the Army, the 11,000 acre range was first established in the 1920s, and was developed as a major gun testing range by General Electric in the 1950s. It is now used by around 20,000 trainees a year, mostly reserve forces and police. The General Dynamics company operates the central portion of the range for the testing and development of weapons (their Armament and Technical Products Division owns the former GE armaments plant in Burlington). Though there are 30 military sites in the state, most are the typical National Guard and Reserve forces' armories, offices, and equipment maintenance sites. The Ethan Allan Range constitutes most of the 14,000 acres under military ownership in Vermont.

**Mount Equinox**

One of the most unusual sites in Vermont is a 7,000 acre private wooded reserve owned by reclusive monks, where the nation’s “longest paved private toll road” rises 3,200 feet up to the top of Mount Equinox. The property was amassed and developed starting in the 1930s, by a chemist, engineer and executive at Union Carbide by the name of Dr. Joe Davidson. Davidson held many patents and specialized in the development and application of materials such as ethylene glycol and Bakelite, and helped develop mustard gas in WWI, and nuclear bombs in WWII (as a principal engineer for Union Carbide’s gaseous diffusion uranium enrichment factories at Oak Ridge, and later Paducah, Kentucky).

He started vacationing in Vermont, and eventually bought all of Equinox Mountain. He made the five mile-long Skyline Drive road to the summit between 1941 and 1947; built reservoirs and hydroelectric plants to generate his own electricity (on a large scale); and built two lodges and two houses on the site.

On his deathbed in 1969, he gave it all to a reclusive Roman Catholic order of monks called the Carthusians, who built a monastery out of 18-inch thick floor-to-ceiling granite blocks (from the Rock of Ages quarry) in 1970. It is called the Charthouse of the Transfiguration, and it was their first monastery in the USA. Outside visitors, and women, have not been admitted since. The order operates the toll road, which is open to the public, and which provides panoramic views of the region, including the distant monastery, and hydroelectric lakes named after Davidson’s wife and dog.

**Highwater Range**

The legendary Canadian weapons engineer Gerald Bull operated a test site that straddled the international border near Jay, Vermont. First known as Highwater Station (the name coming from the closest town on the Canadian side) the location was created on land Bull already owned, in the 1960s, to develop and test components for weapons projects including the construction of the largest guns in the world. Subsidized at times by the Canadian and U.S. governments and working with McGill University, Bull’s designs were even thought to be capable of launching satellites ballistically. Saddam Hussein hired him to build a supergun that might have been able to launch missiles at Israel, but it was never completed. The Highwater Site was owned by different Bull-related business entities over the years, including the Space Research Corporation, a partnership with the Bronfman family. Facilities at the site included a 16 inch wide barrel gun, shooting horizontally on a 1km long range, and a 5 inch gun that sent payloads to altitudes over 70km, from where they would descend by parachute. The location on both sides of the border facilitated otherwise complex, and hindering, import and export restrictions. Dozens of buildings were constructed at the site, all of which now lie abandoned in the overgrowth. Bull was assassinated in 1990, likely by Israeli Intelligence.
OVER THE SIERRAS
A TOUR WITH CALIFORNIA COLLEGE OF ART STUDENTS

IN THE SPRING of 2010, Matthew Coolidge of the CLUI and teaching partner Marina McDougall took a group of curatorial graduate students on a field trip from San Francisco to Utah and back. The trip had a few purposes. One was to deliver the first installment of the archives of the Center for Land Use Interpretation’s Wendover Residence Program to the Nevada Museum of Art. The students had been working on preparing the archives for their transition from messy living documents to artifacts of historic record for a few months. Then the group was going to spend some time in Wendover, a place they had been studying while preparing the archives, to document the Residence Program facilities and the regional context, also for the archives in Reno. Along the way the group visited a number of other locations related to the broader context of the program, following the trajectory from urban to rural, local to remote, here to there, and such things as are central to the programs and practice of the CLUI.

First stop out of San Francisco was the Auburn Dam Site, at the base of the Sierras, near the town of Auburn. Remnants from early and aborted construction attempts can be seen at the site of the proposed $1 billion Auburn Dam on the American River. The dam has been proposed in several forms since the 1950s, and each time the project failed to be executed. Construction even started on the dam in 1967, and continued until an earthquake stopped the project several years later. The function of the dam would be to help prevent flooding in the Sacramento area, making more land suitable for development. At least one limit of the modern development of the Valley seems to have been reached.

From this first marginal location, at the base of the mountainous obstacle of the Sierras, the group headed up into the foothills, to lunch in the quaint, fey town of Nevada City. This Victorian village dates back to the gold mining years of the 1850s, and is the hub for the hill country’s folksy ex-urbanite community, tucked in and around the hills and valleys of the western slope. Over lunch on the patio at the Bistro we spoke with regional historian Hank Meals who then took us to our next stop, the For-Site residency grounds. Located in a scenic rural spot down dirt roads far from town, the site has been used by several artists and school groups as a place to stay and generate work in and about the land. There is a workshop, classroom and event spaces, all relatively new, rustic-modern, and well designed. The land is woods and trails, and high views to the valley below. Work produced here tends to involve natural forms and structures: Andy Goldsworthy, Richard Long, Pae White, Chris Drury, Antony Gromley, and Katherine Johnstone are among the artists who have worked here.

Part of the reason for visiting For-Site was that in addition to working with the CLUI’s Wendover Residence Program, the class has been studying residence programs in general, especially those that are place-based, meaning those that encourage the production of work compelled or inspired by the location – the place – they are in. There aren’t so many, but we assembled a list, and proposed new ones. Visitors invited to talk to the class over the semester included Ed Dadley, the founder and director of Art Farm, a residence program in the middle of agricultural Nebraska; Adam Lerner, the former director of the Lab at Belmar, Colorado, which produced works related to its new-urbanist suburban site outside Denver; Peter Richards, founder of the Arts Program at the Exploratorium and former director of the artist in residence program there; and Smudge Studio and Lead Pencil Studio, both of which have participated in the CLUI Residence program; and many others, generating work about the places themselves. Local field trips were made as part of the class too, such as to the JB Blunk residence program in Inverness and the Headlands Institute, on the other side of the bridge from San Francisco, one of the most notable and productive residence programs in the country. But on this field trip, we were connecting many dots on a passage over the mountains, transcending layers of historic development of the West, and currently heading upstream towards Donner Pass.

The next stop is one of the most dramatic man-made landscapes in the nation: Malakoff Diggins. This site consists of a square mile mining pit with unusual erosional features, some resembling pinnacles of dripped wax, created mostly in the 1870s using the hydraulic mining technique. Hydraulic mining employed high-pressure water cannons to remove the soil and rock that held gold deposits. Several water cannons were used here to erode the sedimentary rock, mixing it into a slurry from which the gold was extracted. The network of underground drains and tunnels here was extensive. The main drain for the pit was over 7,500 feet long. At least one tunnel is still open and is wide enough to walk through. The sediment from hydraulic mining areas such as Malakoff, which is just one of many such sites all over the western slope of the Sierra, choked streams and rivers, and deposited an estimated 1.5 billion cubic yards of sediment into San Francisco Bay, where it remains today as a layer of mud around three feet thick. The practice of hydraulic mining was stopped in 1884, in what is sometimes cited as the first major environmental law passed in this country – though the lawsuits were supported largely by the Southern Pacific Railroad Company, which was concerned about damage to its tracks from the drainage and siltation associated with hydraulic mining.

Walking around the ghostly spires, mounds, and voids of Malakoff and the surrounding “diggins,” with new trees poking out where they can, is to be immersed in a futuristic landscape of a post-natural world from the past. Now a State Historic Park, nobody else was there when we visited. The emptiness was asserted again when we arrived at the restored historic town of North Bloomfield, next to the Diggins, where nobody was either. We headed out of the narrow roads of the hydraulic mining zones and back on the interstate, where heavy snow forced us to chain up the wheels of the van. We passed by Donner Lake in the cold night, and imagined the lonely pioneers stranded and starving on its snowy shores 164 years ago, before the Gold Rush had even begun. From here it was downhill to the haggard future post-casino town of Reno.
AN EXHIBIT OF IMAGES FROM the Center’s archive is on display at the Metro subway station at Hollywood and Highland, in the heart of Hollywood, California. The exhibit, a commission from the LA County Municipal Transit Authority’s Metro Light Box Program for public art in the subway, includes several large light boxed images, each depicting a close up of a locative map somewhere in the USA, focusing on the text “you are here,” selected from among many such images in the CLUI’s archives.

The conceptual structure of this project can be read in a number of ways. The most immediate reading is that even though these “you are here” signs are meant to place you in space, the viewer of these images clearly is not “there.” The image of the sign is not the sign, and the place depicted in the sign is not the same as the place where the image of the sign is.

The seven images have been selected to represent different geographies, but also different types of orientation signage and graphic methods, such as the simple line drawing, the colored map graphic, National Park Service iconography, campus map, and a painted colored aerial rendering. The selection of sites the images depict is significant, but not completely clear in all cases. The clues are there, making for a kind of place-finding puzzle for viewers, who wait for a train, or take pause while on their way down a normally familiar corridor.

Here, in the subway, people are en-route, going somewhere, thinking of other places. If they are on a daily commute, they are perhaps thinking longingly, romantically, of exotic places outside their routine, or simply of home. If they are tourists, or subway riders trying to find their way, this project might help take them further in their understanding of where the heck they are.

The panels will travel to a few other subway stops in Los Angeles over the coming years, but for now they are viewable in the subway station at Hollywood and Highland. On February 11, 2011, they will travel to Wilshire/Normandie, on July 11, 2011 to the Universal City station, in February 2012 to Vermont/Beverly, and in July 2012 downtown to 7th/Metro.
THE CENTER’S INDEPENDENT INTERPRETER PROGRAM continued in 2010, following a display of Cindy Hooper’s video work with two more programs about the US/Mexico border.

In March, an installation of Sarah Cowles and Alan Smart’s project about the border structures of El Paso/Juarez opened, Fence Ditch Repeat, which included a lecture about the project, and an accompanying sound installation by John Also Bennett.

Large printed display panels lined the walls of the CLUI, depicting and describing the history and physical landscape of the 2,000 mile-long border. Roughly at the halfway point, at Juarez/El Paso, the border makes its transition from a linear landform of cartography (over the land westward, to the Pacific), and as a chaotic, dendritic river channel (following the Rio Grande/Rio Bravo eastward to the Atlantic).

It is also a diverse river of steel protrusions, at least on the American side, employing a variety of boundary defences, including recycled Gulf-War landing mat used as fence, 18 foot steel beam fence, three-foot mesh panels fence, straight rail vehicle barrier, cattle fence, staggered concrete column fence, Sandia Fence, curved First Defence-type fence, and the various electronic forms of fence, including seismic sensors, sky boxes, TARS blimps, camera stations, and SBI Net towers.

In August, David Taylor presented his border project, Working the Line, centering on a documentation of the 276 obelisks installed between the years 1892 and 1895 that mark the US/Mexico boundary from El Paso/Juarez to San Diego/Tijuana.

In addition to photographing these monuments, Taylor spent hundreds of hours on patrol with the US Border Patrol, and many hundreds more hours literally walking the line, on both sides, getting to know the social conditions of the border, as well as the physical.

These talks were the second and third in the series of CLUI Independent Interpreter presentations which are part of an ongoing investigation of the nation’s political and physical boundaries, made possible by the support of the Andy Warhol Foundation for the Visual Arts.

THE LAY OF THE LAND

BACK IN THE USA, A CLUI program about Terminal Island was shown in the exhibit Precious Cargo, at the University of Buffalo Art Gallery, March 18-May 15. CLUI images were used in the exhibit Mirror Images: Great Salt Lake at the Jewett Center for the Performing Arts at Westminster College, Salt Lake City, May 1-7, 2010. In April 2010 the Center’s Houston Petrochemical Corridor Landscan was shown at Occidental College’s Thorne Auditorium, as part of a program curated by Lawrence Weschler. And images from the CLUI project Ultima Thule and The Trans-Alaska Pipeline were featured in the exhibit Magnetic Norths, at Concordia University, in Montreal, last Spring.

Possibly the most traveled CLUI material, though, are the project posters produced for the exhibit Experimental Geography, organized by Independent Curators International, and curated by Nato Thompson, which has been on the road since 2008. In 2010 Experimental Geography was shown in galleries at Carnegie Mellon in Pittsburgh; Colby College in Maine; the City University of New York; and the Museum London, in Ontario. It is opening next in January 28, at the Foreman Art Gallery at Bishop’s University, in Sherbrooke, Quebec.

Members of the CLUI are often asked to present lectures and participate in symposiums, and we try to accommodate these requests as we can. In 2010, in addition to tours, talks at CLUI locations, and teaching work with the California College of Art, CLUI Director Matthew Coolidge presented lectures at the Pratt Institute in New York; the Canadian Center for Architecture; the Capital City Arts Initiative, in Carson City, Nevada; Colby College in Maine; at a UC San Diego program at the Athenaeum Music and Arts Library in La Jolla, California; Ohio State University; Chapman University; the University of Florida; Florida State University; and at the University in Valencia, Spain. He also delivered the Keynote Address for the Midwest Interdisciplinary Graduate Conference, on the theme of Obsolescence, at the University of Wisconsin-Milwaukee, sponsored by the University’s wonderfully up to date Center for 21st Century Studies.
The Grapevine, the mountainous passage that separates the population of Southern California from the rest of the state, is an extended zone of transition from one epic region to another. Located at the collision of the San Gabriel and Tehachapi Mountain ranges, the pass is the high altitude reach between Los Angeles and the abrupt agricultural flat of the San Joaquin Valley.

At the southern end of the road, the truck stop town of Castaic crossfades into sub-suburbanism, and is the northern margin of the populated Southland. At the northern end of the road is the true Grapevine, the 6.5 mile-long interstate highway grade from Fort Tejon to the bottom of Grapevine Canyon. Between those ends is an undulating erosional landscape that contains the channels of connective tissue binding the state, flowing through it like a braided stream.

Three successive roadways, representing three periods of modern transportation, snake through the ridge: the old Ridge Route from 1915, the Alternate Ridge Route of the 1930s (Highway 99), and today’s Interstate 5. Around these structures flow lines of water, petroleum, gas, and electricity that fuel the southern Megalopolis.

The 1915 Ridge Route
The first Ridge Route opened in 1915, connecting Los Angeles and the Central Valley for the first time. Prior to its opening, traffic between the two had to divert either to the Coast Highway (now the 101), or eastward via today’s routes 58 and 14, through Mojave and Lancaster. The new (in 1915) direct route north/south followed the ridge line as much as possible, to stay above the washouts and landslides that occur with great frequency in the steep valleys below.

It took 12 hours to travel this route from Los Angeles to Bakersfield, and the speed limit was set at 15 mph, due to precipitous drops and nearly 700 curves, totaling around 100 full circles, to travel a distance of 43 miles. Much of the original Ridge Route remains in the hills, a ghost road high in the mountains, east of the Interstate, still, barely, physically passable. A ten-mile stretch is now gated by the Forest Service, barring legal passage.

The Alternate Ridge Route
The road known first as the Ridge Alternate opened in 1933, after three years of construction. Though it was only ten miles shorter than the old Ridge Route, it was significantly straighter, wider, and faster. Its southern end, from Castaic to Gorman, took a whole new right of way, leaving the most mountainous section of the old Ridge Route a high and dry relic, to the east.

At the north end, from Gorman to Grapevine, its path followed some of the original Ridge Route alignment, the same area now dominated by Interstate 5. In 1936, the road through the Grapevine Canyon grade, the steepest and most dangerous part, was widened to a three lane road, with a passing “suicide lane” in the middle. After WWII the road was widened again, into a four lane highway, two up and two down, with a concrete divider in the middle.

By 1952 the Ridge Alternate was known as Federal Highway 99, and was among the most heavily used long-distance highways in the world. When the Interstate System was introduced, it became State Route 99, and awaited its eventual demise through the late 1960s, as Interstate 5 was being constructed.

Most of the alignment for Route 99, from Castaic to Grapevine, was absorbed by the new Interstate 5, which opened in 1970. One significant exception lies to the west of I-5 now, where a four-lane ghost highway plunges into Piru Canyon, and under Pyramid Lake.
Through the Grapevine was a presentation of the Center’s remarkable roadways Program, and was supported by a grant from the Los Angeles Department of Cultural Affairs. See the next page for an account of the CLUI “Through the Grapevine” public bus tour.

Interstate 5
The modern “Ridge Route” through the mountains dividing Central and Southern California is Interstate 5. This highway is the transportation artery for the whole of the West Coast, from the Mexican border to the Canadian border, through San Diego, LA, Sacramento, Portland and Seattle, a distance of 1,381 miles from end to end. It is part of 46,800 miles of Federal Interstate Highways, uniting the nation in a continuous high speed network of level asphalt.

Construction on the section of the highway between Castaic and Grapevine started in 1963, and was finished in 1970. The alignment of Highway 99 was used for most of one side of the new divided highway, with the exception of the part along Piru Creek, which was soon to be submerged by a portion of the California Aqueduct system.

Like the Interstate, the State Water Project was constructed primarily in the 1960s and early 1970s. The main long distance channel, the California Aqueduct, travels through the Central Valley from the Sacramento Delta, and enters into a series of pump stations at the base of the mountains. After a lift of around 2,500 feet, the water splits into two aqueducts, one heading southeast through the Antelope Valley to the Inland Empire, and the other southwest through the Ridge Route to Castaic Lake, where it enters the water distribution network of Los Angeles.

The State Water Project interacts with the surface transportation systems passing through the Ridge in a number of ways, affecting the alignment, destination, and existence of roadways. The channels and pipelines of the aqueduct add to the infrastructures of flow through this mountainous terrain.

The Highway of Energy
The traversing of the Ridge Route opened up the vast resources of the Central Valley, Northern California, and beyond to the growing population of the Southland. Other conduits of conveyance established early on include pipelines and electric lines that meander under and over the ground, bringing energy to the cities to the south. In fact, it was the engineers plotting pipelines and power lines that made the first roads along the ridge that later were developed into the public road.

As early as 1906, before the Los Angeles Department of Water and Power tapped into the resources of the Owens Valley, Henry Huntington was stringing wires over the Tehachapi from hydroelectric plants on the Kern River, northeast of Bakersfield.

Petroleum from the rich fields of western Kern County, some of the most productive in the nation, started to flow through Grapevine pipelines in 1913, and continue to flow today. And gas, compressed to liquid form, connects through the Grapevine to the nationwide network that extends northward to Canada. The southland is plugged into the continent through the corridors of the Ridge Route. ♦

Through the Grapevine was a presentation of the Center’s Remarkable Roadways Program, and was supported by a grant from the Los Angeles Department of Cultural Affairs. See the next page for an account of the CLUI “Through the Grapevine” public bus tour.
THROUGH THE GRAPEVINE BUS TOUR
MERGING WITH STREAMS OF TRANSIT

The bus ordered for the trip was from the Nada Bus Company, a white bus marked “Nada” on the side, a word that, in Spanish, of course, means “nothing.” All aboard!  

A DAY-LONG BUS TOUR was organized as part of the exhibit Through the Grapevine: Streams of Transit in Southern California's Great Pass. The CLUI tour, on August 12, 2010, took visitors to the many points of interest in the region covered by the exhibit. It was a tour of a road, conducted on the road. A tour about transit, and conveyance, a tour about a road to nowhere, and back. But it was also a tour about a place, a place known for its betweenness, a region between here and there. About what was lost to the road, passed by, eroded, removed, submerged, torn down, intentionally buried, or meant to be unnoticed. What was important, but hidden in the plain sight of the ordinary.

We headed up the road to the end of the road – well, by no means the end, but the end as far as the tour was concerned. The bottom of the Grapevine, two hours away, in one straight shot without stopping. Then we worked our way back, like a pinball bouncing from one post to the other, until returning to where we started.

The journey traversed from the Southland to the middle-land; from urban to rural; consumer-land to production-land. Los Angeles is a city notorious for its dependence on remote resources, like power plants 600 miles away, and water delivered from elsewhere through 400 mile long aqueducts. These mountains, where we were headed, are the space between, where the linkages between these things bear themselves in the barren hills and dales of the ridge. But all nonplaces, are of course, places, even if they are places dominated by passage through them. And that is where we were going.

The mountains of the Ridge are extreme. The collision of faults and plates has made for what some geologists call “an epic mess.” In a sense, we were driving through a wall, a really thick one, that has been built up from below, and simultaneously melted down from above. Through this terrestrial pilage lies the ribbon of road, cresting at the Tejon Pass. Where we are going is a most unlikely, and most inevitable, passage through the connective spine of California.

ZONE OF TRANSITION TO TRANSITION ZONE

At the beginning, heading north on the 405, connecting to the 5, we are still making our way through the city. We pass the gateway for Los Angeles’s infrastructure at the northern end of the San Fernando Valley, where the water of the Owens Valley via the Los Angeles Aqueduct can be seen flowing down the Cascades into its terminal reservoir, next to the Van Norman Complex, where water is purified before entering the city’s distribution pipes; where power via the Owens Gorge electrical transmission lines comes in to the city from the power plants along the aqueduct, and is stepped down to distribution line voltage in electrical cages next to the highway.

Here, across the highway, the longest, highest voltage DC line in the country brings almost half of the electricity consumed by the city from the dams along the Columbia River of the Pacific Northwest. It is converted to AC current here, at the Sylmar Converter Station, across from one of the city’s busiest dumps, the Sunshine Canyon Landfill, which has been compacting the city’s trash into a canyon next to the highway for more than 50 years.

We continue onward through Newhall Pass, one of the largest pieces of highway spaghetti in the Southland, where truck-lanes split off and around the terminus of Highway 14 and Interstate 5. Construction to expand and replace the spans continues, as it was here that the highway collapsed in the Northridge earthquake of 1994, forcing all traffic entering the city onto surface streets, for months.

After passing Valencia, CalArts, and Six Flags Magic Mountain, we enter the beginning of the Ridge Route zone. At the intersection of Route 126 is Castaic Junction. This community was swept away when the Los Angeles Aqueduct’s San Francisquito Dam broke in 1928, sending a wall of water down the Santa Clara River Valley to the coast at Ventura, forty miles away, killing hundreds of people along its path.

In the hills on the right side of the highway are a collection of prisons, the Pitchess and the North County facility, where nearly 6,000 prisoners are held: marginalized population on the margins, another indication we are passing through the fringe of the city. Next to the prison is the Honor Ranch Gas Storage Site, a repurposed oil field where wells are now injected with natural gas, coming via pipelines from the north, for storage before being distributed through the urban grid. This is the terminus for another of the lines of conveyance we will be following up and down the Ridge Route corridor.

At Castaic, yet another, Castaic Lake, the terminal reservoir for the West Branch of the State Water Project, where water from the northern Sierras pools up behind the Castaic Dam, one of largest earth fill dams in the country – nearly a mile wide and 425 feet high. It was built to supply water to Los Angeles in case of an emergency shut down of the California Aqueduct, and to be the cooling water for a nuclear power plant that was never built. The Castaic Valley Siphon emerges from the base of the dam, and flows into Los Angeles’s water supply system.

We are finally now at the settlement of Castaic, after which the housing peters out, and where the streets are lined with panting
trucks taking a break from going up and down the grade. We are at the base of Five Mile Grade, in Marple Canyon, the first real climb up the Ridge Route. Here, curiously, the lanes of Interstate Highway cross over one another: northbound traffic to the left, southbound on the right. When the interstate was built, a more gradual slope on the east side of the canyon was constructed for the benefit of truck brakes, and the hazards that come from their failure. The west side of the canyon, now the northbound lane, occupies what used to be the north and southbound lanes of Highway 99, the road constructed in 1933 to replace the old Ridge Route of 1915. The old Ridge Route at this point heads out of Castaic, and up into the hills to the east, following the ridge top for much of its meandering journey northward.

Heading up the old Highway 99 road surface on the west side, up the five miles of Five Mile Grade, the space between the two inverted lanes of the highway is an empty wide divide with a deep wash running down it middle. The rolling ground resembles frozen ocean waves, where a number of gas and oil pipelines periodically emerge, spanning the troughs, diving back under the crests, and on top of which power lines coming from points north heading to the city create their own undulating waves between the crests of support towers. In the midst of this flowing vista between the lanes is a curious patch of private property developed into the Warped Paintball Park. It provides a splash of color in the dry grass.

The lanes cross back to normalcy at the top of the grade, at a point where the unstable ground of the ridge wreaks havoc on the surface of the highway. The undulations in the roadbed are because the ground, made up of alluvial clay, absorbs moisture and gains weight. After rains in 2005, the hill next to the Interstate here got so heavy, pressing on the ground beneath it, that the land next to it was forced upwards. To address this problem, in addition to installing a network of drains and pipes into the ground, much of the hill itself has been removed and dumped in the adjacent canyon. The amount of earthmoving done to create a roadbed through these mountains is staggering. Instead of building bridges over the canyons and washes, soil was mounded to construct land bridges through the rolling terrain. Cut, and fill.

At the Templin Highway exit, old Highway 99 emerges from underneath the Interstate, and veers west, following a separate right of way, eventually enters a valley, and plunges towards Pyramid Lake. Highway 99 was made obsolete by the Interstate, and then buried under the dam that was built a few years later. As the reservoir filled the four lanes of old Highway 99 became submerged, and still rest on the bottom today. The old roadbed emerges from the water at the north end of the reservoir, in the form of a boat ramp. It curves back towards the Interstate a few miles north of the lake, and disappears under the Interstate's asphalt again. The conjoined roads run parallel and adjacent to the Peace Valley segment of the California Aqueduct, a submerged pipe that connects to a power plant at Pyramid Lake.

Cresting the Ridge
The bus drives over the buried aqueduct as it crosses under the Interstate near the intersection of Highway 138. Then the Interstate curves westward and enters the San Andreas Fault for a few miles. After Gorman, the road crests, subtly, over the highest point of the pass, at 4,144 feet above sea level, and turns eastward again, at the intersection of the Garlock Fault, coming in from the east. This was the site of the largest earthquake in California's recorded history (so far) – 8.0 in 1857. From here the San Andreas fault continues through Frazier Park, and northward on its own path to San Francisco. The Interstate is now, and for the rest of the trip north of this point, in the realm of the Tejon Ranch, the largest privately held piece of real estate in the state of California.

After passing historic Fort Tejon and the headquarters for the ranch, the road enters Grapevine Canyon, the steep walls of which rise thousands of feet above the road, a road that is increasingly at the bottom of a massive V. Around the bend of the steepest downward part of the grade the expansive San Joaquin valley becomes visible: a flat grid to infinity, framed in the symmetric diagonals of the canyon walls. Two runaway truck ramps, one on the right, built in 1983, and another on the left, built in 2000, indicate the steepness of the grade.

Visible ahead in the valley below is the point where Highway 99 emerges again from underneath Interstate 5, this time for a few hundred miles. Highway 99 goes straight up the valley, the backbone of the great Central Valley, merging again with Interstate 5 at the valley's north end, 400 miles away. In the distance, I-5 curves west off the straight line of Highway 99, and heads up the western edge of the San Joaquin, hardly hinting any towns at all.

The I-5/Hwy 99 split marks the northern limit of the CLUI exhibit, and of the tour area. So we exit at Laval Road, at the new Tejon Industrial Center, and pause to consider that we are at the furthest point, the apogee, 100 miles from where we started. We are now at the southern fringe of the greatest agricultural valley in the country, and the northern end of the Ridge Route. Now the tour really begins.

The Various Grapevines
The industrial center at the Laval Exit is the latest incarnation of the Grapevine settlement. This Grapevine is the one related most to the present and future version of this transitory place. It was built over the last ten years by the Tejon Ranch Company, owners of the land, as a highway services and logistics center. It has the latest generation of roadway food for passenger cars (Starbucks, Panda Express), and a large truck stop. Though there can be more than a thousand people here at once, nobody lives here. The structures that dominate this place are four huge new warehouses, with room for more. The largest of them is IKEA's Western North America Distribution Center, a building that has 1.7 million square feet of enclosed space. It is one of the largest and newest in the fleet of IKEA's 28 distribution centers worldwide.
Though it seems like its far from everything, and in the middle of nowhere, the warehouses are located here because it is in the middle of everywhere the company wants to be. This place is a day’s drive, round trip, to 97% of the population of California — five hours or less to San Diego, San Francisco, Sacramento, and the 15 million people in the Los Angeles area. It also is balanced between two major shipping ports. 80% of IKEA’s product comes through the port of Los Angeles (mostly from China), which is two and a half hours from this location. Another 20% comes via the port of Oakland, four hours away. If there is a disruption at either port, due to a strike, terrorist threat, or some other event, the flow of goods can be diverted from one port or the other with minimal stress on the company’s logistics. Another advantage to this location is that without any residents here, the facility can operate 24/7, and can therefore take advantage of the Port of Los Angeles’ off-peak (late at night) savings incentives.

The logistical advantages of this location was enough to convince the Tejon Ranch that a warehouse center, way out here, would be recognized by companies operating in the global arena. This new Grapevine station is a global, not a local place. It may be a bit ahead of its time though, as one of the tenants, Oneida, has already moved in, and out. Two entire buildings, 2 million square feet, are completely empty. Rent on the 650,000 square foot warehouse, owned by the industrial logistics company ProLogis (which has a half a billion square feet nationwide), is $91,267 per month.

The bus drives around these massive spaces while this is all being explained to the group on board, by the bus tour guide and narrator, Matthew Coolidge, director of the CLUI. After rambling on about the corporate history of the Oneida Company (a flatware company that was started by John Humphrey Noyes, utopianist, perfectionist, and free love polygamist from Putney, Vermont, who established a famous commune in Oneida, in upstate New York, in the 1800s), as well as that of IKEA (the privately held Swedish furnishings company, started by Invar Kamprad, in 1943, which has grown to 315 stores, and 127,000 employees, worldwide, and how the “IK” of IKEA are his initials, and the “EA” is from Elmtaryd Agunnaryd, the name of his farm and parish in Sweden…) the bus finds its way to the exit and southbound on Interstate 5 again.

Before the next exit, we decide to stop at the California Highway Patrol weigh station, where all trucks entering the Grapevine Canyon are weighed and inspected (another station performs the same function for northbound trucks, at Castaic Junction.) The scale display shows us the weight of our fully loaded tour bus: 40,563 pounds.

The next exit is the second of the three Grapevines and the one actually labeled Grapevine. It represents an earlier era of roadside services. A smaller-scale, less truck-friendly loop provides access to gas stations, Denny’s, Jack in the Box, and a rarely visited loungy Mexican restaurant that smells of rat urine. It is at this Grapevine where the split lanes of I-5, coming down the canyon, converge. It is also here that a side road heads east towards the Edmonston Pumping Plant. We head that way.

The road leads along the base of the Tehachapi Mountains a few miles to the last of a series of pumping stations that bring California Aqueduct water to the Southland. This one lifts more water, higher, than anywhere in the world. On the way there we watch a video about the state water project, and once at the gate we meet Don Anderson, chief hydroelectric plant operator. He explains how the system works.

The California Aqueduct carries up to 2 billion gallons of water a day to Southern California from the watersheds of Northern California, hundreds of miles away. It also provides water for the farmers of the Central Valley. The aqueduct was built in the late 1960s, a project spearheaded by Governor Edmund Brown (father of former and present Governor Jerry Brown). It is still the largest publicly built and operated water project in the world, by most ways of measuring such things. As the aqueduct reaches the base of the Tehachapi mountains, four pump stations begin to carry the artificial river over the pass. The first three pump stations, west of the Interstate, lift the water 470 feet. This one, the last one, pumps it 2,000 feet further up. Some states in the USA consume less energy than California uses just to move its water around.

The forebay, where water pools before going in the pumps, is 70 feet deep. Two arms of the building embrace the forebay, and contain the fourteen pumps that do the work. The water travels up the ridge in a series of tunnels inside the mountains, passing an exposed surge tank, and through a number of siphons on Tejon Ranch. It travels in separate tunnels as it goes through a major earthquake zone, the Garlock Fault. Important redundancy. The water emerges from underground ten miles south of the pumping station, at the Tehachapi Afterbay, where it splits into two aqueducts. The East Branch heads through the Antelope Valley and to the Inland Empire, terminating at Lake Perris. The West Branch enters the Oso Pumping Plant, where the water is lifted another 237 feet, then flows for another 2.5 miles and collects in Quail Lake, then flows through the Peace Valley pipeline into Pyramid Lake, and from there through a seven mile underground pipeline to Castaic Lake, the terminal reservoir. Quite a journey.

This and more is explained, along with the fact that our brief is to talk to us on the bus, idling outside the gate, even though inside the pumping plant is an overlook and interpretive plaques built for visitors. It can no longer be visited by the public, due to security issues.

On the way back down Pumping Plant Road, we pass over and under southbound energy lines we will encounter as we head south over the Ridge Route: a series of electric lines from dams in the Sierras, including one line built in 1915 for Huntington’s railway that connected to the Eagle Rock substation in Los Angeles; and a 34” Southern California Gas Company pipeline, exposed at a pipeline maintenance “pig” insertion point at the base of the mountains, that connects the network of gas lines extending up to Alberta, Canada, and to the Honor Ranch storage site in Castaic, for local distribution in the Southland.

Back at the second Grapevine, we turn up a dead-end road between the two lanes of the Interstate. The road, known as the 17 Mile Tangent, was the stem of the old Ridge Route as it entered the canyon. After all the switchbacks of the mountains, the original road landed at the base of Grapevine Canyon, and finally straightened out here, at the edge of the San Joaquin Valley. In 1926, this perfectly straight 17-mile road was paved in cement, as if to make up for all the curves it took in the hills, forming the longest, straightest road in the state at that time. Today, it leads through a plot of...
commercial grapevines, planted anonymously here by the Tejon Ranch Company, perhaps symbolically, as this is the base of the Grapevine. Beyond the grapes are two petroleum pump stations where Kern County crude is pumped up over the mountains.

This is the site of the first community of Grapevine, called Grapevine Station, where a service station and café supported the original Ridge Route travellers, as far back at least as 1915. It’s a historical point of beginning, and there are several things to look at. So we get off the bus and are led around the site by the only historian who ever really cared about this place, someone who in fact is the expert on the history of the Grapevine, someone we were honored to have on board the bus to help out with the historical elements of the tour – Harrison Scott.

Scott is the author of Ridge Route: The Road that United California, a history, primarily, of the 1915 highway that first came through the region, connecting northern and southern California directly for the first time. He is a retired telephone company engineer who got interested in the old Ridge Route decades ago, and became its champion. He lobbied to have its historic significance understood and appreciated, eventually getting eighteen miles of the old road on the National Register of Historic Places in 1997.

Harrison explains what used to be here – the small community, and its denizens. We walk over to the remains of Arco’s old pumping station, and the last remaining house of the pump station workers, which is still occupied by a family. We walk to the current petroleum pumps, recently installed when the pipeline was upgraded by its new owners, PXP, out of Houston, Texas. PXP operates two petroleum lines that go over the Grapevine, bringing crude oil from the fields of Kern County to the refineries in southern Los Angeles. Line 63 is a 16” pipe, with a 110,000 barrels per day capacity, that brings light crude from the Kelly Pump Station in the valley to the Hynes Terminal in Long Beach. Line 2000 is a more recent 20” pipeline, with a 150,000 barrels per day capacity, built over the last few years, that carries heavy crude 130 miles, connecting through the Emidio Pump Station in the valley to a refinery in Los Angeles. Kern County is the largest domestic source of crude that is consumed in California. We gaze at the pumps, and contemplate the flow.

Up the hill a few hundred yards, ExxonMobil operates a pump station for its pipeline through the ridge. The first petroleum line over the mountains, an 8” line from Kettlemen Hills, pumped from here to a small refinery in Lebec as early as 1911. Lines later extended from that refinery to Los Angeles. After a few other generations of pipes, including the M1 and the M55, ExxonMobil now operates the 16” M70, from here to Los Angeles. We will see these pipes poking out of the ground occasionally on our way back.

Onwards and Upwards
The group gets back on the bus, leaving the original Grapevine community at the base of the Grapevine with its eponymous grapevines, tucked between the lanes of the descending interstate, to continue its slow disappearance amid brake dust. We head up the Interstate now, southbound, into Grapevine Canyon, in the slow lane. On the west wall of the canyon a cluster of wild cimarron grapes, the true source of the name of the Canyon, are visible still.

We are lumbering up the southbound lane of Interstate 5, which originally was both lanes of Highway 99. This was the steepest and most dangerous part of Highway 99. Before the lanes were divided, cars barreled down the canyon immediately adjacent to cars heading up it. If they collided, which was especially common in the 1930s when the road was three lanes wide (one up, one down, and a passing “suicide” lane in the middle) it could be with a combined speed of over 120 mph. The upslope speed differential (still significant today) with trucks going as slow as 20 mph, and cars going 70, provoking lots of sudden moves and passings, added to the chaos. And, often, vehicles would lose their brakes, overheated by the end of the long descent, and would careen over the side, or into oncoming cars.

We pass the slab of an old gas station and motel, McLarty’s, which moved here from Grapevine Station after the Alternate Ridge Route (later named Highway 99) replaced the old Ridge Route, in 1933. McLarty’s was located at a disadvantageous curve next to the downward-lane side of the highway. Out of control vehicles crashed through the service station on a number of occasions, and it was rebuilt at least four times. The buildings are all gone, and the remains of the old Unocal 76 sign lies in a pile of scrap, behind the old gas pump slab. Harrison Scott points out several other sites of café’s and service areas as we climb the grade, visible only as faint turn-outs now, and old water tanks in the hills. When the Interstate came through, all of these places were removed.

This stretch through the canyon was the first portion of the Ridge Route’s Highway 99 to be widened to four lanes – it was done during WWII. Soon after the war, much of the rest of the highway was widened too. But even with two lanes up and two lanes down, the Grapevine canyon portion continued to be dangerous. The transportation department built a wooden guardrail between the lanes, but this proved insufficiently strong. In 1946, they replaced the wooden divider with a sloped, segmented concrete barricade system, which worked. This is generally understood to be the invention of the now ubiquitous concrete divider known as k-rail. On the East Coast the structures are called Jersey barrier, so named because the New Jersey Highway Department thinks they invented it when they used it for the first time in 1949. The debate rages on.

We soon pass Deadman’s Curve, where the old Ridge Route’s thin cement road surface still rings a hill with a tight curve, now cut-off from the new highway like an abandoned oxbow. Above it is the Christo Umbrella death site where, in 1991, at the full flowering

Harrison Scott leads the group through the remains of Grapevine Station. CLUI photo
Past it is another crude oil pumping station, the Tejon Pump Station, with tanks and several buildings behind a chain link fence. This was part of the Arco line, now owned by PXP. With new pumps installed at the bottom of the Grapevine, this pumping station is obsolete, and is used as a maintenance yard. We exit the Interstate after the pump station, and pass the site of Fort Tejon, which has been rebuilt and maintained as a historic site and small museum.

The Lay of the Land
Winter 2011

Page 29
development of the industrial park at the bottom of the Grapevine. The proposed Tejon Mountain Village would be an upscale settlement of around 3,500 homes, with a golf course and a shopping center, scattered on the hills of the ranch, in the area north of Castac Lake, and on the east side of the Grapevine. A larger in numbers, but smaller in area, development called Centennial, is planned for the flatter part of the ranch along Highway 138 and the western end of the Antelope Valley. Centennial would be a major new community, built from scratch, with a proposed 23,000 homes, as well as schools, business parks, shopping centers, and a transit system. Though the ground is yet to be broken for it, the first phase is slated to begin in 2013.

The bus travels on the main road into the core of the Ranch, Bear Trap Road, which will no doubt be renamed by the time the road becomes the central artery through the proposed Mountain Village community. For now, the road shows rolling hills, studded with oaks, dotted with occasional cattle pens, and crossed by power lines and pipelines bringing energy and water to Los Angeles. The bus proceeds to a maintenance laydown area for the California Aqueduct, which runs through the ranch in a tunnel underground. Further up the road, a half mile section of the aqueduct emerges as a double-barreled siphon, and beyond that is the surge tank. Then the road descends down to the pumping plant we visited earlier. But it is too rough for the bus, so we turn around at a point where the aqueduct is directly underneath the bus, and head back towards the gate. The landscape is majestic. It is clear why so many car companies film their advertisements on the scenic, paved, but untraveled roads of the ranch. We pass Castac Lake, with its aeration sprayers, a semi-natural lake, formed in a depression in the Garlock Fault escarpment which runs through the Mountain Village site. The lake is owned by the ranch, which has renamed it Tejon Lake, to avoid the confusion that comes with the similarly named, and much less tranquil, Castaic Lake, further down the aqueduct.

Despite all the proposed development, we are assured that 90% of the land of the ranch will be preserved as open space, albeit open space that will be next to developments. But the northern end of the ranch, overlooking the valley, will be left alone, mostly. We leave our briefers at the gate, and head to our next stop, next door, at the California Department of Transportation (Caltrans) Lebec maintenance yard. This is the base of operations for the highway department that maintains this treacherous stretch of Interstate. Here, guardrails are replaced when cars crash through them, and here the plows are kept for clearing the winter snowfalls that can shut the pass down. We pick up Dennis, who has worked at the site since the 1970s, and he explains what Caltrans does as maintainers of the modern Ridge Route.

We head out the gate and engage in a curious loop, stopping at the rest area on the southbound side of the highway, then crossing over and visiting the rest area on the northbound side. While the differences between them are subtle, the rest stops are emblematic of the Interstate phenomena. They are places disconnected from the land they are in — they are only for, and accessible by the Interstate, the through-way. The thousands of people who stop in to use the rest rooms linger a bit around the shaded walkways and vending machines, almost in a dream it seems, as if inertially still in motion, on their way, but static, briefly. They are somewhere, on the ground, in a vista, sort of, but really not anywhere at all. Interstate rest areas are heavy duty pit stops along the road, but are a non-place place. It seems we could loop this loop all day, going from one rest stop to the other, back and forth across the Interstate, back and forth, without going or being anywhere, a locked groove of pure transit. But we resist the temptation, and drop Dennis back at the maintenance yard. Then we head south on Lebec Road.

Gorman: Downhill from Here

At Frazier Park Road, people on the bus are reminded that we are entering the San Andreas Fault again. Heading south on Peace Valley Road, though next to I-5, we are on the old Highway 99 road bed. Off to the right, at Falcon Road, Harrison Scott points out a cut-off loop of the old Ridge Route road, which we are also paralleling. We crest the pass once again, 4,144 feet, and begin our inevitable descent, slowly, and head into the small town of Gorman. Here the three phases of the Ridge Route roads converge.

Entering town, we pass the third location of the house of Mary Ralphs. As a long time resident of Gorman, her house has been bought by Caltrans and torn down twice before, for successive expansions and realignments of the Ridge Route. This house, on a hill next to the historic Gorman School, seems safe for a while. Mrs. Ralphs is the oldest remaining member of the Ralphs family, which has owned Gorman since buying it from the Gorman brothers in 1898. Several members of the Ralphs family, the same one that started the Ralphs grocery store chain now prevalent throughout the Southland, have large old ranch style homes in the hills around Gorman, though much of the town site itself, and the rest of the 2,866 acres of the Ralphs ranch, was sold by the family in 1997 for $4.2 million.

We turn left, past a relief valve for the 20” PXP petroleum pipeline, and go under the Interstate. A Chevron gas station has been here since at least 1923, when it was operated by Standard Oil of California, Chevron’s precursor. Early on, because of its remoteness, including its isolation from railways, this gas station had to operate more autonomously, needing large storage tanks, supplied periodically by tanker trucks. This was unusual in the 1920s, as roadways tended to follow railways through remote regions. Soon, as highways expanded outward and reached further into the land, this type of station became the norm. We turn right and pull in to the Ranch House Restaurant, known to some locals as the “former Sizzler.” A late lunch, as it’s 2:30PM.
After lunch we head south through town on Gorman Post Road, veering away from the Interstate for a while. (While it is conceptually possible to travel the entirety of the Ridge Route from Grapevine to Castaic without being on the Interstate, there would be moments where portages over land would be necessary). We cross over buried Line 63, PXPs 14” petroleum line, visible on the surface as a swath of slightly disturbed ground. At a small electrical yard, Edison’s Gorman Substation, we pass under one of the electric lines that follows the Ridge Route, the Kern River Power Plant # 1 line, which dates back to 1908 and is still in service. The road follows the San Andreas Fault, and is dotted with fault line pools known as sag ponds. It is part of the original Ridge Route from 1915, and Harrison Scott points out a few of the old service stations, cafes, and motels, such as Holland’s Summit and Caswell’s, now gone entirely.

The southern end of Gorman Post Road curves to join the newer Highway 138, while the old Ridge Route surface continues straight into a dead-end. CUl photo

Gorman Post Road ends at Highway 138, near the California Aqueduct’s West Branch, where for two miles the water is contained in an open trench (the Lower Quail Canal) between Quail Lake and the Peace Valley Pipeline. From here we head east on Highway 138, passing through the area slated to become Tejon Ranch’s 11,700 acre Centennial development, north and east of the aqueduct’s Quail Lake. For now, the region feels remote, and open. A large and prominent white house on the southern side of the lake is the Kinsey Mansion, owned for years by General Petroleum (later Mobil Oil). They operated a petroleum pipeline through the area, and used the house as a duck hunting club. Now the building is privately owned, and is quite a sight, modeled after George Washington’s Mount Vernon, and with a long white limousine perpetually parked out front.

We veer southward, off 138, heading up into the hills, along the original Ridge Route. Harrison Scott points out some of the features along the way. Near where we turned off are some old rusty tanks, which were part of a General Petroleum pipeline which came over the ridge from the Kern County oil fields. Oil was heated and pumped from here to the railway at Mojave, where it went by train to refineries in Los Angeles. Later the pipeline was extended through the Ridge Route all the way to the city, and this facility became obsolete. Next to it is a former telephone company booster station, built in 1929 to amplify the signal on the long distance line between Los Angeles and San Francisco. Due to the remoteness of the station, workers lived on the premises. The complex is now occupied by artists associated with CalArts. Across the highway is a large cement operation on the grounds of Tejon Ranch. We head up higher into the hills, leaving the floor of the Antelope Valley, and enter the most remote and intact section of the old Ridge Route.

Climbing upward, we arrive at the ruins of Sandberg’s Lodge, once a famous and popular place to stay for people traversing the old Ridge Route. At an elevation of 4,170 feet, it was known as a high class mountain resort, with 25 rooms in the main lodge and cottages, built as the road was being completed in 1914. It was one of the few old stops along the old Ridge Route to remain long after the route was bypassed by the much faster Alternate Ridge Route, built in 1933 (and following, roughly, the route of the Interstate today). Sandberg’s eventually burned down in 1961. We get off the bus here and wander around the ruins.

The Road continues southward into the mountains, along the top of the ridge, soon reaching the highest point, 4,233 feet, and then winding down the mountains to Castaic, 26 miles away. The road is up there all by itself, with occasional turn-outs and historical plaques erected by Harrison Scott and his team from the Ridge Route Preservation Organization. They meet the second Saturday of every month at the Ranch House in Gorman, and head up to this stretch of the route to perform maintenance on the road, as it is no longer maintained by Caltrans, or the forest service, whose land it passes through. It is mostly used by the oil companies that access pipelines that run through the area, and kept passable as a fire road. Heavy rains in 2005 washed out parts of the old Ridge Route up here, and the forest service closed the gates on a ten mile stretch. Though the road was eventually repaired, the gates remain closed, so visitors can no longer drive all the way through on the old Ridge Route.

Even if we could get through the gate, or at least to the tumbled-down ruins of the Tumble Inn, just before the gate, we could not do it in a full sized tour bus. If we proceeded any further up the rundown old road, we would soon bottom out, and with no place to turn around, we would have to back out, with precipitous drops and sharp curves the whole way. So we turn the bus around here, at Sandberg’s, and go back down to Highway 138, and head westward.

Just before I-5, we pass under familiar electric lines, the 1913 Pacific Power and Light lines from Kern River, still held aloft with the original metal towers, and we see the Gas Company’s 34” natural gas line, on its way to the Honor Ranch in Castaic, coming out of the ground like a worm to cross over the Aqueduct channel.

**Going with the Flowing**

The roads merge where the Aqueduct’s Lower Quail Canal ends and the water enters the 12-foot diameter Peace Valley pipeline, following the Interstate for five miles, and dropping 750 feet in elevation before entering the Warne Power Plant, on the northern arm of Pyramid Lake, where it generates electricity before spilling into the lake. On the way, just past Smokey Bear Road, we see an isolated suspension bridge to the west, carrying the PXP petroleum pipelines over a steep-sided creek between Hungry Valley Road and Hard Luck Road.

We exit at the Vista del Lago, a visitor center overlooking Pyramid Lake, built by the state of California to describe the State Water Project. The hexagonal building is a veritable casino of interpretative mechanisms. Interactive and static displays range from the
general ("How much water does it take to make a cheeseburger?") to detailed three-dimensional models of the state's water infrastructure. Gary Moore of the State Water Project meets the group in an auditorium and describes the role of Pyramid Lake in the state water supply system. The lake filled in 1974, and was built to generate electricity, as well as be a reservoir for water bound for Los Angeles. The lake is a holding tank for one of the largest pumped storage power plants in the nation. A 7.5-mile long, 30-foot wide tunnel through the mountains of the Ridge Route connects this lake to Castaic Lake. The drop between the two is 1,000 feet, so the water at the end has plenty of energy in it. Water flows through the tunnel during periods of peak energy demand (generally during the day and evening), when electricity costs more to buy – and is therefore worth more. At night, the same turbines that generate electricity in the power plant reverse, and become pumps, moving the water back up the tunnel to Pyramid Lake. Obviously, in terms of energy, there is a net loss, as it uses more energy to pump the water up then is created by letting it fall down. But the fact that there is less demand for power at night, and that electricity costs less, is enough to create a net gain financially, and enough to justify the massive expense of the operation.

We leave the visitor center and head south on the Interstate, pulling off into a truck brake check area, where a gap in the fence allows the bus to take a short cut to old Highway 99, heading north towards the lake. This is the ghost highway – a four-lane paved and graded road that until 1970 carried all the traffic of the Ridge Route. Today it goes nowhere, and serves no communities, it simply heads north through an empty valley for seven miles then plows directly into the base of the Pyramid Dam. There is, however, a gate, two miles shy of the dam, preventing cars (or tour buses) from approaching the dam, for "security reasons." (It is possible and permissible to bicycle most of the way to the dam though). We turn the bus around at the gate and head back down the ghost highway. Along the way, we stop to admire an access portal for the Angeles Tunnel. There are several of these along the 7.5 miles of the tunnel, to allow maintenance crews to get inside the 30-foot diameter shaft. These are, of course, gated and locked too.

We cross under the Interstate at the Templin Highway exit, cross over the by now familiar gas petroleum pipelines, visible crossing over washes, and, up the road, hit the old Ridge Route where it comes down from its lonely and closed off mountaintop journey, and descends further a few miles into Castaic. If we were to go straight at the intersection, down the Templin Highway, we would get to the gate of the power plant where the Angeles Tunnel terminates. Beyond that, the highway stops abruptly, at the edge of a vast mountain wilderness, spared because the Templin Highway was never actually built. But we turn right and join the old Ridge Route for its final leg. Along the way we can see the Angeles Tunnel surge tank, looking like a massive soda can on a hilltop. The tank is really a steel tube, 120 feet wide and 400 feet deep. It extends deep under ground, connecting to the tunnel, and serves as a shock absorber, holding excess pressure and water if necessary, relieving stress that could rupture the tunnel. Visible below in the valley is the Elderberry Forebay, the reservoir that holds the water from Pyramid Lake, until it is pumped back up, in the darkness of night, and on weekends.

The Angeles Tunnel surge tank. CLUI photo

Descending towards Castaic Lake, the original Ridge Route goes through what is now the Castaic Brick yard, and is degraded and off limits. We meet up with the original roadbed south of the brick yard, in the midst of the new Northlake housing development. We are back in the sprawl. On the Interstate southbound through the suburbs and into the city, we watch some videos (about Christo’s umbrella project, water, Norman Bel Gettes on the futurama, and part of a 1970s TV movie called Smashup on Interstate 5) and we contemplate the various meanings and interpretations of this day on the road.

The Lay of the LandWinter 2011Page 32
Lookout Mountain, and processed, edited, and printed there. Some Reagan) for hosts and narrators.

The site was first developed in 1941, as a control station for military radar sites on nearby mountaintops. After the war, the building was expanded and its mission changed. It became the main photo and film studio for the documentation of the new atomic age. Called Lookout Mountain Air Force Station, the 52,000 square foot building opened in 1947, after Operation Crossroads, the nation’s first nuclear test series. Lookout Mountain contained a full soundstage, film processing labs for 16- and 35-mm motion picture film, facilities for optical printing, animation, and editing, screening rooms, and film storage vaults.

As many as 250 people worked there, in the only totally self-contained film studio in Hollywood. It operated in complete secrecy, producing classified films for internal use by the federal government, drawing experts from the local industry, and occasionally using well-known actors (including James Stewart and Ronald Reagan) for hosts and narrators.

Just about all the classic footage of Pacific atomic tests, as well as from the Nevada Test Site was produced and shot by staff from Lookout Mountain, and processed, edited, and printed there. Some footage found its way into wider distribution, used for civil defense and public education. But nearly all of the estimated 6,500 films produced at Lookout Mountain remain classified.

In 1997, a declassification program supported by the energy secretary under President Clinton was initiated, compelled by the release of new footage uncovered and presented in the film Trinity and Beyond, by Los Angeles filmmaker Pete Kuran. Kuran helped select the films for declassification, and to preserve the films for the government. He produced four more documentaries using the declassified footage, images that up to then had never seen the light of day. The declassification was stopped after 9/11, with fewer than 100 films making it into the public. The bulk of the product of Lookout Mountain remains entombed in the classified vaults of the Defense Threat Reduction Information Analysis Center, at Kirtland Air Force Base in Albuquerque.

By the late 1960s the formerly remote canyon was now heavily developed, due to a post-war boom that the lab helped generate. Neighbors were getting upset with the lab’s traffic and its industrial activities – it’s on the very narrow and steep Wonderland Avenue, which became lined with homes. Also, atomic testing was forced underground, making for less photogenic activities, and for a change in the function and technology of documentation (the technical bomb photography was continued by the EG&G company, based in Nevada and Massachusetts). So in 1969 Lookout Mountain Lab was shut down, and was auctioned off. It became a private residence at the peak of the countercultural period that bloomed in Hollywood, and especially in Laurel Canyon.

Laurel Canyon in the ‘60s and ‘70s was Los Angeles’ Haight-Ashbury, full of wild parties and music. Its residents at that time included Joni Mitchell, Carole King, Frank Zappa, Jim Morrison, Dusty Springfield, Neil Young, Brian Wilson, the Mamas and Papas – in fact just about every famous rock star of that era. Even the past and present California Governor, Jerry Brown, and that other wild and crazy guy Steve Martin lived in the canyon.

Not much of what went on in the 52,000 square feet of the former Lookout Mountain Lab in this period is as yet part of the public record, though hopefully it remains in a few people’s hazy memory, and will find its way to print, someday. But, as some form of testimony to what transpired, Lookout Mountain emerged from that era with a dozen more exotically tiled bathtub spas than it had originally.

The property ended up being put up for auction again in 1994. The sale took place on January 18, the day after the Northridge earthquake. A Los Angeles Superior Court judge and his partner, a painter (apparently, the only people who showed up), bought it for $750,000. Under their stewardship more renovations were done, including improvements to the pool, and the creation of around ten thousand square feet of gallery space, covered with their paintings. The sound stage is now an art studio, and there are several apartments scattered around the building. It is only a bungalow or two smaller than the largest private home in Los Angeles, the 56,500 square foot Manor, built by TV producer Aaron Spelling. The lower, darker level, remains relatively unchanged. Institutional hallways with peeling paint and acoustic tile lead to screening rooms, stripped of their chairs, and to a dozen film vaults with combination dials on their doors and empty shelves. It’s a labyrinth.

The current owners put Lookout Mountain on the market in September, 2010, around the time that the New York Times had a story about the Bomb Chroniclers, which mentioned the building’s historic role. The real estate listing describes it as a personal residence/creative space and a Warhol Factory Style compound that could not be duplicated today. Indeed.

Asking price $6,300,000. Contact real estate agent Brett Lawyer, Sotheby’s International Realty, (310) 888-3808.

*All of Pete Kuran’s movies are available for sale through the CLUI. The original government films that were declassified are available on DVD from the Department of Energy, for $10 each, though many are available for free on the internet at places like the Prelinger Archives.
BOOK REVIEWS

BOOK REVIEWS
BOOKS NEW TO THE SHELVES OF THE CLUI LIBRARY

An Expanding Subterra, by Wayne Barrar, Dunedin Public Art Gallery, 2010
New Zealand photographer Wayne Barrar’s excellent book on man-made underground spaces lingers longest on mines and power stations in Australia and New Zealand, but it features many interesting images of sites in the USA, especially storage facilities in converted old mines. Barrar focuses on the interface between the excavated and the quotidian, how the raw surrounding rock is integrated with the more ordinary building materials, structures and furnishings of office and work spaces. This collision is what makes these spaces so unique, and alluring. Essay by the great underground writer and theorist David Pike. Barrar was a participant in the CLUI’s Westendorf Residence Program in 2001.

Working the Line, by David Taylor, Radius Books, 2010
It’s finally out. The best book yet on the Mexican/US border is a visual survey of all kinds of structures and activities in this staggering marginal zone. Taylor spent years getting to know this space, from both sides, and spent hundreds of hours on patrol with the Border Patrol. His mission was to document every one of the 276 official border marking monuments, and to capture the rest of the story in the process. The result is this well designed slip-case publication, with an accordion folded large format insert showing 45 of the monuments, and a larger accompanying book, describing the larger context, in images and text. Taylor was an invited Independent Interpreter at the CLUI in 2010.

Earthrise: How Man First Saw the Earth, by Robert Poole, Yale University Press, 2008
Great to have the complete skinny on how the first photographic images of the earth came to be, the cultural climate that engendered them, and their immediate effect on us, and our ideas about our planet. Especially impactful was the “Earthrise” image of Apollo 8, taken in 1968, and the “Blue Marble” image of Apollo 17, in 1972. Interesting to learn about the relationship between these images and things like Stuart Brand’s mid 1960s campaign to get the government to make and distribute such an image, his use of a satellite image taken of the earth in 1967 on the first edition of the “Whole Earth Catalog,” and to consider the influence of that catalog on the people who made the World Wide Web what it is (Stuart Brand of course among them), and the reappearance of the earth as an electronic “Blue Marble” on GoogleEarth.

Acoustic Territories: Sound Culture and Everyday Life, by Brandon LaBelle, Continuum, 2010
An inventory and assessment of the contemporary landscape of sound – the “acoustic territory” that surrounds us. It starts with the underground, and heads to the sky, passing through things like busking in the subway, suburban housing development sound restrictions, deprivation of sound in prisons, sidewalk textures, car interior and exterior sounds, transmission towers, malls, airports, and many other forms of urban space. Not a descriptive tour but a thoughtful, street-academic essay on place-based psychoacoustic phenomena, and the culture and politics of the soundscape.

Newtown Creek: A Photographic Survey of New York’s Industrial Waterway, by Anthony Hamboush, Princeton Architectural Press, 2010
A photo journey through the edgescape of Newtown Creek, the notorious industrial channel that cuts three miles into Brooklyn between Roosevelt Island and the Williamsburg Bridge. More than 200 clear, color images, taken between 2001 and 2006, presented mostly uniformly on the right page face of each spread, and on the left face, no captions, just a label with the name of the site, objects, or view depicted, company name (if there is one), address, and the general heading that the photographer was pointing. A very effective portrait of an important urban place.

Detroit Disassembled, by Andrew Moore, Damiani/Akron Art Museum, 2010
Big color photo book that does Detroit’s ruins justice, without the problematic voyeurism of many previous attempts. The photos, taken in 2008 and 2009, include the requisite depictions of the Michigan Central Station, the cars parked in the Michigan Theater/parking lot, and the Packard and Fisher Body buildings, but his view also includes the process of decay, its life: the scrappers harvesting metal, the decadent paintball game venues that add a new layer to the Packard Plant ruin, the graffiti, the police training targets in the Chase Tower, and the rotting books in the public school book repository that form the soil for new birch trees emerging out of the collapsed roof. The spaces are glorious temples of rot. Clearly Detroit is way ahead of the rest of us.

Asylum: Inside the Closed World of State Mental Hospitals, by Christopher Payne, MIT, 2009
Nice big photo book about those amazing, huge complexes, many of which are now mostly or completely abandoned, looking like the ultimate Victorian nightmare halls from another era. For over a hundred years, these unique facilities, these Insane Asylums, were the place where the state took charge of the “indigent insane,” and other people judged to have major psychological problems. At their peak in the late 1940s, there were over 260 in the USA, with more than half a million resident patients. With the development of psycho-active drugs, and mandated changes in patient care practices (outlawing the use of patient labor, something these facilities depended on, as they were largely self-sufficient in many of their operations), these hospitals became oversized, and outdated. Nice explanatory essay by the photographer, and an introduction by Oliver Sacks.

Spaced Out: Crash Pads, Hippie Communes, Infinity Machines, and other Radical Environments of the Psychadelic Sixties, by Alastair Gordon, Rizzoli, 2008
Organic architectural experiments, LSD, Electric Circuses, domes, zomes, sheds, blobs, Jersey Devils, inflatables, and lots of naked people dancing around and in tubs together – while this may sound like college to some of us, it allegedly was life for a bunch of influential cultural figures between 1966 and 1970, when places like Morning Star Ranch, Libre, Lama, Drop City, Solux, and Millbrook housed experiments in perception, living, and being. These places and people are depicted and described in this sympathetic sort of retro scrapbook-style $65 Rizzoli tome. Fun, but maybe the hippies never went away, they just got practical.

The End of New York, by Jean Kahler and Jessica Rowe
Elevator Alley, by Michael Cook and Andrew Emond
Grossinger’s: City of Refuge and Illusion, by Jonathan Haebner
Furnace Press, 2010
These three similarly bound and styled small volumes are Furnace Press’s Decomposition Series, books 1, 2 and 3, respectively, and are treasures of search and discovery. They represent a form of urban exploration that is thoughtful, engaged, and literate, not just out for a thrill. We look forward to the next batch!

THANKS TO OUR FRIENDS AND SUPPORTERS

The CLUI would like to thank the following for their substantial assistance and support of things covered in this newsletter:
The Annenberg Foundation; The Andy Warhol Foundation for the Visual Arts; The Department of Cultural Affairs, City of Los Angeles; Los Angeles County Metropolitan Transportation Authority; The Orphiflamme Foundation; Creative Capital.

We’d like to thank for their assistance with Digging Vermont:
Luca Mannolini, Joel Blumenthal, and Todd Robertson

We would also like to thank those of you who have sent individual donations, which also are substantially important to us, and an indication of your interest and support.

CLUI CORPS

Matthew Coolidge, Sarah Simons, Steve Rowell, Ben Loescher, Aurora Tang, Ryan McKinley, Erik Knutzen, Philip Weil, Joe Potts, Steve Badgett, Marina McDougall, Rachel Portenstein, Bee Harris, Jed Lackritz, Rob Ray, Deborah Stratman, Jesse Stiles, John Reed
Newsletter Editors: Matthew Coolidge, Sarah Simons, Aurora Tang
Welcome to issue #34 of the annual report of the CLUI. You will notice a nice wide geographic spread of articles in it, from Vermont, to Florida, to California, and the Center of the USA in Kansas, as well as our usual reports from our field offices in Texas, New Mexico, Utah, and the Mojave Desert. We are also looking up, into space, through its terrestrial equivalents such as rocket launch sites, as we perceive a continued need to appreciate and understand the constellation of orbiting assets that make the information age possible. There are changes coming as space access continues its privatization.

Also, two recent significant events affecting the legacy of the CLUI are discussed here: The establishment of the Morgan Cowles Archive to manage and maintain our image resources, and the acquisition of the archives of our Wendover Residence Program by the Center for Art+Environment in Reno. Meanwhile, our search for a bunker of our own continues.

Visitors to the exhibit hall in Los Angeles will see a change made in the new year. The space has become a bit of a lobby lounge, as well as bookshop and visitor center. We have made it more comfortable and accommodating to visitors – you can sit on padded furniture and watch our current programs and projects flash by on a multi-screen media wall display. Stop by during our open hours if you are in town, and see what’s up on this changing digital display.

On the horizon for the coming year are exhibits about the New Jersey Meadowlands in the summer of 2011, and exhibits on surveying, waterfalls, underground space, scrap metal – and more on Florida, a place where people end up. We will be endeavoring to keep our online existence more up-to-date, so you should see some changes on that front too. And so we go, down the road of time and place together. And, as always, thank you for being there!

- Lay of the Land Editors
Orientation sign, Cape Canaveral. CLUI photo