National Park Service
Cultural Landscapes Inventory

2011

Edison Laboratory Complex
Thomas Edison National Historical Park

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Inventory Summary

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Purpose and Goals of the CLI

The Cultural Landscapes Inventory (CLI), a comprehensive inventory of all cultural landscapes in the national park system, is one of the most ambitious initiatives of the National Park Service (NPS) Park Cultural Landscapes Program. The CLI is an evaluated inventory of all landscapes having historical significance that are listed on or eligible for listing on the National Register of Historic Places, or are otherwise managed as cultural resources through a public planning process and in which the NPS has or plans to acquire any legal interest. The CLI identifies and documents each landscape's location, size, physical development, condition, landscape characteristics, character-defining features, as well as other valuable information useful to park management. Cultural landscapes become approved CLIs when concurrence with the findings is obtained from the park superintendent and all required data fields are entered into a national database. In addition, for landscapes that are not currently listed on the National Register and/or do not have adequate documentation, concurrence is required from the State Historic Preservation Officer or the Keeper of the National Register.

The CLI, like the List of Classified Structures, assists the NPS in its efforts to fulfill the identification and management requirements associated with Section 110(a) of the National Historic Preservation Act, National Park Service Management Policies (2006), and Director's Order #28: Cultural Resource Management. Since launching the CLI nationwide, the NPS, in response to the Government Performance and Results Act (GPRA), is required to report information that respond to NPS strategic plan accomplishments. Two GPRA goals are associated with the CLI: bringing certified cultural landscapes into good condition (Goal 1a7) and increasing the number of CLI records that have complete, accurate, and reliable information (Goal 1b2B).

Scope of the CLI

The information contained within the CLI is gathered from existing secondary sources found in park libraries and archives and at NPS regional offices and centers, as well as through on-site reconnaissance of the existing landscape. The baseline information collected provides a comprehensive look at the historical development and significance of the landscape, placing it in context of the site's overall significance. Documentation and analysis of the existing landscape identifies character-defining characteristics and features, and allows for an evaluation of the landscape's overall integrity and an assessment of the landscape's overall condition. The CLI also provides an illustrative site plan that indicates major features within the inventory unit. Unlike cultural landscape reports, the CLI does not provide management recommendations or

treatment guidelines for the cultural landscape.

Inventory Unit Description:

As part of Thomas Edison National Historical Park, the Edison Laboratory Complex, hereafter Laboratory Complex, is located in the township of West Orange, New Jersey, approximately one mile east of the Glenmont Estate, Thomas Edison's home in Llewellyn Park. The Laboratory Complex, situated within an urban landscape dominated by residential and light industrial buildings, consists of 5.58 acres of historic (3.19 acres) and non-historic (2.39 acres) land. The historic portion of the complex contains the Edison Laboratories site, and a portion of Edison's original National Phonograph Works property. These parcels of land were once collectively part of a larger complex called the West Orange Plant. The historic portion of the property is dominated by several one to three story masonry and concrete buildings and structures including the Main Laboratory, Power House, Physics Laboratory, Chemical Laboratory, Chemical Storage/Pattern Shop, Metallurgical Building, Black Maria, Water Tower, Underground Storage Vault, and three smaller vaults, linked together by paved corridors and a courtyard. The remainder of the historic area is mostly open lawn with a few plantings of hedges and trees. The non-historic parcel, referred to as the Maintenance Area, is located adjacent to the Laboratories across Main Street and includes a maintenance building and visitor parking.

Following the designation of the Glenmont Estate, the home of Thomas and Mina Edison, as Edison Home National Historic Site in 1955, the Edison Laboratories site was established as the Edison Laboratory National Monument in 1956. The Glenmont Estate and the Laboratories were both redesignated as Edison National Historic Site in 1962, and later changed to Thomas Edison National Historical Park in 2009.

HISTORICAL OVERVIEW

By the end of the 1880s, Thomas Alva Edison (1847-1931) was America's leading inventor, having invented the phonograph and the first practical light bulb in the 1870s. In 1887, after spending years at his Menlo Park, New Jersey laboratory and some time in Manhattan, Edison built a new lab in West Orange, New Jersey. Edison envisioned his new Laboratory as a facility where experimental prototypes could be quickly developed for subsequent mass production. Following the construction of the Laboratories, Edison also began to build manufacturing facilities such as the Edison Phonograph Works adjacent to the Laboratories. By the time of Edison's death in 1931 the manufacturing companies and the Edison Laboratories together spanned 26.26 acres and were known collectively as the West Orange Plant (CLR, 1996: 1-3).

During the year 1886, Edison had spent most of his time supervising the operation of the Lamp Works, one of his industries located in Harrison, New Jersey. At the same time Edison began to make plans for a new lab close to his Llewellyn Park home. He wanted a rural site away from the noise and distraction of the city, yet close enough to New York City to draw on its materials, workers, and investment capital. By January 1886 Edison had sketched preliminary designs for a large ornate laboratory building (CLR, 1996: 1-3).

Edison soon abandoned these initial ornate plans and began sketching a series of more functional structures. Edison called upon Charles Batchelor, a close personal friend and associate, to hire an

architect to formalize his designs and oversee their construction. Batchelor chose Henry Hudson Holly, the well-known New York architect who had designed Glenmont, his home. Holly was replaced mid-way through the project by Joseph Taft, a New York City architect, who oversaw construction until the completion of the Laboratories in December 1887. He later designed and oversaw the construction of the Physics Laboratory (No. 1), Chemical Laboratory (No. 2), Chemical Storage and Pattern Shop (No. 3), and Metallurgical Building (No. 4) (CLR, 1996: 1-3).

The Edison Laboratories began operating in 1887. All of the buildings within the complex, specifically the Physics Laboratory (No.1), Chemical Laboratory (No. 2), Chemical Storage and Pattern Shop (No. 3), Metallurgical Building (No. 4), Main Laboratory (No. 5), and Power House (No. 6), were arranged in a hierarchical circulation system based on two components: a main corridor and secondary corridors. Utility lines and storm water drainage were installed. Two years after the Edison Laboratories were completed a Gate House (No.9) was constructed at the Valley Road (now Main Street) entry, partially obscuring the Edison Laboratories most prominent view. Following the development of the Laboratories, construction began on the adjacent Edison Phonograph site. The experimental activity and the construction were almost completely halted during the financial setbacks of the Depression and Edison's failed ore-milling project. Toward the end of the 1890s, the progress of the Laboratories evolution had again begun to move forward, and by 1899 the Edison Laboratories and Edison Phonograph Works were together known as the West Orange Plant (CLR, 1996: 25-26).

The change in Edison's focus from the late 1890s ore-milling project to the phonograph and storage battery project proved to be a lucrative decision, and one which paved the way for the West Orange Plant's most active times and witnessed an expansion never to be repeated. The expansion involved the acquisition of over forty-three properties by 1908. As the land was acquired, a building boom added over sixty new buildings to the West Orange Plant. The larger buildings were constructed of concrete produced by Edison's Portland Cement Company. Utility systems were similarly improved and expanded and included the construction of a new power house and boiler house. While the West Orange Plant was experiencing a tremendous growth in size, the Laboratories also changed with the addition of new buildings, both temporary and permanent, and improvements to utilities. Buildings added at this time included the Blacksmith's Shop (No.7), Garage (No. 10), Building 11 (No.11), Pattern Shop (No.12), Experimental Studio (No.13), Gold Plating Building (No. 22), Small Storage Vault (No. 8), and a Glass House. The busy activity at the West Orange Plant was so intense during this period that it influenced the surrounding community where many of its employees lived. To help address the needs of West Orange's growing population several new utilities and services were established within the town, such as public water, sewage disposal, and fire protection. The Plant's growth slowed abruptly in 1914 when a tremendous fire swept through the site, devastating a large portion of the Plant (CLR, 1996: 36).

The 1914 fire at the West Orange Plant was a turning point in the plant's history, and within three years all buildings destroyed or damaged by the fire were reconstructed and industrial activity at the West Orange plant skyrocketed. This increase in activity was caused in part by America's involvement in World War I. Wartime products and industrial supplies kept Edison and his staff quite busy at the West Orange Plant. Following the war, however, activity decreased dramatically as a result of the postwar

depression. Many of the workers at the West Orange Plant were laid off and difficult financial years followed. At this time, research and experimentation declined and the manufacturing of low-risk products became the West Orange Plant's primary focus. The Edison Laboratories was transformed from an active research facility into a simple, routine production facility (CLR, 1996: 54-55).

The Edison Laboratories experienced several minor physical changes resulting from the 1914 fire. All wooden window sashes were replaced by steel sashes with ribbed-and-wire glass and several emergency exits were installed in the Main Laboratory. Other changes included the replacement of the picket fence around the Laboratories with a metal chain link fence, establishment of plant material such as privets and ground cover along the Laboratories' western façade, and the introduction of exhibits, such as railroad trucks in front of the Laboratories. The last years of Edison's life were devoted to the search for a domestic source of rubber. Despite declining health, he continued working in the laboratory until a few months before his death on October 18, 1931 (CLR, 1996: 54-55).

After Edison's death the site was managed by the Thomas A. Edison, Incorporated (TAE Inc.), an administrative entity created earlier by Edison in 1911. Although TAE Inc. continued to operate the West Orange Plant as a manufacturing complex, the Laboratories themselves were closed and eventually used as a storage facility. Production at the West Orange Plant declined steadily under the management of TAE Inc. In 1939 TAE Inc. began efforts to turn the Laboratories into a museum. The facility would commemorate Edison and his accomplishments, focusing on his private library in the Main Laboratory building. Along with these efforts came several changes at the Laboratories. The character of the site changed from a facility cluttered from the continually changing experiments to a highly manicured park setting. In 1955 TAE Inc. donated 1.51 acres of land to the National Park Service, including the Edison Laboratories and a small portion of land from the National Phonograph Works (CLR, 1996: 67).

In the 1960s, urban renewal plans were developed and resulted in the demolition of all of the West Orange Plant except the Laboratories and the Storage Battery Complex. Since 1974, several adjacent parcels of land, formerly part of the West Orange Plant, were acquired by the National Park Service. In addition, improvements were made to the Laboratory Complex between 2003 and 2009. The work included the rehabilitation of the laboratory building; upgrades to the electrical and fire protection systems; relocation of Building 11 (No. 11) from the Henry Ford Museum and Greenfield Village in Michigan; removal of non-historic vegetation, such as the spruce trees along Main Street; installation of interpretative media; and improvements to the vehicular and pedestrian circulation.

Today at Thomas Edison National Historical Park, the Laboratory Complex is the primary resource that helps tell the story of Thomas Edison's professional life in combination with his home life at the Glenmont Estate. The Laboratory Complex consists of the Edison Laboratories site and a portion of the original National Phonograph Works property. A non-historic parcel to the west includes a maintenance building and parking lot for staff and visitors.

SIGNIFICANCE SUMMARY

The Laboratory Complex, part of the Thomas Edison National Historical Park, is significant under Criterion A within the areas of science and industry for the scientific achievements of Thomas Edison and as a prototype for many great industrial research laboratories today. The Complex made the concept of team-based research and development a model for other inventors and companies. The Laboratory Complex is also significant under Criterion B for its association with the productive life and work of Thomas Alva Edison. Working on the property between 1887 and 1931, Edison possessed an unsurpassed technological genius and industriousness that made him preeminent among the inventors of the 20th century. The period of significance for the property begins in 1887 with the establishment of the Edison Laboratories, and extends to 1931, the year of Thomas Edison's death.

ANALYSIS AND EVALUATION SUMMARY AND CONDITION

Despite some changes in vegetation, buildings and structures, and small-scale features, the Laboratory Complex still retains numerous historic laboratory buildings and structures surrounded by open lawn with few plantings. The most important landscape characteristics are circulation (main and secondary corridors, courtyard, and concrete sidewalk remnants), vegetation (Mazzard cherry, eastern arborvitae row, lawn between satellite laboratory buildings and along Main Street and Lakeside Avenue, and railroad truck groundcovers), buildings and structures (Laboratories Nos. 1-9, 11, 32-34, and power transmission poles), views (Main Street view) and small –scale features (drainage system-concrete gutter, utility structures, pavement test circle, boundary fences and gates, electric railroad trucks, a coal remnant, administration building stairs, Portland cement sidewalk plaque, and concrete wall). The cultural landscape within the Laboratory Complex retains overall integrity of location, design, materials, workmanship, and association. Integrity of setting and feeling is slightly diminished.

The Laboratory Complex is in good condition, showing no clear evidence of major negative disturbance and deterioration by natural and/or human forces. Between 2003 and 2009, renovations were made to the Laboratory Complex. The work included the rehabilitation of the laboratory buildings, relocation of Building 11 (No. 11) from the Henry Ford Museum and Greenfield Village in Michigan, and improvements to the vehicular and pedestrian circulation. As a result, the site's cultural and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

Site Plan

Site plan for Edison Laboratory Complex.

Property Level and CLI Numbers

Inventory Unit Name:	Edison Laboratory Complex
Property Level:	Landscape
CLI Identification Number:	975695
Parent Landscape:	975695

Park Information

Park Name and Alpha Code:	Thomas Edison National Historical Park -EDIS
Park Organization Code:	1840
Park Administrative Unit:	Edison National Historic Site

CLI Hierarchy Description

In addition to the Laboratory Complex, Thomas Edison National Historical Park includes the Glenmont Estate, the home of Thomas and Mina Edison.

Concurrence Status

Inventory Status: Complete

Completion Status Explanatory Narrative:

In April 2011, existing conditions at the Laboratory Complex were inventoried and mapped. Historical Landscape Architect Michael Commisso with the National Park Service's Olmsted Center for Landscape Preservation in Boston completed the field work. The park contact for the Cultural Landscapes Inventory is Michelle Ortwein, Supervisory Museum Curator. She can be reached by telephone at (973) 736-0550 ext. 31 or by email at Michelle_Ortwein@nps.gov.

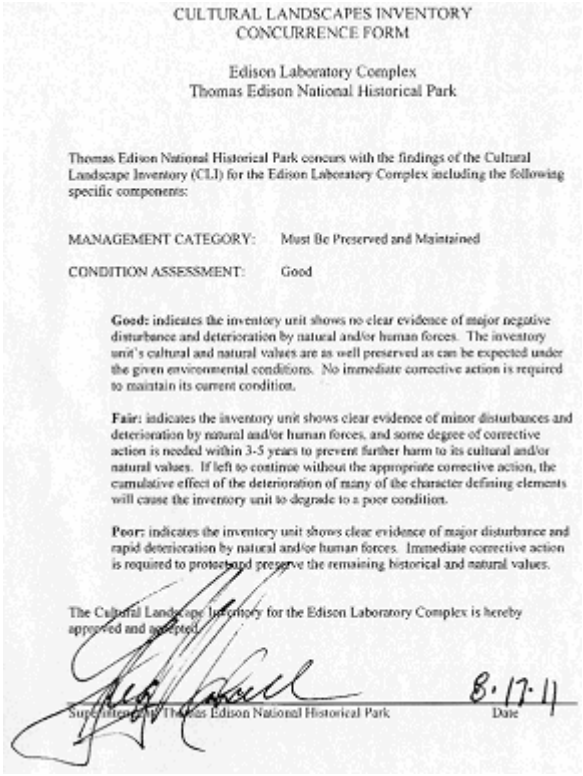
Concurrence Status:

Park Superintendent Concurrence:	Yes
Park Superintendent Date of Concurrence:	08/17/2011
National Register Concurrence:	Eligible -- SHPO Consensus Determination
Date of Concurrence Determination:	09/22/2011

National Register Concurrence Narrative:

The State of New Jersey Historic Preservation Office (SHPO) concurred with the findings of the CLI on September 22, 2011. The SHPO had no additional comments on the report.

Concurrence Graphic Information:



CULTURAL LANDSCAPES INVENTORY
CONCURRENCE FORM

Edison Laboratory Complex
Thomas Edison National Historical Park

Thomas Edison National Historical Park concurs with the findings of the Cultural Landscape Inventory (CLI) for the Edison Laboratory Complex including the following specific components:

MANAGEMENT CATEGORY: Must Be Preserved and Maintained

CONDITION ASSESSMENT: Good

Good: indicates the inventory unit shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. The inventory unit's cultural and natural values are as well preserved as can be expected under the given environmental conditions. No immediate corrective action is required to maintain its current condition.

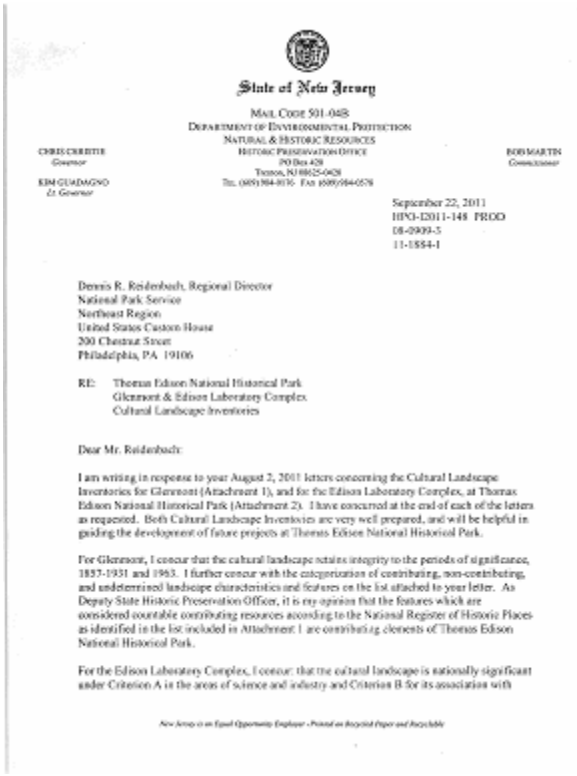
Fair: indicates the inventory unit shows clear evidence of minor disturbances and deterioration by natural and/or human forces, and some degree of corrective action is needed within 3-5 years to prevent further harm to its cultural and/or natural values. If left to continue without the appropriate corrective action, the cumulative effect of the deterioration of many of the character defining elements will cause the inventory unit to degrade to a poor condition.

Poor: indicates the inventory unit shows clear evidence of major disturbance and rapid deterioration by natural and/or human forces. Immediate corrective action is required to protect and preserve the remaining historical and natural values.

The Cultural Landscape Inventory for the Edison Laboratory Complex is hereby approved and accepted.

Superintendent, Thomas Edison National Historical Park — Date 8.17.11

Park concurrence was received on August 17, 2011.



State of New Jersey

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DEPARTMENT OF ENVIRONMENTAL PROTECTION
NATURAL & HISTORIC RESOURCES
HISTORIC PRESERVATION OFFICE
PO Box 420
Trenton, NJ 08625-0420
Tel. (609)984-0176 Fax (609)984-0578

CHRIS CHRISTIE
Governor

KIM GUADAGNO
Lt. Governor

BOB MARTIN
Commissioner

September 22, 2011
HPO-I2011-148 PROD
08-0909-5
11-1554-1

Dennis R. Reidenbach, Regional Director
National Park Service
Northeast Region
United States Custom House
200 Chestnut Street
Philadelphia, PA 19106

RE: Thomas Edison National Historical Park
Glenmont & Edison Laboratory Complex
Cultural Landscape Inventories

Dear Mr. Reidenbach:

I am writing in response to your August 2, 2011 letters concerning the Cultural Landscape Inventories for Glenmont (Attachment 1), and for the Edison Laboratory Complex, at Thomas Edison National Historical Park (Attachment 2). I have concurred at the end of each of the letters as requested. Both Cultural Landscape Inventories are very well prepared, and will be helpful in guiding the development of future projects at Thomas Edison National Historical Park.

For Glenmont, I concur that the cultural landscape retains integrity to the periods of significance, 1857-1931 and 1963. I further concur with the categorization of contributing, non-contributing, and undetermined landscape characteristics and features on the list attached to your letter. As Deputy State Historic Preservation Officer, it is my opinion that the features which are considered countable contributing resources according to the National Register of Historic Places as identified in the list included in Attachment 1 are contributing elements of Thomas Edison National Historical Park.

For the Edison Laboratory Complex, I concur: that the cultural landscape is nationally significant under Criterion A in the areas of science and industry and Criterion B for its association with

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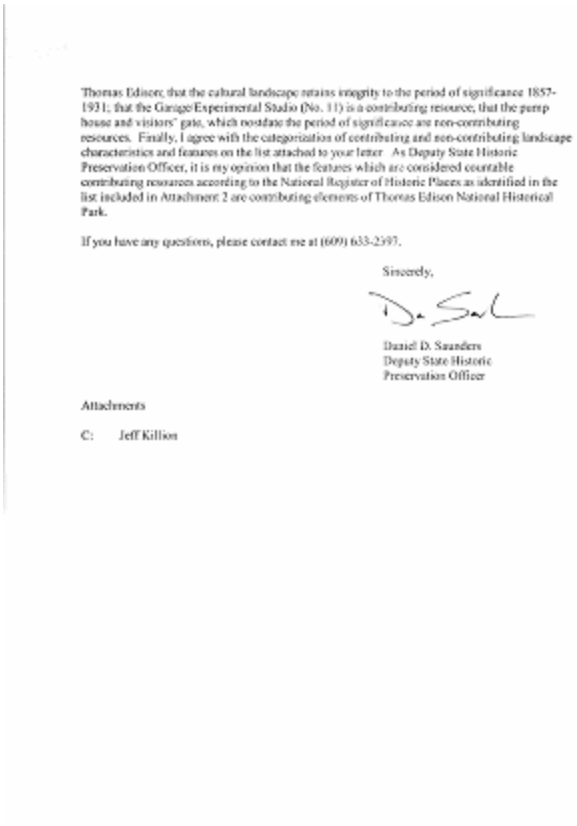

Thomas Edison; that the cultural landscape retains integrity to the period of significance 1857-1931; that the Garage/Experimental Studio (No. 11) is a contributing resource; that the pump house and visitors' gate, which postdate the period of significance are non-contributing resources. Finally, I agree with the categorization of contributing and non-contributing landscape characteristics and features on the list attached to your letter. As Deputy State Historic Preservation Officer, it is my opinion that the features which are considered countable contributing resources according to the National Register of Historic Places as identified in the list included in Attachment 2 are contributing elements of Thomas Edison National Historical Park.

If you have any questions, please contact me at (609) 633-2397.

Sincerely,

Daniel D. Saunders
Deputy State Historic
Preservation Officer

Attachments

C: Jeff Killion

SHPO concurrence was received on September 22, 2011.

Geographic Information & Location Map

Inventory Unit Boundary Description:

The 5.58-acre Laboratory Complex consists of two adjacent parcels, the historic laboratory and maintenance area. The historic laboratory (Block 115, Lots 1, 4, and 30.01) is bounded by Lakeside Avenue to the south, Main Street to the west, and Alden Street to the north, The southern portion of the parcel is composed of extant laboratory buildings associated with the historic period (1887-1931), while the northern portion is the former location of production facilities for Edison products and no longer contains any above-ground structures or buildings. The maintenance area (Block 89, Lot 1.03 and Block 114, Lots 230-234, 234.01, 235, and 236) has no direct association with Thomas Edison. It is directly across Main Street and is west of the Edison Laboratories. It is bounded by Main Street to the east and Edisonia Terrace to the north.

State and County:

State: NJ

County: Essex County

Size (Acres): 5.58

Boundary UTMS:

Source:	USGS Map 1:24,000
Type of Point:	Area
Datum:	NAD 27
UTM Zone:	18
UTM Easting:	563,900
UTM Northing:	4,515,640
Source:	USGS Map 1:24,000
Type of Point:	Area
Datum:	NAD 27
UTM Zone:	18
UTM Easting:	564,720
UTM Northing:	4,514,700
Source:	USGS Map 1:24,000
Type of Point:	Area
Datum:	NAD 27
UTM Zone:	18
UTM Easting:	564,940
UTM Northing:	4,515,290
Source:	USGS Map 1:24,000
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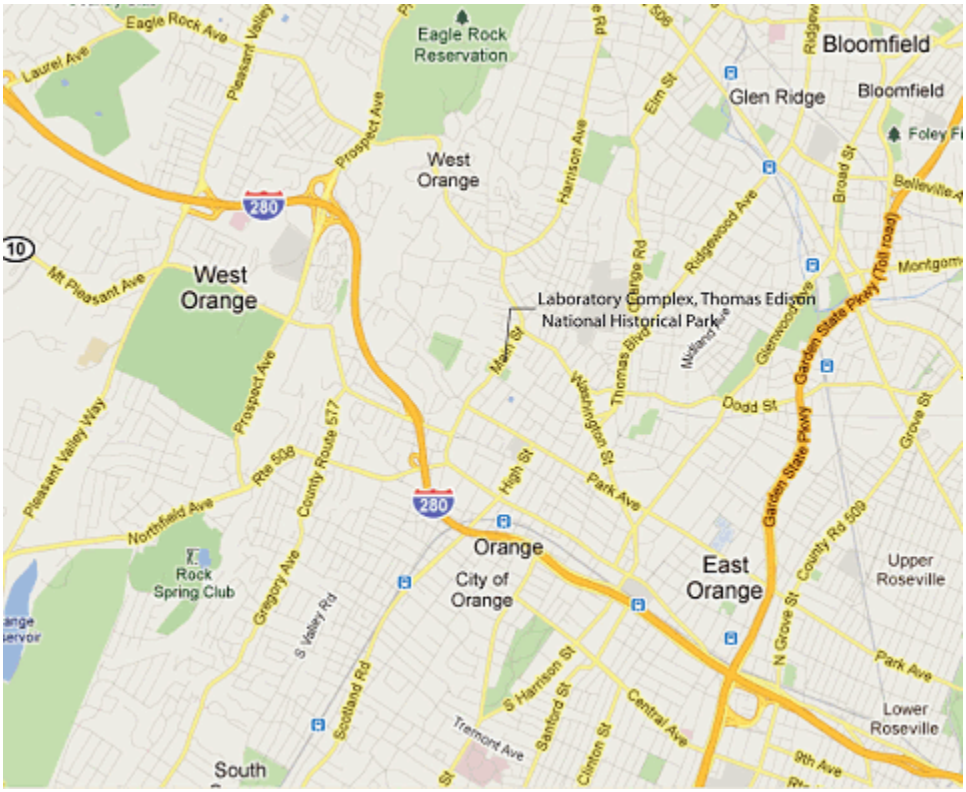
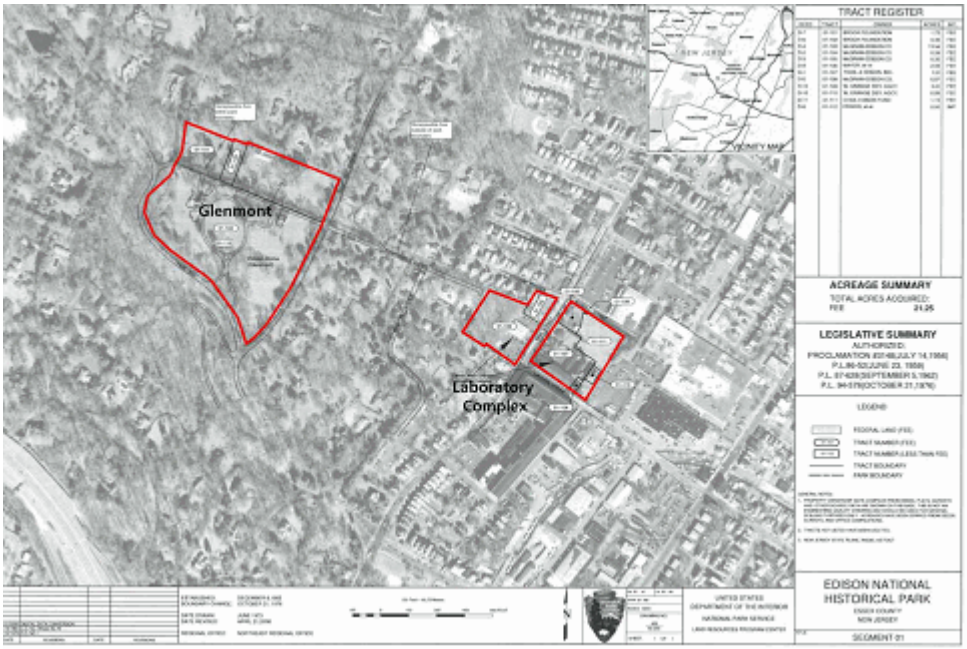
Datum:	NAD 27
UTM Zone:	18
UTM Easting:	563,700
UTM Northing:	4,515,000

Location Map:



Location Map. Location of the Laboratory Complex, Thomas Edison National Historical Park and Newark, New Jersey (Google Map, 2009, annotated by the Olmsted Center for Landscape Preservation, hereafter OCLP).



Location Map. Thomas Edison National Historical Park legislative boundary, which includes the Laboratory Complex (OCLP, 2011).

Regional Context:

Type of Context: Cultural

Description:

The Laboratory Complex today is a well preserved landscape that reflects the scientific achievements of Thomas Edison and provides tangible evidence of the country's transition from an industrial economy to an information-rich, globally competitive economy. For forty-four years, from 1887 to 1931, Edison and his "muckers" developed many devices, such as the motion picture camera and the nickel-iron alkaline storage battery, and refined others including the phonograph. The complex eventually became the model for the modern private research and development lab. The 5.58-acre Laboratory Complex includes numerous laboratory buildings and structures separated by paved drives and walks, and surrounded by mostly open lawn with minimal plantings. The property is enclosed by a chain-link fence (see Regional Landscape Context graphic).

Type of Context: Physiographic

Description:

The Laboratory Complex is located within the Piedmont Province region, which extends from the Hudson River in New York to Alabama and has a maximum width of about 125 miles. It is divided into Upland and Lowland sections, with New Jersey falling into the Piedmont Lowland physiographic province. The Piedmont Lowland physiographic province, also known as the Newark Basin or Triassic Lowlands, is characterized as having gently undulating terrain that gradually slopes from the New Jersey Highlands to the Coastal Plain. Its rolling topography is occasionally interrupted by ridges of erosion-resistant igneous rock types, diabase and basalt, commonly called traprock. The most prominent traprock ridges in this region are the three Watchung Mountains (also known as the Orange Mountains). The Laboratory Complex is located on the southeastern slope of the easternmost range of the Watchung Mountains.

Type of Context: Political

Description:

The Laboratory Complex, part of Thomas Edison National Historical Park, is located in the township of West Orange. West Orange is a residential/industrial community of roughly 12.1 square miles with a population of 46,207. The township is located in Essex County, New Jersey's most populated county, with 783,969 residents. The majority of the county's residents live in the city of Newark, located just three miles east of the park. The Manhattan borough of New York City lies approximately fourteen miles to the east.

Regional Landscape Context. Current aerial view of the Laboratory Complex, Thomas Edison National Historical Park showing its context within Llewellyn Park (NASA aerial c.2007, reproduced from Google Earth, annotated by OCLP).

Management Information

General Management Information

Management Category: Must be Preserved and Maintained

Management Category Date: 08/17/2011

Management Category Explanatory Narrative:

The Laboratory Complex meets the criteria for the "Must be Preserved and Maintained" management category. The preservation of the site is specifically identified in the legislation of Thomas Edison National Historical Park, which calls for the commemoration of Thomas Alva Edison through the preservation of his research, Laboratory Complex, estate, and their collections (Secretarial Order F.R. 9347, Presidential Proclamation 3148 and P.L. 87-628).

NPS Legal Interest:

Type of Interest: Fee Simple

Public Access:

Type of Access: Unrestricted

Explanatory Narrative:

Visitor services are currently located in Physics Laboratory (No. 1), which serves as a gift shop and orientation area for the Laboratory Complex. The park charges an entrance fee that includes access to the Laboratory Complex and the Glenmont Estate. The grounds are accessible by foot and many laboratory buildings are open to the public. As part of the 2003-2009 improvements, the addition of an elevator along the east elevation of the Main Laboratory (No. 5) has greatly enhanced accessibility within the building. Interpretative signage and audio tours are available for visitors.

Adjacent Lands Information

Do Adjacent Lands Contribute? Yes

Adjacent Lands Description:

The Storage Battery Factory, located adjacent to the Laboratory Complex, is the only remaining large manufacturing building of the West Orange Plant. The building was constructed between 1913 and 1914 and is currently privately owned.

National Register Information

Existing National Register Status

National Register Landscape Documentation:

Entered Inadequately Documented

National Register Explanatory Narrative:

On July 14, 1956, the Laboratory Complex was proclaimed Edison Laboratories National Monument. It was later combined with Edison Home National Historic Site to form Edison National Historic Site on September 5, 1962. As part of the Omnibus Public Land Management Act of 2009 (Public Law 111-11, Section 7110), Edison National Historic Site was redesignated as the Thomas Edison National Historical Park in March 2009.

Thomas Edison National Historical Park (formerly Edison National Historic Site) was listed in the National Register of Historic Places on October 15, 1966, with the passage of the National Historic Preservation Act. National Register documentation for the park was accepted on March 10, 1980. The nomination form identified significance under Criterion A in the areas of industry and science and Criterion B for its association with the scientific achievements and the private life of Thomas Alva Edison. The period of significance was listed as beginning in 1887, the construction of the laboratory complex and ending in 1931, the year of Thomas Edison's death. The documentation enumerated numerous specialized buildings at the laboratory complex: Physics Laboratory (No. 1), Chemical Laboratory (No. 2), Chemical Stockroom and Pattern Shop (No. 3), Metallurgical Laboratory, (No. 4), Main Laboratory (No. 5), Power House-Boiler Room (No. 6), Blacksmith Shop (No. 7), Small Storage Vault (No. 8), Gate House (No. 9), Main Storage Vault (No. 12), Black Maria (No. 13), Diamond Disc Vault (No. 32), Blue Amberol Vault (No. 33), and Water Tower (No. 34 in National Register, No. 20 in LCS). The documentation also described the grounds of the complex, including the paved entrance drive; two paved parking areas; graveled areas between Buildings 2, 3, and 4; a narrow area of grass bisected by a narrow concrete walk east of No. 4; grass with shrubs and trees over the remaining open space; and chain link fencing along the streets. The documentation stated that "with exception of the two paved parking areas, this condition approximates the historic scene, but little research has been done on this subject to determine the historic appearance with any degree of certainty."

In a letter dated July 1, 1996, the New Jersey State Historic Preservation Office (SHPO) concurred with the National Park Service's evaluations of the site's historic resources, as part of the List of Classified Structures program update. In addition to the laboratory complex's previously listed contributing resources, the New Jersey SHPO agreed with the National Park Service findings that the Black Maria (No. 13) motion picture studio was noncontributing because it did not meet National Register criteria for reconstructed properties, and that the Main Storage Vault (No. 12) was also noncontributing because it was constructed after Edison's death. The New Jersey SHPO also agreed that the boundary fence and gates, power transmission poles, visitors' gate, and pump house, were contributing resources.

According to research conducted for this CLI and the categories of National Register documentation outlined in the "CLI Professional Procedures Guide," the Laboratory Complex is inadequately

documented based on the existing National Register documentation and previous correspondence with the New Jersey SHPO. While most of the site's major buildings have been documented, important historic resources related to circulation, vegetation, buildings, views, and small-scale features have not yet been determined eligible for the National Register. Therefore, for purposes of the CLI, the property is considered "Entered-Inadequately Documented."

Existing NRIS Information:

Name in National Register:	Edison National Historic Site
NRIS Number:	66000052
Primary Certification Date:	03/10/1980

National Register Eligibility

National Register Concurrence:	Eligible -- SHPO Consensus Determination
Contributing/Individual:	Individual
National Register Classification:	Site
Significance Level:	National
Significance Criteria:	A - Associated with events significant to broad patterns of our history
Significance Criteria:	B - Associated with lives of persons significant in our past

Period of Significance:

Time Period:	AD 1887 - 1931
Historic Context Theme:	Expanding Science and Technology
Subtheme:	Technology (Engineering and Invention)
Facet:	Energy Conversion, Utilization And Distribution
Time Period:	AD 1887 - 1931
Historic Context Theme:	Expanding Science and Technology
Subtheme:	Technology (Engineering and Invention)
Facet:	Information Processing, Transmission, And Recording

Area of Significance:

Area of Significance Category:	Science
Area of Significance Subcategory:	None
Area of Significance Category:	Industry
Area of Significance Subcategory:	None

Statement of Significance:

The Laboratory Complex, part of the larger Thomas Edison National Historical Park, is significant under Criterion A within the areas of science and industry for the scientific achievements of Thomas Edison and as a prototype for many great industrial research laboratories today. The Complex made the concept of team-based research and development a model for other inventors and companies. The Laboratory Complex is also significant under Criterion B for its association with the productive life and work of Thomas Alva Edison who worked on the property between 1887 and 1931, who possessed an unsurpassed technological genius and industriousness that made him preeminent among the inventors of the 20th century. The overall period of significance for the property begins in 1887 with the establishment of the Laboratory Complex, and extends to 1931, the year of Thomas Edison's death.

NATIONAL REGISTER CRITERION A: Science and Industry.

The Laboratory Complex is nationally significant under Criterion A in the areas of science and industry for the scientific achievements of Thomas Edison. Shortly after the purchase of the Glenmont Estate in 1886, Thomas Edison built a laboratory approximately one mile east of his home in West Orange. Completed in November 1887, the Laboratory Complex served as the inventor's headquarters for the remaining forty-four years of his life. At the Laboratory, Edison improved the phonograph, invented the first successful motion picture camera, and developed a host of other important inventions and patents. In addition to his inventions and his industrial accomplishments, Edison made two significant discoveries in pure science. One was "etheric force," the electromagnetic waves later used in radio transmission; the other, a fundamental phenomenon of electronics which has since become known as the "Edison Effect" and which led to a worldwide advance in radio communications and space technology (National Register of Historic Places Nomination for Edison National Historic Site, Sec.8, pg. 1).

While Edison's genius spawned many formative inventions of the modern world, his greatest invention may well have been the first industrial research laboratory, a prototype for today's corporate research and development centers. When Edison built the Laboratory Complex in 1887, his goal was to have on hand everything needed to quickly and cheaply perfect inventions and ready them for mass production. All the necessary tools, machines, materials, and skilled personnel would be housed within the complex. Edison originally planned to have the entire facility in one 250-foot long, three-story, rectangular laboratory building with a central courtyard and mansard roof. However, Edison altered his plans to a

more functional, less ornate design. The layout of the Laboratory Complex as constructed was intended to provide an efficient and effective operating facility. Following construction of the Main Laboratory (No. 5), four single-story, rectangular-shaped, satellite laboratories (Nos. 1-4) were built and aligned perpendicular to the Main Laboratory. The design and arrangement of the original five buildings formed a cohesive quadrangle, which created an internally focused facility with the day-to-day operations, especially experiments, out of the public's view.

Realizing that money was made not from selling patent rights or from royalties, but from the direct sale of the products to the public, Edison began building factories next to his Laboratory Complex to manufacture the finished products based on his inventions in 1888. These factories produced all the necessary parts for Edison inventions. In turn, most of the machinery used in the factory to manufacture the inventions was designed and machined in the Laboratory Complex. The finished products were distributed and sold around the country and abroad. Profits from the sale of these products were used to fund further research, to improve existing Edison inventions, and to allow Edison and his research staff to develop new ideas for inventions. The proximity of the factories to the Laboratory Complex helped speed up the invention process by making it possible to quickly put new inventions or improvements on the market. The Laboratory Complex was revolutionary, established as one of the first research and development laboratories, at one time filled with 200 employees from around the world (there were 10,000 employees in the factories). Edison had his researchers work in teams and his concept of taking an invention from idea, to prototype, to mass production in one place was unique.

NATIONAL REGISTER CRITERION B (Person): Thomas Edison.

The Laboratory Complex is nationally significant under Criterion B for its association with Thomas Alva Edison (1847-1931), an American inventor, scientist, and businessman who developed many devices and obtained 1,093 patents that significantly improved life around the world. At the Laboratory, Edison developed many of the devices around which modern life revolves, such as the motion picture camera and the nickel-iron alkaline storage battery. He refined the phonograph and made it the center of his worldwide business.

National Historic Landmark Information

National Historic Landmark Status: No

Chronology & Physical History

Cultural Landscape Type and Use

Cultural Landscape Type: Designed

Current and Historic Use/Function:

Primary Historic Function: Industrial/Processing/Extraction-Other

Primary Current Use: Museum (Exhibition Hall)-Other

Other Use/Function	Other Type of Use or Function
Museum (Curatorial) Storage	Both Current And Historic
Visitor Contact (Visitor Center)	Current
Maintenance Facility	Current
Interpretation Facility	Current

Current and Historic Names:

Name	Type of Name
Edison Laboratories	Both Current And Historic
West Orange Plant	Historic
Laboratory Unit	Current
Laboratory Complex	Current

Ethnographic Study Conducted: No Survey Conducted

Chronology:

Year	Event	Annotation
AD 1667	Inhabited	Prior to 1667, Hackensacks, tribe related to the Lenni Lenape, are active along the banks of the Passaic River to the east of the present day Laboratory site.
	Land Transfer	Colonists and Hackensacks sign a treaty giving the colonists a tract of land that includes Newark, Montclair, Bloomfield, Nutley, Belleville, Glen Ridge, and most of the Oranges.
AD 1886	Purchased/Sold	Thomas Edison purchases the Glenmont Estate from Arnold Constable & Company.

AD 1887	Purchased/Sold	Edison decides to construct a new laboratory to replace his Menlo Park facility. He purchases a rectangular shaped two-acre parcel of land at the corner of Valley Road and Lakeside Avenue. It is less than a mile east of the Glenmont Estate.
	Planned	Edison hires architect Henry Hudson Holly to design the new Laboratory Complex. Henry Hudson Holly also designed Glenmont. Shortly thereafter, Edison, unhappy with the workmanship, fires Holly and replaces him with local contractor Joseph Taft.
	Built	Main Laboratory (No. 5), Power House (No. 6), Physics Laboratory (No. 1), Chemical Laboratory (No. 2), Chemical Storage and Pattern Shop (No. 3), and Metallurgical Building (No. 4) are constructed to form the Edison Laboratories.
AD 1887 - 1889	Built	In response to a slight grade change on the property, a drainage system is incorporated onto the Edison Laboratories. A drainage trough is constructed along the northeast side of the main corridor (adjacent to the faces of the satellite laboratories) to carry the run-off southeast toward the rear of the property.
AD 1888	Built	A wood picket fence is constructed around the Edison Laboratories.
	Purchased/Sold	Edison acquires additional land adjacent to the Edison Laboratories for $12,500. The 5.5-acre Edison Phonograph Works parcel extends southeast from the Edison Laboratories.
AD 1889	Built	Photographic Building (no building number) is constructed on the recently purchased 5.5-acre parcel.
AD 1890	Built	Gate House (No. 9) is constructed.
AD 1893	Built	Black Maria Film Studio is constructed.

AD 1896 - 1908	Purchased/Sold	Edison creates the National Phonograph Company and begins purchasing surrounding land, beginning the West Orange plant's expansion. Between 1899 and 1908, approximately forty-three lots are acquired.
AD 1899 - 1900	Planted	Boston Ivy is planted along the northwest and southwest facades of the Main Laboratory. It eventually grows along the northwest façade of the Physics Laboratory.
	Built	Blacksmith's Shop (No. 7) is constructed.
AD 1899 - 1914	Built	Although the exact date of construction is unknown, between 1899 and 1914, two wood lean-tos are constructed along the southeast façade of the Chemical Laboratory (No.2).
	Expanded	West Orange Plant grows from 7.5 acres to 26.26 acres.
	Expanded	Several wells are installed throughout the Edison Phonograph Works property. The Edison Laboratories electrical system is also improved and expanded. Overhead steam lines are also added between 1899 and 1914.
	Altered	A new entry is added to the site at the rear of the Power House (No. 6). This entry is created to access the Edison Phonograph Works, not the Edison Laboratories. Along the northwest side of the new entrance, approximately 8 feet from the Power house, a concrete retaining wall is constructed.
AD 1900	Expanded	West Orange Plant (includes Edison Laboratories and Phonograph Works) begins mass producing the phonograph.
AD 1900 - 1914	Built	Between 1900 and 1914, a Glass House is constructed northeast of the Physics Laboratory.
AD 1911	Established	Thomas Alva Edison, Incorporated (TAE Inc.) is created to administer the combined resources of all of Edison's West Orange Plant facilities.
AD 1911 - 1919	Reconstructed	The Blacksmith's Shop (No. 7) is destroyed by fire and rebuilt in 1911. It is later enlarged in 1919.

AD 1911	Built	The Garage (No. 10) and Building 11 (No. 11) are constructed around 1911.
AD 1912	Built	The Gold Plating Building is constructed.
AD 1912 - 1913	Built	Small Storage Vault (No. 8) is constructed.
AD 1913 - 1914	Built	Storage Battery Building is constructed across from the Edison Laboratories on Lakeside Avenue to mass produce the storage battery.
AD 1914	Destroyed	The plant's growth continued until December 1914 when a major fire occurs at the site. 15 of the 22 Edison Phonograph Works' buildings were either severely damaged or completely destroyed. The Storage Battery Building was undamaged.
AD 1914 - 1931	Built	Although the date of construction is unknown, the Lakeside Avenue Vault is constructed between 1914 and 1931.
	Planted	A Mazzard Cherry tree, row of American Arborvitae, and several groups of privet shrubs are planted within the Edison Laboratories site. Groundcover around the two rail cars is also planted.
	Built	A pavement test circle is installed for testing stone, concrete, brick, metal, steel, and wood.
AD 1914 - 1919	Expanded	In response to World War I, the West Orange Plant manufactures new war products for the government. There is a rapid increase in the labor force. However, the work force decreased substantially following the war.
AD 1914 - 1915	Built	Blue Ambersol Vault (No. 33) and Disc Record Vault (No. 32) are constructed.
AD 1916	Built	Experimental Record Shed is constructed. Foundry is also constructed northeast of the Physics Laboratory.
AD 1916 - 1917	Built	Nickel Plating Building is constructed between the Foundry and the Copper Plating Building.

AD 1917	Built	The wood picket fence bordering the Edison Laboratories is replaced by a six-foot high chain-link fence. The wrought iron gates of the main entry on Valley Road are attached to two brick pillars with concrete cornices.
	Built	Rear Gate House is built at the southeast corner of the Metallurgical Building. It is used to monitor entry to the Edison Laboratories through the rear entrance.
	Moved	Railroad trucks used at Menlo Park are moved to the West Orange Plant. They are located in front of the Main Laboratory (No. 5) and Physics Laboratory (No. 1).
	Built	Ice House and Hose House are constructed.
	Reconstructed	By 1917, much of what was destroyed or damaged by the fire are repaired or replaced. The majority of the rebuilt buildings are located on the existing foundations.
	Built	The Bandstand is constructed by 1917 at the south corner of the Power House, overlooking Lakeside Avenue.
AD 1919	Altered	The Blacksmith Shop is enlarged in 1919.
AD 1920	Memorialized	A bronze war memorial plaque dedicated to the men of the Edison industries who died in World War I is installed on May 28, 1920. It is located on the southwest façade of the Main Laboratory (No. 5).
AD 1922 - 1927	Built	The Edison Laboratories water system is improved. A 75,000 gallon water tower is constructed in 1922 and several ground water outlets are installed by 1927. In addition the drainage swales along the southwest facades of the satellite laboratories are lined with poured concrete and several small drains are added along the building foundations, emptying into the swales.
AD 1930	Land Transfer	Edison sells the laboratory buildings to TAE Inc. for $165,000.
AD 1931	Memorialized	Thomas Edison dies at age 84.

AD 1931 - 1955	Planted	A row of Norway Spruce are planted along the Main Street side of the property.
	Paved	All vehicular routes within the Edison Laboratories are surfaced with asphalt, including the main corridor, the courtyard, and access corridors between the satellite labs.
	Altered	Wood ramps leading to the satellite laboratories are replaced with wider concrete ramps. In addition, a 90-foot section of the chain-link fence at the Lakeside Avenue entry to the Power House is replaced with a wrought-iron fence.
	Established	A new entrance gate is established on Alden Street for the National Phonograph Company to use as its main entry.
	Planted	Golden Canna is planted in several places on the site including the center of the pavement test circle and along the foundations of most of the buildings.
	Built	A concrete slab produced with Edison's Portland Cement is introduced as a display along Main Street.
AD 1935	Memorialized	A set of Japanese lanterns are given to the Laboratories as a tribute to Edison in 1935.
AD 1939 - 1955	Built	A new four-foot tall wood fence is installed along the rear of the satellite labs.
AD 1939 - 1940	Removed	The Garage (No. 10) and Building 11 (No. 11) are removed in 1939-1940 in preparation for the construction of the Underground Storage Vault. The Garage is demolished and Building 11 (No. 11) is disassembled and moved to the Henry Ford Museum and Greenfield Village in Dearborn, Michigan (it is returned to the site in 2002-2003).
AD 1940	Reconstructed	The Black Maria is reconstructed and later demolished that same year.
	Built	The Underground Storage Vault (No. 12) is constructed to protect all of the archival materials, documents, and receipts accumulated by Edison.

AD 1940 - 1945	Planted	Following construction of the Underground Storage Vault in 1940, the vault's courtyard façade is planted with a mix of trees and shrubs, including Colorado spruce, Japanese yew, boxwood, rhododendron, and mountain-laurel.
AD 1948	Memorialized	Japanese lanterns are placed in front of the Underground Storage Vault in 1948.
AD 1954	Reconstructed	The Black Maria (No. 13) is reconstructed, but in a different location. The 1954 Black Maria is constructed by the TAE Museum Foundation as an exhibit and is located within the pavement test circle on the Main Street side of the property.
AD 1955	Land Transfer	The Edison Laboratories is donated to the United States of America by the McGraw-Edison Company (formerly Thomas A. Edison, Inc.). The donation consists of 1.51 acres of land, which includes the Edison Laboratories, and a small portion of land from the National Phonograph Company.
AD 1956	Established	Edison Laboratory National Monument is proclaimed in 1956.
AD 1962	Established	Edison Home National Historic Site and Edison Laboratory National Monument are combined and designated as the Edison National Historic Site.
AD 1963 - 1974	Demolished	In 1963, McGraw-Edison and the West Orange town officials begin to develop an Urban Renewal Plan for the West Orange Plant. The intent is to create an industrial park containing new facilities for McGraw Edison. It calls for the removal of all the buildings within the West Orange Plant, except for the Edison Storage Battery Building and the Edison Laboratories. Following the removal of the buildings in the 1974, excluding the Laboratories' buildings, a garage located on Ashland Avenue, and the Storage Battery Building, the plan was economically unfeasible and subsequently abandoned.
AD 2002 - 2003	Moved	Building 11 (No. 11) was disassembled and rebuilt at Laboratory Complex.
AD 2004	Moved	The Japanese lanterns, located in front of the Underground Storage, are moved to the Glenmont Estate.

AD 2003 - 2009	Rehabilitated	The Edison Laboratories are rehabilitated. The work included a new elevator and stair tower that provided for the first time public access to new exhibits on the second and third floors of the building. These exhibits included the original music room, Edison's private laboratory, a photography studio and new gallery displaying the valuable collection of phonographs. The visitor experience was further enhanced by the return of the original furnishings to many of the rooms, new exhibit panels and a self-guided audio tour.
AD 2009	Paved	The vehicular and pedestrian circulation throughout the Edison Laboratories is repaved with a chipseal surface.
AD 2003 - 2009	Removed	Many foundation plantings around the buildings are removed.
AD 2009	Established	Edison National Historic Site is redesignated as Thomas Edison National Historical Park in March of 2009.

Physical History:

The history of the Laboratory Complex is detailed in the "Cultural Landscape Report: Laboratory Unit, Edison National Historic Site" (1996) by David Uschold and George Curry. The majority of the site history that follows is extracted from the Cultural Landscape Report.

PREHISTORY TO 1887

American Indian Occupation:
European settlement in the Newark area, which includes today's West Orange, began even as American Indians – particularly the Hackensacks, a tribe related to the Lenni Lenape – were active along the banks of the Passaic River to the east of the present day Edison Laboratory site. Late nineteenth century accounts indicate minor Native American trails in the immediate vicinity of the Laboratory Complex including at the notches of Eagle Rock, Mount Pleasant, and Northfield Avenues, while evidence of American Indian settlements has also been found. At the time of early European settlement, "a few wigwams [were present] in Tory Corner," about one quarter of a mile from the Laboratory Complex. Other native settlements were also located less than three miles from the laboratory (Beadenkopf, Davis, and Brown, "Archeological Overview and Assessment, Thomas Edison National Historical Park," hereafter AOA, 2011: 18-21).

Colonial Settlement of the Oranges:
The Newark area was founded by a group of Connecticut Puritans from the settlements of Milford and Branford, and they were soon joined by families from nearby Guilford and New Haven. In the spring of 1666, Robert Treat, the leader of the Milford group, led about thirty families aboard two or more boats to the banks of the Passaic River. On July 11, 1667, the colonists and the Hackensacks signed a treaty giving the colonists a tract of land that included present-day Newark, Montclair, Bloomfield, Nutley, Belleville, Glen Ridge, most of the Oranges and Irvington, along with parts of Maplewood and Short Hills (AOA, 2011: 18-24).

By the 1730s, about 700 to 800 people lived in the village of Newark and its surrounding countryside, which included today's South, East, and West Oranges. In addition to harvesting grain, Newark became known for producing apple cider, tanning hides, and as a transhipment point for Morris County iron. Newark and the surrounding countryside, including what is now West Orange, also saw military action during the American Revolution when the Battle of Watsessing was fought within or near Watsessing Park, between one and two miles to the east of Edison's Laboratory Complex. Following the war, significant political, economic, and demographic changes took place within the Newark area. By 1783, area citizens were already referring to themselves as occupants of an entity separate from Newark. But it was not until 1806 that the Township of Orange, including all present-day Oranges, actually separated from Newark's political administration. Newark had failed to efficiently administer its outlying area, particularly as the population of Newark was rapidly expanding. Even Orange itself grew rapidly, with an initial population of about 2,200 in 1806 that increased to 4,000 by 1825 (AOA, 2011: 18-24).

Both the trends established prior to the Revolutionary War and the subsequent capitalist

economy that became the foundation for the American Industrial Revolution had an impact on Orange. In the early part of the nineteenth century, entrepreneurs and skilled mechanics were drawn there. By 1832, Orange was home to two sawmills, one barkmill, forty tanvats, two taverns, three churches, and around 200 or 300 dwellings. By 1835 Orange became more closely linked to Newark by the Morris and Essex Railroad that ran from Newark to Morristown. With its transportation connection to other towns, it is hardly surprising that Orange's population in 1850 was 4,385 but had grown to 9,382 by 1860, when it became incorporated as a town. Soon after, it began to fragment because of conflicts over city service levels. South Orange organized in 1861 and East Orange in 1863. West Orange incorporated as a township also in 1863 and then reformed as a town in 1900 (AOA, 2011: 18-24).

THOMAS A. EDISON STEWARDSHIP, 1887-1889

In response to the ill-effects of the rapidly industrialized cities and construction of improved transportation infrastructure, many wealthy individuals from Newark and New York began establishing country residences in West Orange. Likely drawn to the area for similar reasons, Thomas and Mina Edison purchased a home in suburban West Orange in 1886. The 13.5-acre property, referred to as the Glenmont Estate, was located within the historic residential community of Llewellyn Park. The grounds included a beautiful Queen Anne home, numerous outbuildings, and a variety of native and exotic trees and shrubs. West Orange also appealed to Thomas Edison since it was still mainly undeveloped. By 1887 Edison had decided to construct a new facility to replace his Menlo Park Laboratory. After sketching his concepts for the Laboratories, Edison hired the architect who designed Glenmont, Henry Hudson Holly, to turn his concepts into working drawings. Edison purchased a rectangular shaped two-acre meadow at the Corner of Valley Road and Lakeside Avenue. This site appealed to Edison because it was very close to the Glenmont Estate and was close to the rail line ("Cultural Landscape Report: Laboratory Unit, Edison National Historic Site," hereafter CLR, 1996: 9-10).

Construction began with the Main Laboratory (No. 5) and Power House (No. 6). During its early construction Edison established a temporary laboratory at the Edison Lamp Works in Harrison, New Jersey, where he and a skeleton crew of experimenters continued to work on electric light, ore-milling, and phonographs. While construction continued on the Edison Laboratories, Edison received reports about the masons' workmanship. Because Holly had hired the masons, Jeff Waldron, Edison's construction inspector, suggested that Holly and the masons were colluding to rob Edison, by overcharging him for hours worked and building materials used. Upon hearing this, Edison visited the site in July 1887 to inspect the work. During the visit, Edison became so furious about the poor workmanship that he fired Holly. Several weeks later, he hired Joseph Taft, a New York City architect, to supervise the final construction of the Main Laboratory (CLR, 1996:10).

It was during the construction of the Main Laboratory (No. 5) that the idea for the smaller satellite laboratories originated. As the Main Laboratory reached completion, it became obvious to Edison that its 37,500 square feet of floor space would not be enough for the Laboratory Complex he had envisioned. Subsequently, the smaller laboratories were added to the master plan and Edison began to produce drawings that divided functions among the structures. By October 1887 the Edison Laboratories began to take shape. The Main

Laboratory was complete and work was underway on the satellite buildings adjacent to it. These buildings included the Physics Laboratory (No. 1), Chemical Laboratory (No. 2), Chemical Storage and Pattern Shop (No. 3), and Metallurgical Building (No. 4). Edison's close associate, Charles Batchelor, supervised the construction of the mechanical systems for all of the buildings, as well as fitting out the interiors. Utility lines and storm water drainage were installed, as well as a wood picket fence around the Laboratories. In the following years, additional buildings and structures were constructed to accommodate the various experiments and activities at the laboratory, including a Gate House (No. 9), Photographic Building (no building number), and Black Maria Film Studio (Figures 1-3) (CLR, 1996: 10).

In 1888, Edison was ready to move on to a second industrial phase, mass production. Edison had always wanted to create "…the best equipped and largest laboratory extant and the facilities superior to any other for rapid and cheap development of an invention." To achieve this goal Edison acquired more land for additional facilities. On May 18, 1888, a 5.5-acre parcel located southeast from the Laboratory Complex was purchased for $12,500. The parcel was a meadow and an agricultural field separated by Crooks Pond. The topography of the site made the pond a repository for the site's storm water run-off. A brook also entered the parcel from the north and exited at the southeast border of the site. Once off the site the brook emptied into Wigwam Brook which ran along the southeast boundary of the property. After Edison purchased the site, the pond was filled in and the Edison Phonograph Works were constructed. Completed in 1889, the Edison Phonograph Works expanded Edison's real estate interest from Valley Road to Watchung Avenue (CLR, 1996: 11).

To direct the various flows of materials, the buildings were arranged within both the Laboratories and the Phonograph Works in a hierarchical circulation system. The main corridor ran between the northeast facade of the Main Laboratory and the southwest facades of the satellite laboratories from the Laboratories main entry to the Phonograph Works. Secondary corridors extended off the main corridor and provided direct access to small loading areas and entries to the satellite laboratories. Since the buildings within the West Orange Plant were located perpendicular to the main corridor, the secondary corridor spaces were easily accessible. One of the northeast/southwest corridors within the Phonograph Works contained a railroad spur that extended into the site to deliver supplies and transport finished phonographs off the site. As built, the core of the West Orange Plant was characterized by a dense building coverage with a clear and strong rectangular pattern of spatial organization. The layout and organization made the Laboratories and Phonograph Works an efficient and effective industrial plant and established the basic organization patterns for the growth of the West Orange Plant (CLR, 1996:11).

While the Laboratories and the Phonograph Works were continuing to develop, Edison was involved in other ventures related to the activities of his West Orange Plant. In 1888 Edison purchased property in Silver Lake—an area partly in the towns of Bloomfield and Belleville, located several miles from West Orange. Although originally intended to be the site of a manufacturing plant for joint ventures with various investors, the Silver Lake facility instead provided the West Orange Plant with chemicals needed in phonograph records, batteries, and other supplies. It was also utilized to manufacture storage batteries. In the early 1890s, Edison

was undertaking an ore-milling project. It was Edison's goal to process low-grade ore with his magnetic ore-milling technology and demonstrate its practicality. Edison purchased an ore mine in Ogden, New Jersey. Unfortunately, the ore-milling project was unsuccessful and absorbed not only a large amount of Edison's time but also a great amount of his personal finances. During the mid-1890s the strain on Edison's finances grew worse because of a failing economy resulting from the 1893 Depression. This caused a great reduction in the experimental activity at the Laboratories and a halt to any further construction. All experimental work related to the phonograph was stopped and existing production was slowed. By 1896 the United States was recovering from the depression and more effort was returned to the phonograph (CLR, 1996: 11).

The Edison Laboratories and the Edison Phonograph Works were considered separate entities. The Laboratories were primarily a research facility whose sole purpose was to develop and conduct experiments in several fields such as electricity, photography, and geology (metallurgical). The Edison Phonograph Works was essentially a manufacturing plant that conducted very few experiments. By 1899, the Laboratories consisted of two acres and the Edison Phonograph Works comprised 5.5 acres. Together, the West Orange Plant was approximately 7.5 acres (CLR, 1996: 11).

Figure 1. View looking east towards the Edison Laboratories, Main Laboratory, Power House, Gate House, Physics Laboratory, c.1900 (Album 64, EDIS Archives).

Figure 2. A 1939 image looking east showing the Chemical Storage and Pattern Shop, drainage gutter, and entry ramp (Album 43, Cat. 547, Neg. 8011, EDIS Archives).

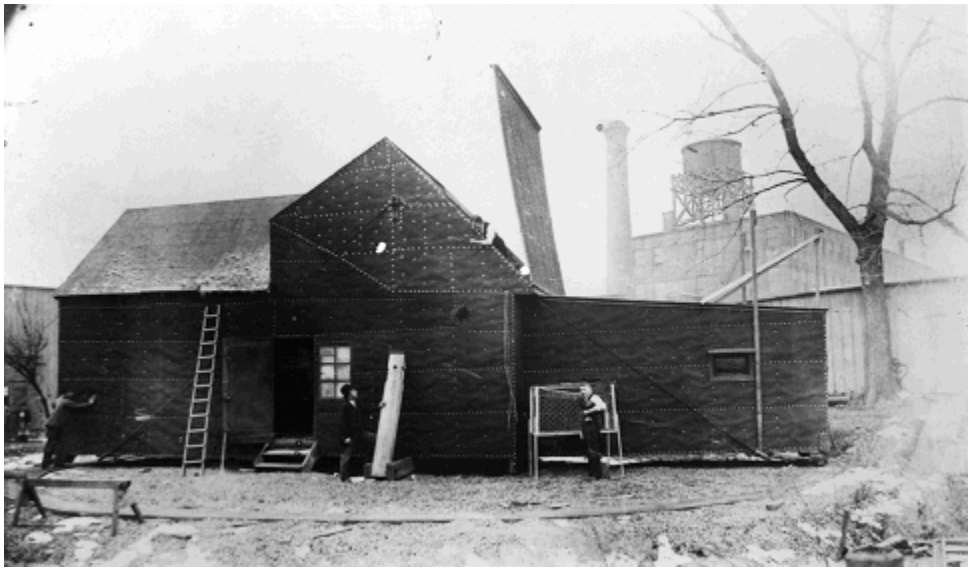


Figure 3. View looking northeast showing the Black Maria, c.1894, in its original location (23.440/2 Neg. 6570, EDIS Archives).

THOMAS A. EDISON STEWARDSHIP, 1899-1914

By 1896, Edison forced the North American Phonograph Company into bankruptcy and thereby regained control of several of his patents that the company controlled. Shortly thereafter, he organized the National Phonograph Company to market the phonograph as an entertainment device rather than as a dictating machine. In June 1899 the National Phonograph Company began purchasing surrounding land, beginning the West Orange Plant's expansion. Between 1899 and 1908, approximately forty-three lots were acquired (CLR, 1996: 26).

The actual physical growth of the West Orange Plant occurred between 1899 and 1914. During this time the plant grew from 7.5 to 26.26 acres. The land acquired included vacant lots as well as residential lots that had to be cleared for construction. As the land was acquired, a building spree added over sixty new buildings to the West Orange Plant. The larger buildings were constructed of concrete produced by Edison's Portland Cement Company. Utility systems were similarly improved and expanded and included the construction of a new power house and boiler house for the West Orange Plant. One of the motivations for the West Orange Plant expansion was Edison's development of an alkaline storage battery. The Storage Battery Building was constructed across from the Laboratories on Lakeside Avenue to mass produce the storage battery. It remained a successful product line for the West Orange Plant for several decades.

While the West Orange Plant was experiencing tremendous growth, the Edison Laboratories site remained within its boundaries but did experience several changes. Several new buildings were added including the Blacksmith Shop (No. 7), Storage Vault (No. 8), Garage (No. 10), Building 11 (No. 11), Pattern Shop, Experimental Studio, Gold Plating Facility, Glass House, and several unidentified buildings. In addition, utilities were improved (Figure 4) (CLR, 1996: 26).

Over time, the plant's rampant growth required the oversight of an entity that could manage and administer the combined resources of all of Edison's West Orange Plant facilities. Thomas A. Edison, Incorporated (TAE Inc.) was created in 1911, organizing most of the Edison businesses under one centralized administration. TAE Inc. reorganized most of the Edison facilities and staff, making the West Orange Plant one of the nation's leading industries (CLR, 1996:26).

The West Orange Plant's expansion transformed it from a research laboratory and manufacturing facility to the industrial complex envisioned by Edison. The bulk of the expansion was concentrated on the parcel of land bound by Valley Road, Alden Street, Watchung Avenue, and Lakeside Avenue. Within this "super block," the basic layout and spatial organization which began to develop during the first period were fully articulated. The overall concept for the superblock was to locate larger and taller five and six-story buildings at the perimeter of the block and shorter buildings in the center. This concept afforded the Plant a good deal of privacy as the larger buildings at the perimeter created interior spaces separated from the street and public view (CLR, 1996: 26-28).

The layout and spatial organization of the West Orange Plant outside of the superblock was very different. All buildings and structures outside the block were oriented toward the street. They had little or no internal spatial organization within the parcel of land on which they were

located. For the most part these parcels contained support facilities for the main core of the Plant and were mostly one and two-stories high. The one exception was the Edison Storage Battery Building which consisted of a series of connected five and six-story buildings. The main facades of the buildings faced Lakeside and Ashland Avenues, extending along Lakeside Avenue from Ashland Avenue to Valley Road and along Ashland Avenue from Lakeside Avenue to Charles Street (CLR, 1996: 27-28).

The expansion of the West Orange Plant was so significant that the plant and the immediate surrounding area became known as the "Edison District." In general terms the district was bounded by several local streets: Washington Street, Park Avenue, Valley Road, Watchung Avenue, and the Orange city line. The West Orange Plant was noted as the largest industrial complex in the Oranges (CLR, 1996: 27-28).

The plant's growth continued until December 1914 when a major fire occurred at the site (Figure 5). The fire, which started in the film inspection building (No. 41), destroyed many of the buildings at the West Orange Plant. By the next day, 15 of the 22 Edison Phonograph Works' buildings were either severely damaged or completely destroyed. The fire had burned throughout the night and smoldered for weeks. The Laboratory and Company fire departments joined fire departments from nearby towns to battle the blaze and were credited with preserving the Edison Laboratories from fire damage. The storage battery building also was undamaged (CLR, 1996: 27-28).

Figure 4. View looking northeast showing the Garage and Building 11 (No. 11), c.1917 (EDIS Archives).

Figure 5. The West Orange Plant following the 1914 fire (Album 10, Cat. 5209, EDIS Archives).

THOMAS A. EDISON STEWARDSHIP, 1914-1931

According to William Meadowcroft, Edison's personal secretary and biographer, the fire ushered in a period of hard work and great effort for both Edison and the West Orange Plant. By 1917, much of what was destroyed or damaged by the fire had been repaired or replaced and soon the West Orange Plant was operating as if the fire had not occurred. The majority of the rebuilt buildings were located on the existing foundations. Some buildings were rebuilt in the same location but slightly larger than their predecessors were. The reconstructed plant was more organized in its appearance than before the fire. With the exception of a few lean-tos that were constructed and used as bicycle sheds for workers, most of the temporary structures that cluttered the site prior to the fire were not reconstructed (Figure 6) (CLR, 1996: 42).

Throughout the reconstruction, Edison products were redesigned and manufactured in the undamaged buildings, primarily the Storage Battery Building. However, the staff now focused on cost reduction and product engineering, rather than on product development, which had been the primary objective before the fire. At this time, the West Orange Plant's emphasis was on manufacturing rather than experimentation. This became evident in 1916, when the Laboratories became service departments directing support toward the product lines (CLR, 1996: 43).

The onset of World War I brought new challenges and significant changes to the West Orange Plant. New products were manufactured, new contract research was initiated, and new employees were hired. Like every other major manufacturing concern in the United States, TAE Inc. had to put its production and experimental facilities at the disposal of the government. Quite separate from the war work conducted at the Laboratories and factories, Edison served as President of the Naval Consulting Board, which was charged with three primary tasks: to construct a military research laboratory; solicit and develop the ideas of inventors, and divide its

members into committees to work on private projects. Only the last proved partially successful. The Laboratories concentrated on devising manufacturing programs for the numerous war products TAE, Inc. had agreed to manufacture. They included gas masks, bomb sights, and miscellaneous electrical equipment (CLR, 1996: 43).

After the initial loss of workers to the armed forces, there was a rapid increase in the labor force at the West Orange Plant. During World War I, there were approximately 8,000 employees at the West Orange Plant compared with about 3,000 at the turn of the century. By the end of the war there were as many as 10,000 employees at the plant, with approximately 180 to 190 employees at the Edison Laboratories, but the war-time prosperity was only temporary. By 1921 it was estimated that fewer than 2,000 workers remained in his factories at West Orange. Cutbacks continued as the financial situation of the West Orange Plant deteriorated. By September 1923, the Laboratories had approximately 65 employees, but gradually decreased to a low of seven in 1930 (CLR, 1996: 43).

Following World War I, cutbacks continued at the West Orange Plant. During this time, the Plant served as a product support facility, which resulted in little innovation and experimentation. The phonograph business was in decline as Edison refused to accommodate to changing musical tastes and ignored new methods of electrical recording. By the late 1920s attention increasingly focused on routine engineering tasks such as developing a line of household appliances. Also during this time, Edison's managerial role at the West Orange Plant decreased. In 1926 Edison's son, Charles, became president of TAE Inc. On May 1, 1930, Edison sold the laboratory buildings to TAE Inc. for $165, 000 (CLR, 1996: 44).

Throughout the period, the Edison Laboratories experienced several minor physical changes resulting from the 1914 fire. Utilities systems were improved including the installation of utility poles, gasoline storage tanks, hydrants and ground water outlets, as well as the construction of a 75,000-gallon water tower (Figure 7). All wooden window sashes were replaced by steel sashes with ribbed-and-wire glass and several emergency exits were installed in the Main Laboratory. In addition, the picket fence around the Laboratories was replaced with a metal chain link fence and wrought iron gates were installed. Vegetative features added during this time included the establishment of a Mazzard cherry at the west corner of the Main Laboratory, a row of American Arborvitae along the northeast boundary of the Laboratories property, and privets and ground cover along the Laboratories' western façade (Figure 8). Building and structures that were built included an Experimental Record Shed, Ice House, Hose House, Foundry, Nickel Plating Building, Blue Amberol Vault (No. 33), Diamond Disc Vault (No. 32), Rear Gate House, Lakeside Avenue Vault, and a Bandstand (Figure 9). The Blacksmith's Shop (No. 7), rebuilt following a fire in 1911, was also enlarged in 1919. Another change at this time included the introduction of three decorative furnishings, including two railroad trucks and war memorial plaque, and the installation of a pavement test circle. The last years of Edison's life were devoted to the search for a domestic source of rubber. Despite declining health he continued working in the laboratory until a few months before his death on October 18, 1931 (CLR, 1996: 54-55).

Edison's health began to deteriorate during the late 1920s and after one month of being confined

to his bed, Edison passed away on October 18, 1931. Edison's reputation as a “benefactor of mankind” brought thousands of people to pay their last respects at the West Orange Plant, where his coffin was displayed.
With Edison's death in 1931 the last period of Edison's direct stewardship, ended.

Figure 6. View of looking north of the West Orange Plant after reconstruction, c.1917 (10. 380/25 EDIS Archives).

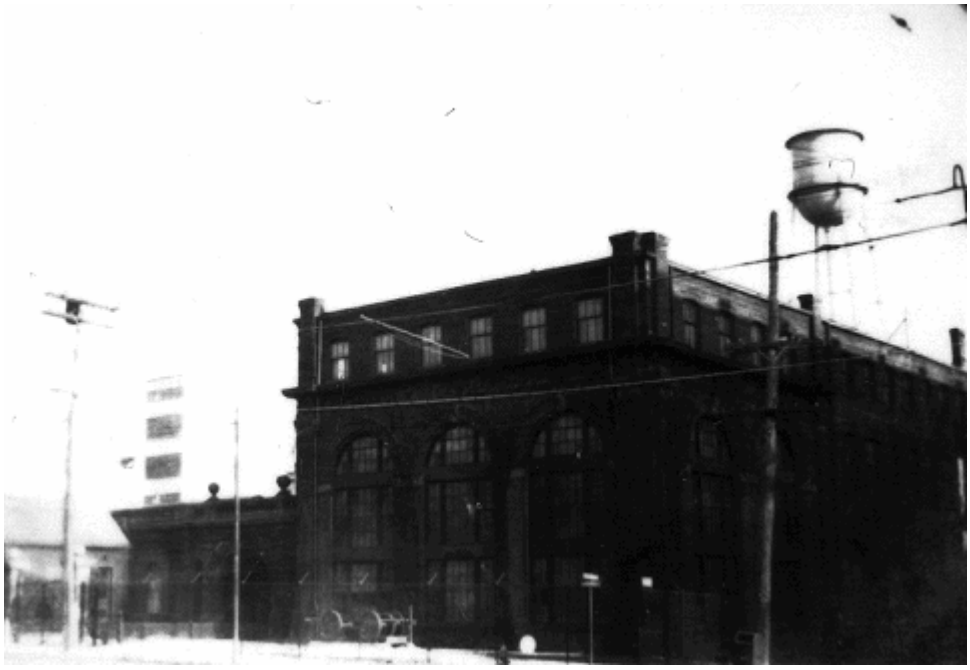


Figure 7. View looking east showing the Main Laboratory (No.5), Gate House (No.9), and Water Tower (No.20), Edison Laboratories, c.1927 (EDIS Archives).

Figure 8. View looking south showing the Gate House (No. 9), wrought-iron gate, Main Laboratory (No. 5), and chain-link fence, c.1927 (EDIS Archives).

Figure 9. View looking north showing a temporary bandstand constructed on the southwest elevation of the Power House (No. 6), c.1918 (Album 15, Cat. 14, 257, EDIS Archives).

THOMAS A. EDISON INC. STEWARDSHIP, 1931-1955

Following Edison's death in October 1931, TAE Inc. controlled all aspects of Edison's business enterprises. During this time, the corporation continued operating the West Orange Plant as a manufacturing facility though production had slowly declined. A slight increase in production did occur during World War II but was short-lived. Meanwhile, TAE Inc. began efforts to transform the Edison Laboratories from an experimental facility into a museum. When Edison died his desk in the library of the Main Laboratory was sealed and over the following decade the laboratory grounds began to take on more manicured appearance. Much of the experimental and industrial clutter was removed and ornamental vegetation and decorative furnishings were added including a concrete slab, and a war memorial at the corner of Main Street and Alden Street (Figures 10-12). Between 1939 and 1940, in preparation for the construction of a new archives and museum storage vault, the Garage (No. 10) was removed and Building (No. 11) was moved to the Henry Ford Museum and Greenfield Village. Shortly thereafter, an Underground Storage Vault (No. 12) was constructed to protect all of the archival materials, documents, and receipts accumulated by Edison. In 1954, a replica of the Black Maria (No. 13) was constructed on the site to serve as an exhibit. In 1955 TAE Inc. took a substantial step in their efforts to preserve the Laboratories as a museum when the company donated the property and contents to the National Park Service (NPS) to be operated as a public museum. The donation consisted of 1.51 acres of land, which included the laboratory and a small portion of land from the National Phonograph Company including several buildings. Unlike earlier periods of the site's history, activities at the laboratory after Edison's

death are not well documented making it difficult to recount events at the laboratory during this period (CLR, 1996: 60).

Figure 10. Images taken in 1939 of the Main Laboratory building and vegetation, including the Mazzard cherry (top), and row of spruce trees and canna (bottom) (EDIS Archives).

Figure 11. View looking northwest showing the main corridor, courtyard and main entry and vegetation within the Edison Laboratories, c.1939 (Album 43, 8005, EDIS Archives).

Figure 12. View looking southwest showing the vegetation and pavement test circle, c.1939 (Album 43, 8014, EDIS Archives).

NATIONAL PARK SERVICE STEWARDSHIP, 1955-2011

In 1956 TAE Inc. presented the Edison Laboratories to the Secretary of the Interior to become part of the National Park System. The donation included 1.51 acres of land and all of the buildings and contents within the Edison Laboratories at the West Orange Plant. In 1958, two non-historic parcels across Main Street were acquired for visitor parking. With the transfer of the property, the Edison Laboratory National Monument was established. On September 5, 1962, the Glenmont Estate (designated as the Edison Home National Historic Site in 1955), was combined with the Edison Laboratory National Monument to create the Edison National Historic Site. The park was later changed to Thomas Edison National Historical Park in 2009 (CLR, 1996: 70).

A few months after donating the Laboratories to the NPS, TAE Inc. joined with McGraw Electric Company, becoming McGraw-Edison. In 1963, McGraw-Edison and the West Orange town officials began to develop an Urban Renewal Plan for the West Orange Plant. The original intent of the plan was to create an industrial park containing new facilities for McGraw-Edison. It called for the removal of most buildings within the West Orange Plant, except for the Edison Storage Battery Building on Lakeside Avenue. The Edison Laboratories were excluded from this plan as a National Historic Site under the stewardship of the National Park Service. After the plan was implemented and buildings demolished in 1974, the only

remaining buildings and structures from the West Orange Plant were the Laboratories' buildings, a garage located on Ashland Avenue, the Storage Battery Building and a large retaining wall located near the intersection of Lakeside and Watchung Avenues. After the removal of the buildings, McGraw-Edison decided that the implementation of the Urban Renewal plan was economically unfeasible. They abandoned the efforts and the new industrial park was never built. Currently the area contains several light industrial enterprises and a West Orange municipal garage. To accommodate the new uses, the topography of the property was altered, creating a more severe grade change between the Laboratory Complex and the adjacent property to the east. The property east of the Laboratory Complex was graded to lessen the existing slope, making the slope at the east corner of the property more severe (CLR, 1996: 70).

Since 1974, several adjacent parcels of land, formerly part of the West Orange Plant, were acquired by the National Park Service. In addition, improvements were made to the Laboratory Complex between 2003 and 2009. The work included the rehabilitation of the laboratory building; upgrades to the electrical and fire protection systems; relocation of Building 11 (No. 11) from the Henry Ford Museum and Greenfield Village in Michigan; removal of non-historic vegetation, such as the spruce trees along Main Street; installation of interpretative media; and improvements to the vehicular and pedestrian circulation.

Today, the Laboratory Complex consists of approximately 5.58 acres of historic (3.19) and non-historic (2.39) land. The historic portion of the complex contains the Edison Laboratories and a portion of the original National Phonograph Works property. The non-historic parcel, referred to as the Maintenance Area, is located adjacent to the Laboratories across Main Street and includes a maintenance building and visitor parking.

Analysis & Evaluation of Integrity

Analysis and Evaluation of Integrity Narrative Summary:

Landscape characteristics identified for the Laboratory Complex include topography, spatial organization, circulation, vegetation, buildings and structures, views and vistas, small-scale features, and archeological sites. Many of these characteristics have associated with them features that contribute to the site's overall historic setting significance and identity, as well as features that do not contribute or are undetermined.

The physical integrity of the Laboratory Complex is evaluated by comparing landscape characteristics and features present during the period of significance (1887-1931) with current conditions. Many of the landscape's historic characteristics and features are still intact. The Edison Laboratories site includes numerous laboratory buildings and structures surrounded by open lawn with few plantings. The spatial relationships between the laboratory buildings, local roads, driveways, and paths are also intact. The Edison Laboratories remain bounded by Main Street, Alden Street, and Lakeside Avenue and the main and secondary corridors between buildings continue to follow the same historic alignment within the site. Extant historic buildings and structures include the Physics Laboratory, Chemical Laboratory, Chemical Stockroom/Pattern Shop, Metallurgical Laboratory, Main Laboratory, Power House-Boiler Room, and Blacksmith Shop. Other buildings and structures include the Small Storage Vault, Gate House, Building 11, Diamond Disc Vault, Blue Amberol Vault, Water Tower, and power transmission poles. Ornamental plantings and vegetative features such as the open lawn areas, ground cover around railroad trucks, the Mazzard cherry, and row of arborvitae remain intact since the historic period, as well as the Main Street view of the Edison Laboratories. There are also many small-scale features that currently exist within the site that date to the historic period including the drainage system-concrete gutter, miscellaneous utility structures, pavement test circle, fences and gates, electric railroad trucks, coal remnant, Administration Building stairs, Portland cement sidewalk plaque, and a concrete wall.

Following the historic period, the character of the site changed from a facility cluttered from the continually changing experiments to a highly manicured park setting. Landscape characteristics and features that were removed were mostly the West Orange Plant buildings and the Garage (Building 10) within the Edison Laboratories. Features added since Edison's death include the Underground Storage Vault, Pump House, World War II memorial, visitors' gate, cement slab, privet globe hedge, and foundation plantings. In addition, a 2.39-acre parcel of land across Main Street was acquired by the National Park Service for visitor services. Other changes are primarily associated with National Park Service visitor facilities, which include parking areas, drinking fountain, benches and receptacles, and signs. Despite some changes in vegetation, buildings and structures, and small-scale features, the Laboratory Complex retains overall integrity of location, design, materials, workmanship, and association. Integrity of setting and feeling is slightly diminished.

INTEGRITY

Integrity is the ability of a property to convey its significance. In order for a property to retain its

integrity, it must possess the essential characteristics and features that characterized it during the period of significance. The National Register program identifies seven aspects of integrity including location, design, setting, materials, workmanship, feeling, and association. To retain integrity, a property must possess the aspects that best convey a sense of a particular time and place.

As documented in the statement of significance, the Laboratories were extremely important to Thomas Edison. They evolved through his careful planning and were altered as experience in experimentation and manufacturing demanded. For the 44 years he was associated with them, Edison spent the majority of his time at the Laboratories. Like most sites significant for their association with an important person, all seven aspects of integrity are important for this property. However, design and association are the most important for the Laboratories.

The following is an assessment of each of the seven aspects of integrity as they relate to the property's significance under National Register Criteria A: Science and Industry, and Criteria B: Association with an important person. Although the Laboratory Complex is comprised of the Edison Laboratories and the non-historic maintenance area across Main Street, only the integrity of the Laboratories will be evaluated as part of this CLI.

Location:
The Edison Laboratories retain high integrity of location. They are located in the same place as during the period of significance. Location is important as one of the aspects for which Edison chose the site. It was located very close to his home in Llewellyn Park. This gave Edison easy access to his lab and the ability to spend more time there.

Design:
The Edison Laboratories retains a high integrity of design. With exception to the loss of the Garage (Building 10), the overall layout and design of the property is intact. The design of the Laboratories clearly is the most critical aspect of this property. The design was carefully thought out by Edison to create an efficient and effective operating facility for invention and experimentation.

Setting:
The Edison Laboratories setting has been slightly diminished since the historic period. Many elements that together created the setting, both within and surrounding the site, have been lost or altered. Within the site, most of the major physical elements (buildings and circulation) remain. However, the smaller elements (ongoing experiments, material stock piles etc.) which created the busy and cluttered working atmosphere of the site are gone. In place is a neatly manicured park. In addition, most of the huge industrial buildings of the surrounding West Orange Plant are gone. The Storage Battery Building is the only remnant of what previously surrounded the Edison Laboratories.

Materials:
The Laboratories retain integrity of materials. The major physical features and many smaller features of the site retain their original materials. For the most part, all of the historic features on the site continue to exhibit their historic materials.

Workmanship:
Within the Laboratories, workmanship remains evident in the design of the buildings and structures and circulation systems, as well as construction methods of the small-scale features. In recent years, many of the buildings and structures have been either restored or rehabilitated and continue to demonstrate the quality and functional workmanship characteristic of the Laboratories.

Feeling:
The Laboratories have lost integrity of feeling. The active and cluttered character that was once demonstrated by the Laboratories is no longer evident. The finely manicured appearance of the site today is contradictory to the working character of the period of significance.

Association:
The Edison Laboratories retain high integrity of association. As an inventor, Edison was concerned with function, not appearance, of his facility. His laboratories demonstrated this thinking by the visible working elements such as utility lines, material stock piles, and on-going experiments in the outdoor spaces. Although many of these elements no longer exist, the majority of the features within the site are associated with Thomas Edison.

The section below presents an analysis of landscape characteristics and their associated features and corresponding List of Classified Structures names and numbers, if applicable. It also includes an evaluation of whether the feature contributes to the property's National Register eligibility for the historic period (1887-1931), contributes to the property's historic character, or if it is non-contributing, undetermined, or managed as a cultural resource.

Landscape Characteristic:

Topography

Historic and Existing Conditions:
The topography of the original Edison Laboratories site gradually sloped to the southeast, parallel to the Main Laboratory (No. 5). The neighboring National Phonograph Company property had the same general topography. The high point of the National Phonograph Company property was in the location of Building 24, along the northeast boundary of the parcel. Another slight slope existed between this parcel and the Laboratories northeast boundary. Along this boundary, a short slope rose approximately four feet to the National Phonograph Company site. Today, the existing topography of the Edison Laboratories generally slopes from the northeast to the southeast. The topography of the site has remained relatively unchanged since the historic period.

Across from the Edison Laboratories, the Maintenance Area is generally level. The western portion of the site is the former location of a segment of Honeysuckle Avenue and contains a flat, gently ascending former roadbed that slopes to the paved portion of the property at the rear of the maintenance building (CLR, 1996: 170-171).

Spatial Organization

Historic Condition (through 1931):
The spatial organization of the Laboratories was carefully planned and laid out according to Edison's specifications, creating an efficient and effective operating facility. The buildings were arranged to extend perpendicular from the Main Laboratory (No. 5), allowing each satellite lab access to it. The main corridor and secondary corridors allowed access to all areas of the site, and combined with the courtyard, created substantial amounts of outdoor experimental space. These outdoor spaces were all enclosed by the surrounding fences and buildings, including the industrial buildings of the West Orange Plant, creating areas where activities could be undertaken in private, out of public view.

Post-historic and Existing Conditions (since 1931):
Following the death of Thomas Edison, the spatial organization of the Edison Laboratories was slightly diminished with the removal of building 11 on the northeast side of the courtyard. The courtyard enclosure—a key outdoor feature of Edison's original plan—was subsequently lost. The addition of the Underground Storage Vault did little to restore the enclosure since only a three and one-half foot section of the building was above grade. Between 2002 and 2004, however, the spatial organization of the site was restored when the Building 11 (No. 11) was relocated close to its approximate original location on the northeast side of the courtyard (Figures 13-15).

Landscape Characteristic Graphics:

Figure 13. View looking southeast showing the satellite laboratories and main corridor within the Edison Laboratory Complex (OCLP, 2011).

Figure 14. View looking northeast showing a secondary corridor between the Chemical Laboratory (No. 2) and the Chemical Storage and Pattern Shop (No. 3) (OCLP, 2011).

Figure 15. View looking north of the Physics Laboratory (No. 1), Small Storage Vault (No. 8), and courtyard within the Laboratory Complex (OCLP, 2011).

Circulation

Historic Condition (through 1931):
A hierarchal circulation system existed within the Edison Laboratories, consisting of a main corridor extending from the Main Street gate and several small secondary corridors extending between the satellite labs and a courtyard enclosed by the Main Laboratory (No. 5), Physics Laboratory (No.1), garage, Building (No.11) and the Chemical Laboratory (No. 2). The main corridor extended through the site accessing the National Phonograph Company and the remainder of the West Orange Plant. Both vehicular and pedestrian traffic were accommodated by these corridors. Pedestrian access was through a gate adjacent to the main gate. Pedestrian entry was also possible through the Gate House. However, during the period, additional entrances were established along Lakeside Avenue and Alden Street. At the time, these elements were originally established they were constructed of compacted soil. With the increased activity of the Edison Laboratories and the West Orange Plant in the early 1900s, the main corridor and courtyard were improved with hard, less permeable surfaces. Concrete walks were also constructed along the southeast façade of the Metallurgical Building (No. 4) (CLR, 1996: 100).

Post-historic and Existing Conditions (since 1931):
Following the historic period, the circulation patterns within the Edison Laboratories remained relatively unchanged. In the 1940s, concrete ramps were built to provide access into the newly constructed Underground Storage Vault (No. 12). Following the National Park Service's acquisition of the parcel adjacent to the Edison Laboratories across Main Street, parking areas were constructed to accommodate visitors and staff. Today, the circulation system within the Laboratory site consists of the main corridor, secondary corridors, courtyard, and concrete sidewalk remnants, as well as an additional pedestrian entry from Lakeside Avenue through the Power House (Figure 16, see also Figures 13-15). The main corridor and courtyard were recently resurfaced with bituminous asphalt and top-dressed with a chip-seal. Visitor and staff parking are now located within the Maintenance Area across Main Street (CLR, 1996: 100).

Character-defining Features:

Feature: Main and Secondary Corridors

Feature Identification Number: 151647

Type of Feature Contribution: Contributing

Feature: Courtyard

Feature Identification Number: 151649

Type of Feature Contribution: Contributing

Feature: Concrete Sidewalk Remnants

Feature Identification Number: 151651

Type of Feature Contribution: Contributing

Feature: Main Street, Alden Street, and Lakeside Avenue Entries

Feature Identification Number: 151653

Type of Feature Contribution: Contributing

Feature: Underground Storage Vault Concrete Ramps

Feature Identification Number: 151655

Type of Feature Contribution: Non Contributing

Feature: Visitor and Staff Parking Areas

Feature Identification Number: 151657

Type of Feature Contribution: Non Contributing

Landscape Characteristic Graphics:

Figure 16. View looking east showing the concrete sidewalk remnants at the Edison Laboratory Complex. Note the Diamond Disc Vault (No. 32) in the background (OCLP, 2011).

Vegetation

Historic Condition (through 1931):
Limited vegetation existed on the Laboratory site during the period of significance. The Main

Street and Lakeside Avenue facades had maintained lawn between the sidewalk and the buildings and a Mazzard cherry (Prunus avium) stood at the intersection of the two streets. Boston ivy grew on most of the building facades in the Laboratory site and a few scattered trees and shrubs existed within the interior of the Laboratory, including a row of Eastern arborvitaes (Thuja occidentalis) along the former northeast boundary of the Laboratories property. Other vegetative features that existed during the historic period included groundcover, likely English ivy, around the two rail cars located along Main Street (formerly Valley Road) (CLR, 1995: 46).

Post-historic and Existing Conditions (since 1931):
Following the death of Thomas Edison in 1931, ornamental vegetation was established throughout the Edison Laboratories. A row of Norway spruce (Picea abies) was planted along the Main Street side of the property. In addition to the spruce, golden canna (Canna species) was planted in several places on the site including the center of the pavement test circle and along the foundation of most buildings. In 1940, after the construction of the Underground Storage Vault (No. 11), Colorado spruce (Picea pungens), Japanese yew (Taxus cuspidata), privet (Ligustrum species), rhododendron (Rhododendron species), and Mountain-laurel (Kalmia latifolia) were established along the buildings foundation, while a row of globe-shaped privets (Ligustrum species) were planted at its rear. Foundation plantings were established along the entry to the Power House (No. 6) and yews (Taxus species) and junipers (Juniperus species) were installed around a World War II memorial.

As part of the renovations completed to the Edison Laboratories between 2003 and 2009, the Norway spruce and other ornamental plantings were removed. Today, vegetation at the Edison Laboratories includes the open lawn areas, ground cover around railroad trucks, the Mazzard cherry, rows of arborvitae and globe-shaped privets, and foundation plantings around the Underground Storage Vault (No. 11) and Power House (No. 6). The maintenance area adjacent to the Edison Laboratories includes a wooded area and numerous flowering pear trees (Figures 17-22).

Character-defining Features:

Feature: Mazzard Cherry

Feature Identification Number: 151679

Type of Feature Contribution: Contributing

Feature: Eastern Arborvitae Row

Feature Identification Number: 151681

Type of Feature Contribution: Contributing

Feature: Lawn between Satellite Laboratory Buildings

Feature Identification Number: 151683

Type of Feature Contribution: Contributing

Feature: Lawn along Main Street and Lakeside Avenue

Feature Identification Number: 151685

Type of Feature Contribution: Contributing

Feature: Railroad Truck Groundcovers

Feature Identification Number: 151687

Type of Feature Contribution: Contributing

Feature: Vault Foundation Planting

Feature Identification Number: 151689

Type of Feature Contribution: Non Contributing

Feature: Entry Foundation Planting

Feature Identification Number: 151691

Type of Feature Contribution: Non Contributing

Feature: Privet Globe Hedge

Feature Identification Number: 151693

Type of Feature Contribution: Non Contributing

Feature: Memorial Juniper and Yew Planting

Feature Identification Number: 151695

Type of Feature Contribution: Non Contributing

Feature: Maintenance Area Vegetation

Feature Identification Number: 151701

Type of Feature Contribution: Non Contributing

Feature: Lawn, North and East of Buildings

Feature Identification Number: 151703

Type of Feature Contribution: Non Contributing

Landscape Characteristic Graphics:

Figure 17. View looking northwest showing the Mazzard cherry (Prunus avium) (2-1-1), railroad truck and groundcover, fencing, and wayside (OCLP, 2011).

Figure 18. View looking west showing the row of arborvitae (2-1-7) within the Edison Laboratory Complex (OCLP, 2011).

Figure 19. View looking east showing the Main Storage Vault (No. 12) and foundation plantings (2-2-19 through 2-22) (OCLP, 2011).

Figure 20. View looking east showing the entry foundation plantings (2-2-29 through 2-2-36) located along the south elevation of the Power House (No. 6), as well as the visitor's gate (OCLP, 2011).

Figure 21. View looking southwest showing the Edison Laboratory Complex. Note the privet globe hedge and arborvitae in the foreground and the Main Laboratory (No. 5) in the background (OCLP, 2011).

Figure 22. View looking north showing the war memorial juniper and yew planting, as well as flagpole within the Edison Laboratory Complex (OCLP, 2011).

Buildings and Structures

Historic Conditions (through 1931):
When the Edison Laboratories were originally constructed in 1887, they consisted of six buildings: the Physics Laboratory (No. 1), Chemical Laboratory (No. 2), Chemical Storage/Pattern Shop (No. 3), Metallurgical Building (No. 4), Main Laboratory (No. 5), and Power House (No. 6). The Main Laboratory (No. 5) was the largest building in the complex. The Power House (No. 6) was attached to the rear of the Laboratory; however, it was considered a separate building. The four remaining satellite laboratories (No. 1 through 4) were single-story, rectangular-shaped, and aligned perpendicular to the Main Laboratory.

The Gate House (No. 9) was constructed in 1890 at the main gate on Main Street (formerly Valley Road). The small, shingle-style, one-story frame structure was located between the sidewalk and the Physics Laboratory (No.1). Shortly thereafter, in 1893, the Black Maria (No. 13) was constructed on the east side of the Metallurgical Building (No. 4). The building was the first structure specifically built as a motion picture studio. The building was constructed of wood, was covered with tar paper and measured approximately 50 by 13 feet. It rotated on a graphite center and wooden circular track to follow the movement of the sun. An additional

building constructed during this period included a photographic building. This glass-roofed structure enabled Edison's principal photographer and chief motion picture experimenter, W.K.L. Dickson, to conduct motion picture experiments.

Between 1899 and 1914, the Edison Laboratories and the associated manufacturing facilities such as the Edison Phonograph Works expanded into the surrounding area. These combined facilities, later referred to as the West Orange Plant, consisted of several square blocks of manufacturing, industry, and research facilities. As part of this expansion, the Storage Battery Building was constructed across from the Laboratories on Lakeside Avenue. Within the Edison Laboratories, several new buildings were added, including the Blacksmith's Shop (No. 7), Garage (No. 10), Building 11 (No. 11), Pattern Shop (No. 12), Experimental Studio (No. 13), Gold Plating Building (No. 22), Small Storage Vault (No. 8), and a glass house. The Blacksmith's Shop was destroyed by fire in 1911, but was rebuilt shortly thereafter. In addition to the buildings, the Laboratory electrical systems were also expanded and improved during this period, which included the construction of power transmission poles east of the Metallurgical Building (No. 4).

In 1914, a major fire destroyed many buildings at the West Orange Plant. Fifteen of the twenty-two Edison Phonograph Works' buildings were either severely damaged or completely destroyed. Miraculously, the Edison Laboratories were not damaged by the fire. The Storage Battery Building was also undamaged. By 1917, much of what was destroyed or damaged by the fire had been repaired or replaced.

Within the Edison Laboratories, additional buildings were added or improved between 1914 and 1931. In 1915, the Diamond Disc Vault (No. 32) and Blue Amberol Vault (No. 33) were built. Both buildings were concrete two-story structures. The Diamond Disc Building was located adjacent to the Metallurgical Building (No. 4) and the Blue Amberol Building was sited northeast of the Physics Laboratory (No. 1). Other structures constructed during this time included the Ice House, Hose House, Foundry, Nickel Plating Building, Lakeside Avenue Vault, and Bandstand. In 1919, the Blacksmith's Shop (No. 7) was enlarged. In 1922, the Edison Laboratories' water system was improved with the addition of the 75,000-gallon Water Tower (No. 34 in National Register, No. 20 in LCS). The tower was constructed on the southeast side of the Metallurgical Building.

Post-historic and Existing Conditions (since 1931):
Following the death of Thomas Edison in 1931, two buildings were removed and two were added within the Edison Laboratories. The Garage and Building 11 (No. 11), both located in the courtyard, were removed between 1939 and 1940 in preparation for the construction of a mostly underground building, the Main Storage Vault (No. 12). The Garage (No. 10) was demolished and Building 11 (No. 11) was disassembled and moved to the Henry Ford Museum in Greenfield Village, Dearborn, Michigan. The Main Storage Vault was constructed in 1940 to house all of Thomas Edison's records and documents and to protect materials from possible air assault during World War II. The vault was constructed of concrete and recessed below grade

with approximately three and one-half feet visible above grade. A drainage system equipped with two pump houses were also constructed for the vault. In 1940, the Black Maria was reconstructed, but later demolished in preparation for the construction of the Main Storage Vault (No. 12). Following completion of the vault, the Black Maria was reconstructed again in 1954, but in a different location. It was located along Main Street within the pavement test circle northeast of the Physics Laboratory (No. 1).

In 1955, the National Park Service acquired the buildings within the Edison Laboratories. At that time, the buildings remained relatively unchanged. In 1963, an Urban Renewal Plan was developed with the intent to create a new industrial park. The plan called for the removal of all buildings within the West Orange Plant, except for the Storage Battery Building. The Edison Laboratories were excluded from the plan as they were under National Park Service stewardship. In 1974, the majority of the buildings were removed. The only buildings or structures that remained included a garage, the Storage Battery Building, and a large retaining wall. Following the removal of the buildings, the plan was abandoned. Between 1955 and 1970, the National Park Service acquired an adjacent parcel of land across Main Street to accommodate visitor and staff parking and maintenance facilities. At the time of its acquisition, the parcel included a few buildings. However, only one building currently remains on the property and it currently functions as a National Park Service maintenance building (Figures 23-29).

Note:
Between 2003 and 2009, the Edison Laboratories were closed to the public for renovations, which included the rehabilitation of the buildings. Between 2002 and 2003, Building 11 (No. 11) was relocated to its approximate original location within the Edison Laboratories site from Greenfield Village in Dearborn, Michigan. The building was previously removed between 1939 and 1940 in preparation for the Underground Storage Vault. Building 11 (No. 11) was not evaluated as part of the National Register documentation in 1980, but it is considered a contributing resource within the Laboratory Complex. (Building 11 [No. 11], does not have to meet Criteria Consideration B, Moved Properties, because it is in its approximate original location.) Additionally, the pump house is listed in National Register documentation and is on the park's List of Classified Structures. However, research for this inventory indicates the building was constructed in conjunction with the Main Storage Vault (No. 12) between 1940 and 1942, after the period of significance. On July 1, 1996, the New Jersey State Historic Preservation Office (SHPO) agreed with the National Park Service's finding that the Main Storage Vault was noncontributing because it was constructed after Edison's death.

Features with an (*) are described in the National Register.

Character-defining Features:

Feature: Physics Laboratory, No. 1 *

Feature Identification Number: 151705

Type of Feature Contribution: Contributing

IDLCS Number: 5452

LCS Structure Name: Edison Laboratories - Physics Laboratory

LCS Structure Number: 01

Feature: Chemical Laboratory, No. 2 *

Feature Identification Number: 151707

Type of Feature Contribution: Contributing

IDLCS Number: 271

LCS Structure Name: Edison Laboratories - Chemical Laboratory

LCS Structure Number: 02

Feature: Chemical Stockroom/Pattern Shop, No. 3 *

Feature Identification Number: 151709

Type of Feature Contribution: Contributing

IDLCS Number: 272

LCS Structure Name: Edison Laboratories - Chem. Stockroom/Pattern Shop

LCS Structure Number: 03

Feature: Metallurgical Laboratory, No. 4 *

Feature Identification Number: 151711

Type of Feature Contribution: Contributing

IDLCS Number: 273

LCS Structure Name: Edison Laboratories - Metallurgical Laboratory

LCS Structure Number: 04

Feature: Main Laboratory, No. 5 *

Feature Identification Number: 151713

Type of Feature Contribution: Contributing

IDLCS Number: 274

LCS Structure Name: Edison Laboratories - Main Laboratory

LCS Structure Number: 05

Feature: Power House-Boiler Room, No. 6 *

Feature Identification Number: 151715

Type of Feature Contribution: Contributing

IDLCS Number: 275

LCS Structure Name: Edison Laboratories - Power House-Boiler Room

LCS Structure Number: 06

Feature: Blacksmith Shop, No. 7 *

Feature Identification Number: 151717

Type of Feature Contribution: Contributing

IDLCS Number: 276

LCS Structure Name: Edison Laboratories - Blacksmith Shop

LCS Structure Number: 07

Feature: Small Storage Vault, No. 8 *

Feature Identification Number: 151719

Type of Feature Contribution: Contributing

IDLCS Number: 278

LCS Structure Name: Edison Laboratories - Small Storage Vault #8

LCS Structure Number: 08

Feature: Gate House, No. 9 *

Feature Identification Number: 151727

Type of Feature Contribution: Contributing

IDLCS Number: 279

LCS Structure Name: Edison Laboratories - Gate House

LCS Structure Number: 09

Feature: Building 11, No. 11

Feature Identification Number: 151729

Type of Feature Contribution: Contributing

Feature: Diamond Disc Vault, No.32 *

Feature Identification Number: 151731

Type of Feature Contribution: Contributing

IDLCS Number: 40010

LCS Structure Name: Edison Laboratories - Diamond Disc Vault

LCS Structure Number: 32

Feature: Blue Amberol Vault, No. 33 *

Feature Identification Number: 151733

Type of Feature Contribution: Contributing

IDLCS Number: 5453

LCS Structure Name: Edison Laboratories - Blue Amberol Vault

LCS Structure Number: 33

Feature: Water Tower, No. 20 in LCS, No. 34 in NR*

Feature Identification Number: 151735

Type of Feature Contribution: Contributing

IDLCS Number: 5454

LCS Structure Name: Edison Laboratories - Water Tower

LCS Structure Number: 20

Feature: Power Transmission Poles

Feature Identification Number: 151737

Type of Feature Contribution: Contributing

IDLCS Number: 40678

LCS Structure Name: Edison Laboratories - Power Transmission Poles

LCS Structure Number: S-2

Feature: Pump House

Feature Identification Number: 151739

Type of Feature Contribution: Non Contributing

IDLCS Number: 40692

LCS Structure Name: Edison Laboratories - Pump House

LCS Structure Number: B-1

Feature: Maintenance Building

Feature Identification Number: 151741

Type of Feature Contribution: Non Contributing

Feature: Main Storage Vault, No. 12 *

Feature Identification Number: 151747

Type of Feature Contribution: Non Contributing

IDLCS Number: 40696

LCS Structure Name: Edison Laboratories - Main Storage Vault

LCS Structure Number: 12

Feature: Black Maria, No. 13 *

Feature Identification Number: 151749

Type of Feature Contribution: Non Contributing

IDLCS Number: 280

LCS Structure Name: Edison Laboratories - Black Maria

LCS Structure Number: 13

Landscape Characteristic Graphics:

Figure 23. View looking south showing the Edison Laboratory Complex. Shown in the image are the Physics Laboratory (No. 1), Gate House (No. 9), and Main Laboratory (No. 5) (OCLP, 2011).

Figure 24. View looking north showing the satellite laboratories and main corridor within the Edison Laboratory Complex (OCLP, 2011).

Figure 25. View looking west showing the Power House (No. 6) (OCLP, 2011).

Figure 26. View looking south showing the Gate House (No. 9), Main Street wrought-iron gate, and Main Laboratory (No. 5) (OCLP, 2011).

Figure 27. View looking east showing the Building 11 (No. 11). The building was moved to Greenfield Village between 1939 and 1940, but was relocated back to its approximate original location between 2002 and 2003 (OCLP, 2011).

Figure 28. View looking south showing the Water Tower (No. 34) and Blue Amberol Vault (No. 33) (OCLP, 2011).

Figure 29. View looking east showing the Chemical Laboratory (No. 2), miscellaneous utility structures, and bench (OCLP, 2011).

Views and Vistas

Historic Condition (through 1931):
The view of the Edison Laboratories from Main Street was the most prominent view during the period of significance as the laboratories presented a dignified formal appearance. The Main Street facades of the Main Laboratory (No. 5) and Physics Laboratory (No. 1) were ornately detailed with a repetitive series of architectural patterns and forms and were connected to each other by the main entry gate arch. This gave the view of the Edison Laboratories a sense of continuity and unity. A major change took place during the period of significance when the huge five and six-story buildings of the West Orange Plant began to rise around the Laboratories. This created an imposing backdrop for the Laboratories.

Post-historic and Existing Conditions (since 1931):
The Main Street views of the Laboratories were slightly diminished with the planting of spruce trees between 1931 and 1955. However, the views were reestablished following the spruce trees removal between 2002 and 2003 (CLR, 1995: 101-102).

Character-defining Features:

Feature: Main Street View

Feature Identification Number: 151751

Type of Feature Contribution: Contributing

Small Scale Features

Historic Conditions (through 1931):
In the initial development of the Edison Laboratories, a brick-lined drainage swale was constructed along the southwest facades of the satellite laboratories. Eventually the drainage gutter was lined with concrete. In addition, a storage area for coal used in the Power House was established adjacent to the Chemical Storage/Pattern Shop. Following the 1914 fire, significant improvements were made to the utilities within the Edison Laboratories site. Fire hydrants were located along Valley Road (now Main Street) and within the courtyard and around the satellite laboratories. Several water outlets were also installed within the courtyard, providing the Edison Laboratories with emergency access to water. Finally, two underground gasoline storage tanks were installed adjacent to the Power House and in the courtyard. Although the exact use for these tanks is uncertain, it is presumed that the gasoline was for the many automobiles used at the site.

Two railroad trucks were added to the Edison Laboratories during the historic period. The railroad trucks were originally used at Menlo Park, but in 1917 they were brought to the West Orange Plant and used as exhibits on the Edison Laboratories site. A pavement test circle was also installed during the period. The circle was used for testing paving materials including stone, concrete, brick, metal, steel, and wood.

Until 1918, a six-foot wood picket fence surrounded the Edison Laboratories property. In 1918, this fence was replaced with a six-foot black, chain-link fence. This fence, however, enclosed the entire block rather than separating the Edison Laboratories from the remainder of the West Orange Plant. It allowed for outside vehicular and pedestrian access to Laboratories at the main gate on Main Street. After the picket fence was removed, several elements combined to create the separation along the Laboratories northeast and southeast boundaries, including the rear of the satellite labs, a wood-plank fence between the satellite labs, and portions of chain-link fence filling the remaining spaces.

Other features that were installed during the historic period included a Portland cement sidewalk plaque, and concrete wall. During the construction of the concrete sidewalk along Lakeside Avenue, a plaque was embedded within the sidewalk to designate it as Edison's Portland cement. At the Lakeside Avenue entry to the Plant, a concrete wall extended from the sidewalk to the east corner of the Power House. The wall was part of the fencing system separating the Laboratories from the remainder of the Plant. In the 1920s when an enclosed walkway was constructed connecting the Power House to the West Orange Plant administration building, the wall was shortened. At that time, it extended only from the walkway to the east corner of the Power House.

Post-historic and Existing Conditions (since 1931):
Following the historic period, the West Orange Plant administration building was removed, but the walkway that connected it to the Power House and the stairs that led to the entry remained. They are approximately three feet wide and are attached to the walkway. Various memorials and decorative objects were also added to the Edison Laboratories. A concrete slab produced with Edison's Portland Cement was introduced and a World War II memorial and flagpole were installed at the corner of Main Street and Alden Street.

Following the acquisition of the Edison Laboratories by the National Park Service in 1955, many changes were made to address visitor accessibility and safety. These improvements, as reflected within the landscape included the installation of many features such as benches, information and directional signs, lighting, trash receptacles, drinking fountain, and interpretative signage.

Today, the entire NPS property is enclosed by chain-link, wrought iron, and wood-plank fencing. The fencing has vehicular access in four locations: the south corner of the site on Lakeside Avenue, Main Street at the main gate and two locations on Alden Street. In addition to the vehicular access, a pedestrian entry also exists at the main gate. While majority of the fencing is chain-link, decorative wrought-iron fencing exists at the Main Street pedestrian and vehicular gates and at the Power House entry. A wood-plank fence connects the rear facades of three of the satellite labs (Nos. 2-4).

There are many small-scale features that currently exist in the landscape that date to the

historic period (1857-1931) including drainage system-concrete gutter, utility structures (cast iron valve heads and hydrants), pavement test circle, fences and gates, electric railroad trucks, a coal remnant, Administration Building (No. 25) stairs, Portland Cement sidewalk plaque, and concrete wall. Small-scale features added since the historic periods were the visitors' gate, Edison cement slab, WWII plaque/war memorial plaque, and National Park Service signage and furnishings. Today, the concrete gutter remains and continues to collect storm drainage for the site (Figures 30-35) (CLR, 1996:99-109).

Note:
The visitors' gate was determined eligible for listing on the National Register on July 1, 1996 by the New Jersey State Historic Preservation Office (SHPO) as part of the National Park Service's update of the List of Classified Structures. However, research for this report indicates it was installed after the period of significance.

Character-defining Features:

Feature: Drainage System (Concrete Gutter)

Feature Identification Number: 151753

Type of Feature Contribution: Contributing

Feature: Misc. Utility Structures

Feature Identification Number: 151755

Type of Feature Contribution: Contributing

Feature: Pavement Test Circle

Feature Identification Number: 151757

Type of Feature Contribution: Contributing

Feature: Boundary Fences and Gates

Feature Identification Number: 151759

Type of Feature Contribution: Contributing

IDLCS Number: 40677

Feature: 1st Electric Railroad Truck

Feature Identification Number: 151761

Type of Feature Contribution: Contributing

Feature: 2nd Electric Railroad Truck

Feature Identification Number: 151763

Type of Feature Contribution: Contributing

Feature: Coal Remnant

Feature Identification Number: 151765

Type of Feature Contribution: Contributing

Feature: Administration Building Stairs

Feature Identification Number: 151767

Type of Feature Contribution: Contributing

Feature: Portland Cement Sidewalk Plaque

Feature Identification Number: 151777

Type of Feature Contribution: Contributing

Feature: Concrete Wall

Feature Identification Number: 151779

Type of Feature Contribution: Contributing

Feature: Visitors' Gate

Feature Identification Number: 151781

Type of Feature Contribution: Non Contributing

IDLCS Number: 40679

Feature: Edison Cement Slab

Feature Identification Number: 151783

Type of Feature Contribution: Non Contributing

Feature: WWII Plaque

Feature Identification Number: 151785

Type of Feature Contribution: Non Contributing

IDLCS Number: 40687

Feature: Flagpole

Feature Identification Number: 151787

Type of Feature Contribution: Non Contributing

Feature: National Park Service Signage (Informational and Directional)

Feature Identification Number: 151789

Type of Feature Contribution: Non Contributing

Feature: National Park Service Furnishings (Benches, Trash Receptacles, Drinking Fountain)

Feature Identification Number: 151793

Type of Feature Contribution: Non Contributing

Landscape Characteristic Graphics:

Figure 30. View of the chain-link fence located along the northern boundary of the Edison Laboratory Complex (OCLP, 2011).

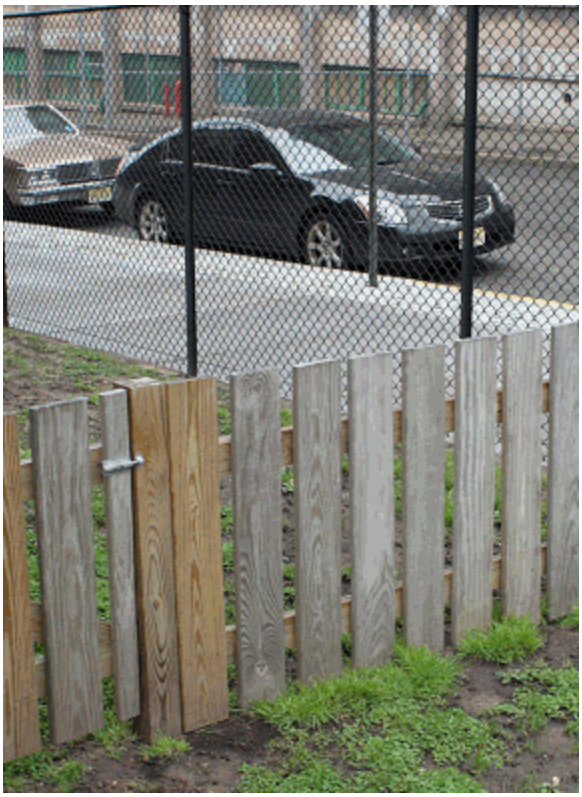


Figure 31. View of the wood fence and chain-link located along the southern boundary of the Edison Laboratory Complex (OCLP, 2011).

Figure 32. View of the coal remnant located along the southeast elevation of the Chemical Storage/Pattern Shop (No. 3) (OCLP, 2011).

Figure 33. View of the Portland cement sidewalk plaque located near the Lakeside Avenue entry (OCLP, 2011).

Figure 34. View looking south showing the Administration Building (No. 25) walkway and Lakeside Avenue gate (OCLP, 2011).

Figure 35. View looking south showing the World War II plaque within the Edison Laboratory Complex (OCLP, 2011).

Archeological Sites

The following archeological documentation is extracted from the "Archeological Overview and Assessment Thomas Edison National Historical Park: Laboratory Unit, Glenmont Unit, and Maintenance Area, West Orange, New Jersey" (2011), completed by The Louis Berger Group, Inc.

Prior to European settlement, the Edison Laboratories and Maintenance Area grounds were part of a larger area inhabited by American Indians, namely the Hackensacks. However, given the lack of previously documented prehistoric archeological resources within the urban area surrounding the Laboratories and Maintenance Area, and late nineteenth century development within and around the properties, there is no potential for prehistoric cultural development within the Edison Laboratories and Maintenance Area. While there is little or no potential for intact prehistoric cultural resources, approximately 1.0 acres of the Laboratory Complex are classified as having high historic archeological potential. These areas include locations within 25-feet of laboratory buildings 1 through 6 as these locations have yielded artifacts from the use and

discard of experimental materials and are likely to yield additional artifacts and/or features associated with experiments or other everyday uses. Although the majority of the buildings from the Edison Laboratories site currently exist, most of the buildings that comprised the West Orange Plant, including Building 24, no longer remain. They were demolished as part of the West Orange plant urban renewal plan. Currently, there are portions of the foundation of Building 24 along the Alden Street boundary of the Laboratory Complex.

Approximately .80 acres of the Maintenance Area are classified as having high historic archeological potential. These areas include locations within 25- feet of the former locations of nineteenth century residences and ancillary buildings located within the central portion of the Maintenance Area. Although not associated with the Edison Period, these locations have the potential to yield artifacts and features related to the everyday functioning of the residences and use of the landscape.

Condition

Condition Assessment and Impacts

Condition Assessment: Good

Assessment Date: 08/17/2011

Condition Assessment Explanatory Narrative:

The Laboratory Complex meets the definition of "good" because it shows no clear evidence of major negative disturbance and deterioration by natural and/or human forces. Between 2003 and 2009, improvements were made to the Laboratory Complex between 2003 and 2009. The work included the rehabilitation of the laboratory building; upgrades to the electrical and fire protection systems; relocation of Building 11 (No. 11) from the Henry Ford Museum and Greenfield Village in Michigan; removal of non-historic vegetation, such as the spruce trees along Main Street; installation of interpretative media; and improvements to the vehicular and pedestrian circulation.

Stabilization Measures:

There is currently one project in the Project Management Information System (PMIS) related to stabilization of landscape features: "Replace Brick Retaining Wall in Visitor Parking Lot" - $226,380 (PMIS # 83043).

Treatment

Treatment

Approved Treatment: Rehabilitation

Approved Treatment Document: Other Document

Document Date: 01/01/1977

Approved Treatment Document Explanatory Narrative:

Specific direction on the treatment of the Laboratory Complex is found in a number of park planning documents, the earliest of which is the park "Master Plan" (written in 1969, approved in 1971, and revised in 1977). The plan recommended that the landscape be managed to "restore, maintain, and preserve the site grounds, as accurately and practicably as possible, as they were in the historic period, 1886-1931." The plan recognized the need for further research to determine the appearance of the grounds in Edison's last years and that a Historic Grounds Report should be prepared. The "Master Plan" included a number of specific recommendations for the landscape, which included the acquisition of the former Mayer Motor Co. and McGraw-Edison Company (formerly Thomas A. Edison, Inc.) properties adjacent to the Laboratory Complex; the relocation of the Black Maria (Building 13); construction of a parking area on the former Mayer property (now referred to as the maintenance area), restoration of the pavement test circle and foundation plantings around the Physics Laboratory (Building 1) and the Main Laboratory (Building 5); and drainage improvements within the main corridor. The plan also called for the installation of a security fence around the perimeter of acquired land, reconstruction of the wood storage building; removal of all buildings on the McGraw-Edison Company (formerly Thomas A. Edison, Inc.) property; and the construction of a visitor center/administration building. The park subsequently implemented a number of the recommendations of the "Master Plan."

An additional report that has been developed to address the Laboratory Complex is the "Thomas Edison National Historical Park Long Range Interpretive Plan," completed in September 2009. The plan defined the overall vision and long-term (5-7 year) interpretive goals of the park, examined issues and influences affecting interpretation and education, and addressed programming, accessibility, wayfinding, and interpretive and visitor services. The plan identified five interpretive themes—innovation/impact (theme 1), Thomas Edison (theme 2), the process of invention/the workers (theme 3), Glenmont (theme 4), and the resources (theme 5), which included several program recommendations.

Between 2003 and 2009, the Edison Laboratories underwent major renovations. Through partnership with the Charles Edison Fund, Edison Innovation Foundation, General Electric, and the Friends of Thomas Edison NHP, the majority of the buildings were rehabilitated to improve visitor interpretation, access and safety; Building 11 (No. 11) was relocated to its approximate original location; the vehicular and pedestrian circulation was resurfaced with chip-seal asphalt to reproduce the appearance of the historic gravel surface.

There is currently one project in the Project Management Information System (PMIS) related to landscape treatment: "Design Accessible Entrance for Black Maria"- $11,248.64 (PMIS #163464).

Approved Treatment Completed: Yes

Approved Treatment Costs

Cost Date: 01/01/1977

Bibliography and Supplemental Information

Bibliography

Citation Author:	Commisso, Michael, Rose Marques, and H. Eliot Foulds
Citation Title:	Cultural Landscape Report for Glenmont, Thomas Edison National Historical Park
Year of Publication:	2010
Citation Publisher:	National Park Service, Olmsted Center for Landscape Preservation
Citation Author:	Beadenkopf, Kristofer M., Zachary J. Davis, et. al.
Citation Title:	"Archeological Overview and Assessment, Thomas Edison National Historical Park: Laboratory Unit, Glenmont Unit, and Maintenance Area, West Orange, Essex County, New Jersey"
Year of Publication:	2011
Citation Publisher:	The Louis Berger Group, Inc.
Citation Author:	Uschold, David L., and George W. Curry
Citation Title:	"Cultural Landscape Report for Laboratory Unit, Edison National Historic Site"
Year of Publication:	1996
Citation Publisher:	National Park Service, Olmsted Center for Landscape Preservation
Citation Author:	U.S. Department of the Interior
Citation Title:	“Thomas Edison National Historical Park Long Range Interpretive Plan"
Year of Publication:	2009
Citation Publisher:	National Park Service
Citation Author:	U.S. Department of the Interior
Citation Title:	“Thomas Edison National Historical Park, Statement for Management”
Year of Publication:	1990
Citation Publisher:	National Park Service

Citation Author:	U.S. Department of the Interior
Citation Title:	"Final Master Plan: Edison National Historic Site"
Year of Publication:	1977
Citation Publisher:	National Park Service
Citation Author:	U.S. Department of the Interior
Citation Title:	"The Master Plan: Edison National Historic Site"
Year of Publication:	1969
Citation Publisher:	National Park Service
Citation Author:	U.S. Department of the Interior
Citation Title:	"National Register Bulletin, Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places"
Year of Publication:	2002
Citation Publisher:	National Park Service
Citation Author:	Yocum, Barbara A.
Citation Title:	Historic Structure Reports for Boundary Fences and Gates and Buildings 1-9, 12, 13, 20, 32, and 33.
Year of Publication:	1998
Citation Publisher:	U.S. Department of the Interior, Building Conservation Branch, Cultural Resource
Citation Title:	Denver Service Center, Technical Information Center
Citation Title:	List of Classified Structures Database
Citation Title:	National Register Information System