

Birmingham Historical Society

A VISION FOR VULCAN

Background Reading for Mayor Richard Arrington

Research reports, photographs, Public Information, Press Clips, and Water Colors developed by the Society to support the documentation, restoration, and revitalization of the Vulcan Statue and Park

March 29, 1995

A VISION FOR VULCAN

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Vulcan Needs a big Fix, by John Archibald, *The Birmingham News*, 3 March 1995

Vulcan, Man of Iron, May Return to Form, *THE WALL STREET JOURNAL*, 22 February 1995

Vulcan, Dwight Young, *Historic Preservation*, the magazine of the National Trust for Historic Preservation, April 1995

Washington Paper, Review of **Making It** Exhibit

State of Alabama Engineering Hall of Fame, Program for the Induction of Vulcan as a engineering landmark, Auburn, winter, 1995

PUBLICATIONS

The Book of Vulcan, Philip Morris and Marjorie White, Birmingham Historical Society, to be released fall 1995

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The Society is researching, writing, and financing this volume intended to heighten public support for the restoration.

Interpretive Planning for Vulcan Park, Birmingham Historical Society, A proposal submitted to the Mayor's Task Force on Vulcan, 17 August 1994

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A broad-based group met several times to develop this proposal.

The Birmingham Industrial Heritage District Map, Birmingham Historical Society, 1994.

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Inventory of Historic Vulcan Photographs available in public archives including the Missouri Historical Society, the Birmingham Public Library Archives, and the University of Alabama at Birmingham.

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These photographs showed the many Vulcans over the many years of his several existences: the models, statuettes, and the statue at the World's fair, the state fairgrounds, the WPA park, and now.

Robinson Iron supported the acquisition of these photographs with a grant of \$1,000.00.

Nick Veloz Consultancy and Report fall 1993

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The Society identified and brought this conservator of outdoor statuary who works for the National Park Service in Washington D.C. to Birmingham to assist in solving the technical problems in the proposed restoration of the statue by Robinson Iron. The City of Birmingham supported the Veloz visit to Birmingham with a grant of \$1,500.00

DOCUMENTATION BY THE NATIONAL PARK SERVICE

Large format photography by the HAER photographer Jet Lowe, Historic American Engineering Record-National Park Service, Washington D.C., 1993.

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Vulcan Park, including Statue of Vulcan, Red Ore Mine, L & N- Birmingham Mineral Railroad, Report for the Industrial Heritage District Project of the National Park Service, Southeastern Regional office, Atlanta, Birmingham Historical Society, 1991.

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Vulcan Statue, Report for the Industrial Heritage District Project of the National Park Service, Southeastern Regional Office, Atlanta, Birmingham Historical Society, 1991.

Historical Report on Vulcan Park, Matthew Kierstead, Historic America Engineering Record, Edited Draft of 29 January 1994

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Vulcan Statue and Park Interpretive Drawing, Richard Anderson, Historic American Engineering Record-National Park Service, January 1994

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Vulcan Statue and Park, Matthew Kierstead, Historic American Engineering Record, Draft 30 September 1993.

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The Red Gap Branch of the Birmingham Mineral Railroad, including the portion currently being developed as "The Vulcan Trail" which extends from Vulcan Park past Valley View Mine to George Ward Park, Marjorie L. White, Birmingham Historical Society January 1994.

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MISSION STATEMENT FOR VULCAN AND HIS PARK

Existing problem: Vulcan is in a serious state of disrepair, in need of a new internal skeleton. The park-like setting in which he stands is dated and no longer serves the needs of the public.

Recommendations: 1) Vulcan must be dismantled and restored by ironmolders, conservators and structural engineers: his tower will be restored, by necessity, and returned to its 1930s appearance. An elevator inside the tower will carry visitors to an open-air observation deck. At the same time, the lighting design of the statue will be improved to dramatize this landmark of Birmingham's cityscape.

2) The park restoration will return the native vegetation, and the cascades, terraces and walkways of native stone. It will also feature the addition of a Visitors Center to enhance tourism potential. Inside elements of the center will include films, exhibits, meeting space and a gift shop.

Cost: \$10 million to be raised from private funding and public contributions.



VULCAN FACT SHEET

The Resume of a Man of Iron

Conception: Vulcan was born from a burning desire on the part of Birmingham businessmen to promote the area's industrial potential at the 1904 St. Louis World's Fair. Presenting the world's largest cast metal structure --second largest after the Statue of Liberty-- would surely make an impression. And it did (see Triumph of the Fair, below).

Gestation: A dramatic story, chronicled on the front pages of major New York newspapers: Sculptor Giuseppe Moretti, Italian immigrant, had 40 days to create the model of Vulcan in an unfinished New Jersey church in the dead of winter. Moretti, a popular figure on the art scene, shipped Vulcan's plaster cast "parts" to Birmingham foundries in segments. Meanwhile, the art world swooned with admiration over the work in progress.

D.O.B.: Birmingham Steel and Iron, operated by James R. McWane, went into action. The largest castings ever made, supported by money from the Birmingham public, began to form the Man of Iron. Time span from Vulcan's conception to his dedication at the World's Fair: 9 months. Total cost: \$20,000. A near miracle of technology and desire.

Triumph of the Fair: Vulcan "held court" in the center of the Palace of Mines and Metallurgy (a major pavilion), surrounded by other exhibits touting Alabama's minerals and industries. Fair attendance: 19 million. Awards: Best Exhibit in Palace (for Vulcan himself), silver medals for Moretti and McWane.

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VULCAN FACT SHEET

The Resume of a Man of Iron continued

Homecoming: After 7 months in St. Louis, Vulcan returned to Birmingham. But where? Birmingham ladies objected to his bare bottomed torso. The Alabama State Fairgrounds warmly accepted him --for 30 years he was a popular meeting place for families gathering at the fair.

Graduation: Finally, Vulcan truly returned home to the crest of Red Mountain, from which his original materials had been mined. Perched atop a pedestal, with a museum in his base, he became a highly-visible landmark on the Birmingham scene.

All Eyes on Vulcan: Once moved, he became the man to visit in Birmingham, the city's only real tourist attraction, and the premier place for first kisses and marriage proposals. The neon torch (shining green in times of traffic safety, red when fatalities occur) was added in the 1940s. Vulcan is the city symbol to all.

A Victim of Age: Following the common practice of the 1930s, Vulcan's interior was filled with cement, a substance which expands at a rate 20% higher than iron. With the passage of time, contracting with cold, expanding with heat, Vulcan's exterior cracked. He must now be repaired so that his long life may continue.

Help on the Way: Measures will be taken to repair Vulcan by removing him--temporarily--from his high perch over Birmingham, extracting the concrete, and stabilizing his structure. At the same time, his base will also be strengthened with a new steel frame.

STATS AT BIRTH

Claim to fame: Largest cast metal statue in world

Height of statue: 56 feet

Birth: Difficult and heroic; iron molders worked night and day

Weight: 120,000 lbs.

Foot size: 6 feet (can sleep one reclining person)

Arm length: 10 feet

Circumference of neck: 11 feet, 6 inches

Sum of his parts: Cast of iron in 15 pieces with flanges

SOUTHEAST JOURNAL

Vulcan, Man of Iron, May Return to Form

BIRMINGHAM—This city's symbol of steel- and iron-making, the Vulcan, had a dazzling debut in 1904. But since then, he has suffered 91 years of indignities.

He has been dumped alongside a railroad siding, mocked for being half-naked, painted as an advertising prop. He has been filled with so much concrete that it's oozing out of cracks all over his 56-foot, 120,000-pound body.

Is that any way to treat the Roman god of fire and the forge?

Now, it appears, the world's largest cast-iron statue is getting some respect. A mayor's task force is urging an \$8.7 million fund-raising campaign to restore Vulcan to its original form and purpose: honoring the city's iron and steelmaking heritage.

Herculean Task

"It's an extraordinary opportunity," says Marjorie White, director of the Birmingham Historical Society.

It also would be a huge undertaking. Vulcan would have to be taken down from his perch atop Red Mountain, then disassembled to have rusted-out parts recast. Vulcan Park would be refurbished and the statue's base restored to its original stone-masonry appearance, complete with an elevator to whisk visitors to an observation deck. The task force recommended a 1996 completion date, but a city official said yesterday that won't be possible.

Vulcan has met big challenges before. City business leaders, hoping to attract attention to the region's then-emerging metals industry, hired Italian sculptor Giuseppe Moretti to create Vulcan as an exhibit in the 1904 St. Louis World's Fair.



Hai Knafo

In less than six months, Mr. Moretti and 16 assistants made a full-size clay model in New Jersey, shipped plaster molds to Birmingham, where a newly formed company made 15 iron castings that in turn were shipped to St. Louis for final assembly.

Even though Vulcan's head didn't arrive until a month after the fair opened, the statue was a sensation, winning the grand prize and a bid from the city of San Francisco, which wanted to buy Vulcan to overlook the Golden Gate Bridge. Birmingham declined the offer, but had no money and

no plans for Vulcan after the fair.

That led to a life of shame for the largest ironman. The most promising idea of reassembling the statue in the city's main park was ditched after many of Birmingham's women protested that he was only half dressed—Vulcan's apron leaves his buttocks exposed. Vulcan spent more than 30 years at the state fairgrounds in Birmingham with an arm and hand attached incorrectly, so he couldn't grasp his spear or hammer. Instead, enterprising entrepreneurs used the statue to advertise pickles, ice cream and soft drinks.

Carrying a Torch

Finally, the local Kiwanis Club spearheaded Vulcan's move to Red Mountain, where masons built Vulcan Park as a Depression-era WPA project. To stabilize the statue, workers filled it to the shoulders with concrete, ultimately leading to 40 feet of cracks and the unseemly oozes. Vulcan has had one other task that has brought fame: In the late 1940s, as a traffic safety project, the Jaycees surrounded his spear with a neon torch that to this day glows red for 24 hours after each highway death.

A late 1960s renovation patched up Vulcan—and covered his pedestal with marble—but city officials have been worrying about his deteriorating condition for the past 10 years.

Birmingham lawyer Sam Frazier, who headed the latest task force, is optimistic the community will support Vulcan's return to respect. His only worry? "If we take him down and don't put him back up."

—Ken Gepfert

THE STATE OF ALABAMA ENGINEERING HALL OF FAME

Founded in 1987 by proclamation of the governor, and in recognition of the sesquicentennial of formal engineering education in the state of Alabama, the Engineering Hall of Fame honors, preserves, and perpetuates the outstanding accomplishments and contributions of individuals, projects, and corporations/institutions that have brought and continue to bring significant recognition to the state of Alabama.

Permanent archives will be established and maintained for the collection and display of memorabilia related to the lives, accomplishments, and contributions of those chosen for induction into the Engineering Hall of Fame. The office of the Board of Registration for Professional Engineers and Land Surveyors in Montgomery, Alabama provides temporary quarters for the Hall of Fame display.

The Engineering Hall of Fame is governed by an 11-member board of directors. This body establishes the criteria for selecting inductees, and determines the eligibility of candidates and how these candidates shall be elected to the Engineering Hall of Fame. All candidates must meet criteria established by the board for each category. Currently, there are three such categories—Individuals, Corporations/Institutions, and Projects.

Nominations for induction into the Engineering Hall of Fame are made by open call and by the members of the Engineering Hall of Fame Nominating Committee. This body is representative of most geographic areas and major engineering fields in Alabama. A selection committee, drawn from the membership of the nominating committee, designates those nominees who are to be inducted in a given year. Nominees who are not selected are held in the active file for consideration in succeeding years. This file contains biographical and other data on many outstanding individuals, corporations/institutions, and projects.

The board of directors is extremely proud of those who have been inducted into the State of Alabama Engineering Hall of Fame. Individually and collectively, they have made and continue to make significant contributions to the advancement of engineering and technology, leading to an enhanced economic, cultural, and political future for the state and nation. By their selection and example, they serve as symbols inspiring others to pursue rewarding and challenging careers in all engineering fields.

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State of Alabama Engineering Hall of Fame

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Earle C. Williams
Walter K. "Weary" Wilson, Jr.*

*Deceased

PROJECTS

ACIPCO Iron Melting Facility
Bankhead Tunnel
Interstate 10 Mobile Bay Twin Bridges
Joseph M. Farley Nuclear Plant
Lower Mobile Bay/Mary Ann Field Project
Lunar Roving Vehicle
McDuffie Coal Terminal

Muscle Shoals Canal
Refrigeration/Thermal Storage System (AL Power)
Saturn V Launch Vehicle
SRI High Temperature/Materials Evaluation Facility
Tennessee-Tombigbee Waterway
U.S. Steel's Fairfield Seamless Pipe Mill
Wilson Dam

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BCM Engineers, Inc.
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George C. Marshall Space Flight Center
Intergraph Corporation
Nichols Research Corporation
RUST International Corporation
SCI Systems, Inc.
Southern Company Services, Inc.
U.S. Army Missile Command

Except for the Statue of Liberty in New York harbor, no other figure in America is comparable to the statue of Vulcan, god of fire and metalworking, that stands atop Red Mountain in Birmingham, Alabama.

Conceived in 1903 by the Birmingham Commercial Club (now the Chamber of Commerce) as an exhibit from the district at the Louisiana Purchase Exposition in St. Louis, the famed Italian sculptor, Giuseppe Moretti, was entrusted with the work. Using iron made at Sloss furnace, Mr. Moretti had the figure cast from patterns of his own design at McWane Foundry, then located at First Avenue and Fourteenth Street. The anvil, block, and hammer were made by the Williamson Foundry Company which was across the street from McWane.

Because of the massiveness of the figure, it had to be cast in parts and the floor of the foundry was turned into the casting area. Although the legs went very well, the great torso had much shrinkage resulting in several cracks. Moretti had the workers fill the cracks with cement and to common knowledge, they have never been detected. The statue weighs 120,000 pounds, is 56 feet high and the metal in its body varies from three-fourths to two inches in thickness. The feet are six feet long and the head is seven and a half feet high and seven feet across. The spearhead that was originally in the right hand weighed 250 pounds and the hammer in the left, 300 pounds.

The cost of the project was \$27,000 which included a round trip ticket to the Exposition. Seven railroad cars were required to transport Vulcan to the Exposition where it was bolted together. The statue created such a sensation that it won the grand prize as the most outstanding exhibit.

On March 28, 1905, three rail carloads of parts arrived back in Birmingham and Vulcan



VULCAN
God of Fire and Metalworking

was stored until a decision could be made about what to do with it. For a time the statue was erected at the Alabama State Fair Grounds, but in 1935 Thomas H. Joy, one of the state's leading engineers and builders, and J. Mercer Barnett, past president of Kiwanis International, proposed the Kiwanis club sponsor placing the statue on top of Red Mountain. For more than two years, Joy devoted himself to the

carrying forward of the plan. The Tennessee Coal and Iron Division of the United States Steel Corporation offered a five-acre plot and the Works Progress Administration (WPA) provided the manpower to develop the area into a park and to erect a 215-foot high pedestal of native stone on which Vulcan would stand.

To make the statue as indestructible as possible, concrete reinforcing rods were extended well into the pedestal and legs and body of the statue. The lower cavities were filled with concrete for more stability. Once ensconced in this lofty position, the statue became a focal point for many activities and projects. The most notable was the removal of the spearhead in his right hand and replacing it with the Light of Life and Death. The red and green lights burn alternately signifying traffic fatalities. Installed in October 1946, it burned red for the first time ten days later and has been a grim reminder through the years that death often awaits the careless moment.

This effective safety promotion has received nationwide attention and was adopted as a statewide Junior Chamber of Commerce Traffic Safety Symbol.

A true example of technological achievement, Vulcan looks over the city and reminds citizens and tourists that the work done by the hands of American workers can endure for many lifetimes.

The Birmingham

MARCH 3, 1995

OUR 107TH YEAR

Vulcan needs big fix

Takeover cost:
8.5 million

an Archibald
staff writer

They want to take Vulcan apart.

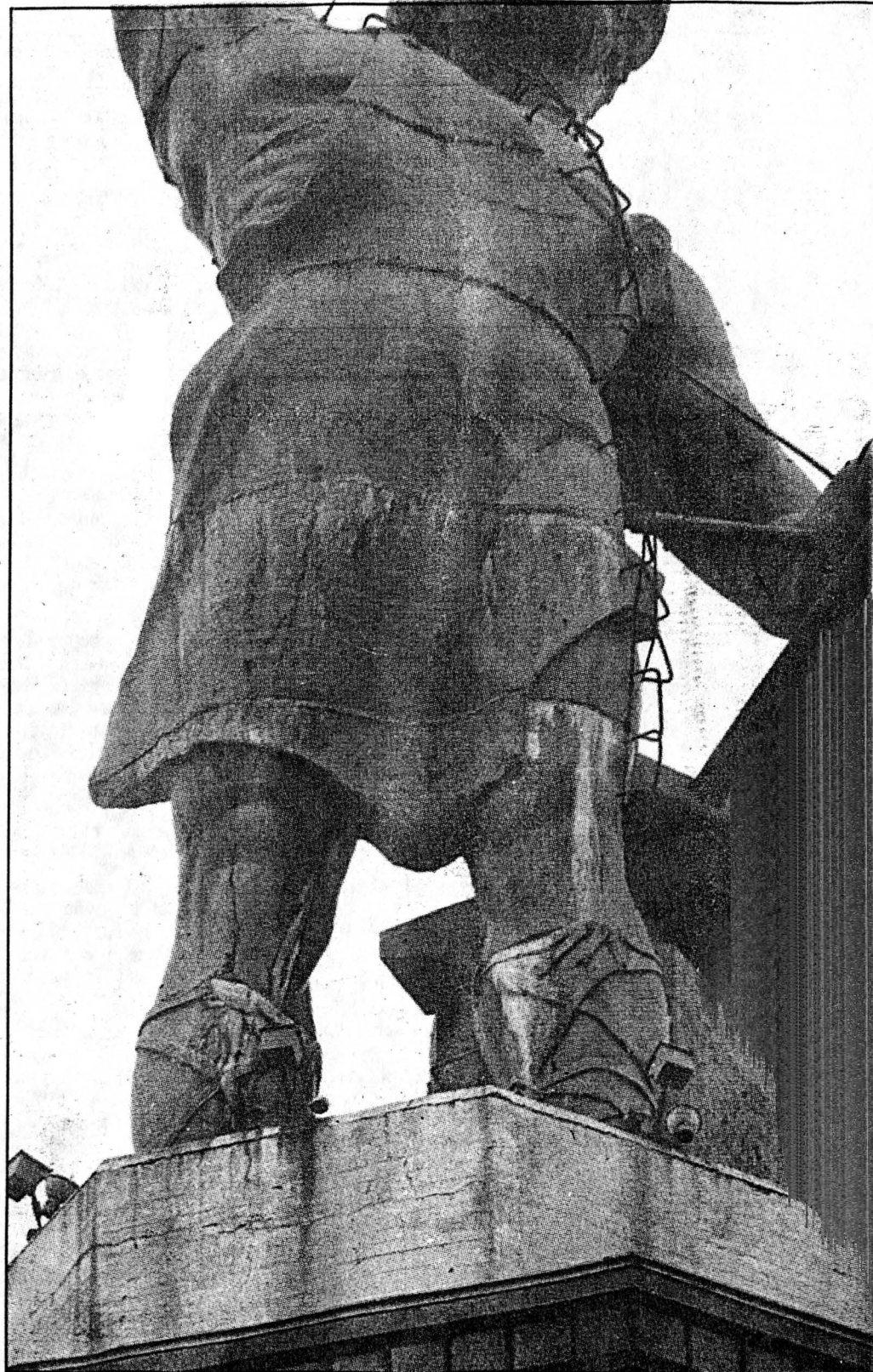
They want to take the world's largest cast-iron statue down piece by piece and gut him. They believe that, like London's Six Million Dollar Man, they can rebuild him. They can make him better.

Big question whether the repairs could be made before 1996, when the Olympic Games are to be held in Atlanta, turning off the city's tourist dollars to Birmingham.

A task force appointed by Mayor Richard Arrington last year has recommended that the city's most recognized landmark be taken down for extensive repairs and returned to his spot atop Red Mountain on a stone-clad pedestal much like a modernized version of the one he stood on in the 1930s.

But TV's Six Million Dollar bionic man was cheaper. The task

force estimates repairs to Vulcan to cost \$8.5 million, said Sam Frazier, a Birmingham resident who headed the task force. The city would pay for removing the concrete shell of Vulcan's body all the way up to his head and replacing it with steel supports. It would also build a new pedestal with an elevator inside for the statue's old-time appearance from the outside,



NEWS STAFF PHOTO/FRANK COUGHLIN

See **Vulcan**, Page 8A

Vulcan shows his age and the need for a cast-iron makeover.

News

8 SECTIONS

35¢

Vulcan

From Page 1A

an observation deck that provides a view of the statue and a surrounding park that harkens back to the configuration it received during the Works Progress Administration days of the 1930s, Frazier said.

"The big question is the money," he said. "The budget we came up with was \$8.5 million for everything, including education" programs in a museum building at Vulcan's new base.

"Sources are available," he said.

But the City of Birmingham does not want to get stuck with the entire bill, and funding for the project is up in the air, city spokeswoman Majella Hamilton said.

Arrington has not decided whether to pursue it. After receiving the task force report, the mayor commissioned a separate engineering study to evaluate the statue's structural integrity and the time it would take to make the proposed repairs, she said.

"He's made no immediate decision," Mrs. Hamilton said. "He's going over all the specific details."

A big question is whether the repairs could be made before 1996, when the Olympic Games come to Atlanta, spinning off soccer games and tourists to Birmingham, or whether the statue is in good enough shape to wait until after 1996 for repairs.

"It's important to a lot of different people for a lot of different reasons" for Vulcan to stand in his customary spot during the Olympics, Mrs. Hamilton said. "Certainly it is a symbol of Birmingham's history."

The engineering study found that repairs can wait until after the Olympics, and that the statue is in no danger of collapse, she said.

Pat Fox of the Greater Vulcan Society and the Birmingham Area Chamber of Commerce said the idea of dismantling Vulcan, repairing and rebuilding him has been around for years. It would help preserve the statue into the 21st century, she said.

"The statue definitely must be restored," she said. "I know certain

parts need to be recast. The fingers holding the anvil are rusted badly. It must be done or we're going to lose it."

The concrete in the statue, added to strengthen the frame when it was erected, has become its major enemy, she said. It expands and contracts at a different rate than cast iron. Also, rainwater that has fallen through holes in the statue percolates through the concrete and rusts the statue from the inside. It also leaches through and leaves unsightly stains on the statue's exterior.

And when the statue was constructed on Red Mountain it wasn't put up quite right, she said. The anvil arm doesn't line up quite right, and whether that's a flaw in the statue or the assembly remains to be seen.

The proposed repairs would bring Vulcan back to its glory days, before 1970s architects designed the much-criticized white marble pedestal with a protruding elevator and an observation deck with no view of the statue.

They would return the grounds to a more natural state, reminiscent of the pre-1970s, Frazier said.

"It was remarkable," Frazier said of the layout the task force wants to reproduce. "There was a water cascade in front and the paths were different. It was a more natural setting."

Birmingham Historical Society Director Marjorie White has researched the statue as the society makes its bid to have Vulcan declared a national historic landmark, a status that would require the federal government to preserve it. Its preservation is vital because, despite being the target of jokes, Vulcan is "a symbol of the triumphant emergence of Birmingham as a major industrial center in the South," she said.

"His raised arm means triumph, that Birmingham is a giant industrial center," she said. "And it still is. Birmingham is the cast-iron pipe capital of the world."

Birmingham Historical Society

Publication Description

The Book of Vulcan

Birmingham's landmark of American monumental public sculpture, the 56-foot-tall Vulcan atop Red Mountain, will soon have his story told as never before. During 1995 Birmingham Historical Society plans to publish *The Book of Vulcan* full of fresh information and amazing figures about the venerable symbol of the city.

Often taken for granted, this largest cast iron sculpture in the world and largest sculpture in the United States after the statue of Liberty in New York harbor, will come to life in an accessible, visually pleasing and affordable volume.

Sponsored by the Birmingham Commercial Club (later chamber of commerce) as a way to promote the emerging New South city, Birmingham's prizewinning Roman god of the forge entry in the 1904 St. Louis World's Fair was created by the sculptor Guiseppi Moreti, cast in Birmingham and shipped to the fair within six months.

In addition to charting this remarkable effort, *The Book of Vulcan* will shed new light on what has happened to Vulcan since the St. Louis fair: his sojourn at the fairgrounds, his move to Red Mountain, remodeling in the 1970s, and the current proposals to restore the statue and grounds to premier condition and construct a new Visitor Center at the site.

Planned as a 48-page book with embossed cover and liberally illustrated with historic and current photographs, *The Book of Vulcan* will become a favored Birmingham souvenir, a valuable addition to local school programs and a quick reference for anyone who wants to know more about our singular monument.

INTERPRETIVE PLANNING FOR VULCAN PARK

Birmingham Historical Society

Submitted to the Mayor's Task Force on Vulcan

August 17, 1994

INTERPRETIVE PLANNING FOR VULCAN PARK

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INTERPRETIVE PLANNING FOR VULCAN PARK

MISSION

- . To become a dynamic interpretive site that tells the story of Vulcan and of Birmingham

MESSAGE

- . The Vulcan Story
 - Identification with Birmingham Industry
 - Mythology
 - How and By Whom Made
 - Travels/Finding a Home
 - Restoration
- . A Capsule History of the City
 - Geology
 - Mining and Manufacturing
 - City Growth
 - Vulcan Comes to the Mountain
 - Today's Birmingham

MEDIA

- . Interpreters and informed, objective, enthusiastic personnel, audio visual presentation, permanent exhibits, wayside exhibits, publications, souvenirs/sales, recreational experiences, schools program including workshops, tours and curriculum development, changing exhibits, festivals, tours, special and fund raising events
- . Interpretation oriented to visitor experience at facilities including visitor center, statue/monument, terraces, walkways and overlooks, mine site, mineral railroad trail

AUDIENCE

- . Casual visitors
 - Locals showing off the city
 - Visitors to the city
 - Recreational users - walkers, hikers, romantics
- . Repeat users
 - School groups
 - Recreational users
 - Attendees at special events, changing exhibits, programs

GENERAL THOUGHTS ON INTERPRETIVE PLANNING

The development of interpretive programs and their supporting visitor facilities should follow these general steps.

1. Have a **complete history** of the site and a **clear understanding of its significance**
2. Develop a **complete map** and **topographic model** of the site with description of historic, geological, and other features which will prove useful for telling the story and also for noting potential maintenance and safety problems
3. Complete a thorough **archeological investigation** of the site so that development does not harm the historic fabric and the known history of the site is enhanced. This should include identification of prehistoric and historic features and minimally comply with the Section 106 Review process.
4. **Stabilize and interpret the historic resources.**
5. **Assemble and stabilize other artifacts** identified to assist with interpretation and provide environmentally controlled and monitored storage.
6. Have **personnel with a thorough knowledge of the site's history, what the site offers, the artifacts, and available resources.** These personnel should have objective points of view, but passionate appreciation of the site. They may include staff and volunteers.
7. **Decide what the visitor is to be told and what kind of program is feasible given available resources** -- audio visual programs, museum exhibits, wayside exhibits, interpreters.
8. Determine **how the visitor will move from idea to idea.**
9. **Plan buildings, walkways, and activities** which will not threaten the historic resources.

Following these development steps demands a perfect knowledge of the resources and lots of money and personnel. Keeping these steps in mind may prove more useful.

GUIDING PRINCIPLES FOR THE VISITOR EXPERIENCE

A visitor who feels well oriented, welcome, and comfortable is more receptive to any interpretive message. To accomplish this ...

1. A site must be easy to find with good signage and mapping directing the visitor to the site.
2. A well-oriented site should move the visitor through it in an orderly sequence while presenting options to expand the visit
3. A site must include unobtrusive, readily accessible restrooms. Ideally, this means restrooms at the beginning, end, and middle (if the distance is great) of the tour route.
4. A site must have informed personnel on site to greet the visitor.

Informed interpretive personnel provide the best dynamics for a quality visitor experience.

PROPOSED VISITOR EXPERIENCES FOR VULCAN PARK

SCENARIO 1 - CASUAL VISITORS

ARRIVAL SEQUENCE-PARKING

INTERPRETIVE CENTER

- . **Rest rooms**, accessed from the outside

- . **Audiovisual/exhibit experience**

Stories: Vulcan and the men who created him and the industrial district ... a capsule history of how the place came to be, an overview of regional growth

Media: Eight-(short) minute film in "black box" theater which is an integral part of the continuing visitor exhibit (foundry ?) experience which may include large-scale photography, models, reproductions, or dioramas

Personnel: knowledgeable, courteous, enthusiastic folks including full time staff and volunteers

- . **Sales area**

Souvenirs, publications as an integral part of interpretation, information on other sites to visit

(Offices, kitchen, storage/equipment facilities would not be visible to casual visitor, nor would meeting areas for other usage of the site. This meeting area might include space for changing exhibits. Maintenance operations should be housed in a separate facility.)

Note: This site activity may be open during fewer hours than the statue, tower, and recreational aspects of the site.

VULCAN STATUE AND TOWER

- . **Interpret City View from top of tower**

Stories: explanation of what visitor can see: the view of Jones and Shades Valleys and of the Red Mountain crest

Media: text etched in glass, displays /telescopes with historic views

- . **Figure out what to do with the left over space at the base of the tower**

Consider this space as a major space for public entertaining with option for gatherings to spill out onto the terrace overlooking the city

PROPOSED VISITOR EXPERIENCES FOR VULCAN PARK cont.

SCENARIO 2 - OPTIONS FOR EXPANDED VISITS and RECREATIONAL USE

Develop PARK/TRAILS with interpretive media to

- . City Overlook
- . Lone Pine Mine
- . Mineral Railroad Overlook/Terrace
- . Mineral Railroad Roadbed

Stories: WPA park construction, Italian labor force, mining and railroad history of site, mining and railroad labor force

Media: waysides, coordinated signage

SCENARIO 3 - FESTIVALS/SPECIAL EVENTS/EDUCATIONAL PROGRAMS

Develop an **educational program** for the schools with workshops, tours, and curriculum materials tied to existing and ongoing heritage education programs

Develop a **major annual event** that focuses attention on the site

Consider piggy-backing with the already existing events: the July 4 Fireworks and the Vulcan run.

Develop a series of annual special events, tours and programs highlight various aspects of the site

Develop **changing exhibits**

INTERPRETIVE THEMES FOR VULCAN PARK

THE VULCAN STORY

- . symbol of Birmingham iron industry
- . mythology
- . how and by whom made
- . travels/finding a home++

A CAPSULE HISTORY OF THE CITY

GEOLOGY

- . brief history
 - broad sea deposits/mountain building++
- . iron ore, coal, limestone/dolomite++
 - how deposited, grades, where deposits located

MINING

- . types of mining++
- . location of mines++
- . Mineral Railroad++

MANUFACTURING

- . History of ironmaking/tied to District
 - Catalan forges
 - Early and modern foundries
 - Industry today++
- . Essentials of operations

CITY GROWTH

- . prehistoric/historic
- . establishment of Jefferson County/agricultural economy
- . recognition of resource potential
- . railroad and industrial hub/county seat
- . the magic city
- . economic ups and downs++
- . use of chronological chart comparing

THE CITY TODAY++

PEOPLE

Creeks/Cherokees
Early settlers/preBirmingham
Blacks
Whites
New Settlers/post Birmingham
Industrialists/Workers++
Origins
Where they settled
Where they worked
What life was like for them
What they contributed
Civil Rights issues

INTERPRETIVE THEMES TIED TO OTHER PLACES TO SEE

VULCAN

- . Birmingham Museum of Art ties ?

A CAPSULE HISTORY OF THE CITY

GEOLOGY

- . Red Mountain Museum/Cut/Geological Walkway
- . Smith Hall/Alabama Museum of Natural History, Tuscaloosa
- . Ruffner Mountain Nature Center
- . Discovery 2000

MINING

- . Alabama Mining Museum, Dora
- . Aldrich Mining Museum, Aldrich
- . Ruffner Mountain Nature Center
- . Discovery 2000
- . Active Operations

MANUFACTURING ...HOW IRON PRODUCED

- . Tannehill Ironworks/ State Historic Park, Tannehill
- . Brierfield Ironworks/State Historic Park, Brierfield
- . Shelby Ironworks, Shelby
- . Irondale Furnaces, Mountain Brook
- . Sloss Furnaces National Historic Landmark
- . U.S. Steel Fairfield Works
- . Discovery 2000

CITY GROWTH/PREHISTORY

- .Arlington Historic House and Gardens

RAILROADS

- . Heart of Dixie Railroad Museum, Calera

PEOPLE

- . Birmingham Historical Districts, commercial and residential
- . Relevant historic houses open to the public
 - Arlington House
 - William Cook House, Nauvoo
 - Owen House, McCalla
 - Corry House/Old York, Oakman
 - Jemison House, Tuscaloosa
 - Battle Friedman House, Tuscaloosa
 - Dearing House, Tuscaloosa
- . Rickwood Field
- . Civil Rights Institute
- . Sixteenth Street Baptist and other Civil Rights Churches

MOST PRACTICAL MOVES TO BEGIN INTERPRETIVE PLANNING

1. Identify the client group that is going to push the project now, and for the long term.

- . Involve the client group in the planning process.
- . Client group should have interpretive and fund raising capabilities as well as ability to coordinate public, private, and political interests.
- . Client group should enlist volunteer support for programs, sales, and fundraising. The models of the Birmingham Botanical Gardens Society and Auxiliary and Friends of Rickwood may be appropriate to develop an affiliate relationship.
- . Study after study of Vulcan Park has identified this is the No.1 priority.

2. Pull together personnel with greatest knowledge of Vulcan, its history, and those artifacts and visual materials that are available for interpretation.

- . While **exhibit/interpretive design firms** can do the research, giving a designer or film maker a basic concept and well identified sources saves money and probably produces a better end result.

3. Research/identify artifacts and interpretive media

- . Illustrating the storyline through photographs and drawings and audiovisual presentations seems to be the most appropriate initial venue for exhibit development. Research on the site and easily available artifacts are limited. Models, reproductions, dioramas could also be constructed.
- . The views from Vulcan, the WPA works, the mining structures, and the mineral railroad provide good subjects for **wayside exhibits**. Plastic embedments or anodized aluminum plaques would provide vandal resistance, long-lasting, attractive exhibits. Each wayside should be specific to **what the visitor can see at this point**.
- . If multiple media are used, they should present different aspects of the overall story. Each succeeding media should build upon what the visitor has just seen, but not repeat the previously provided information.

4. Develop an overall plan in phases which to allow improvements as money and display items surface seems appropriate.

- . The most exciting site is one which appears to offer something different each time one visits. An interpretive program can accomplish this through diverse offerings so that the appearance of change is an illusion.

The Birmingham Industrial Heritage District



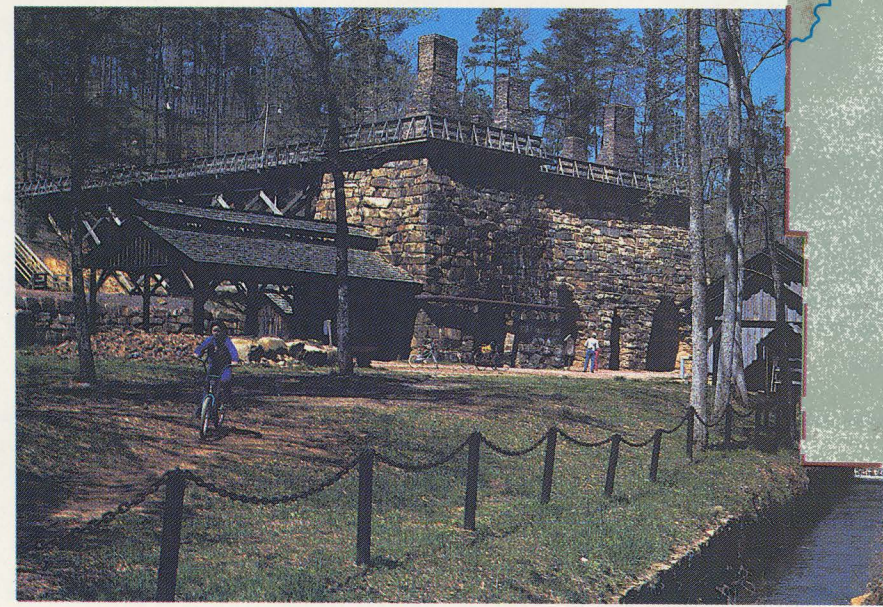
Alabama Mining Museum

It all began with the area's plentiful coal, iron ore and limestone, the minerals for making iron and steel. Coal lies in the hills along the Cahaba and Warrior Rivers. Mining of coal commenced here in the 1820s and continues to this day.



Tuscaloosa Heritage Commission of Tuscaloosa County

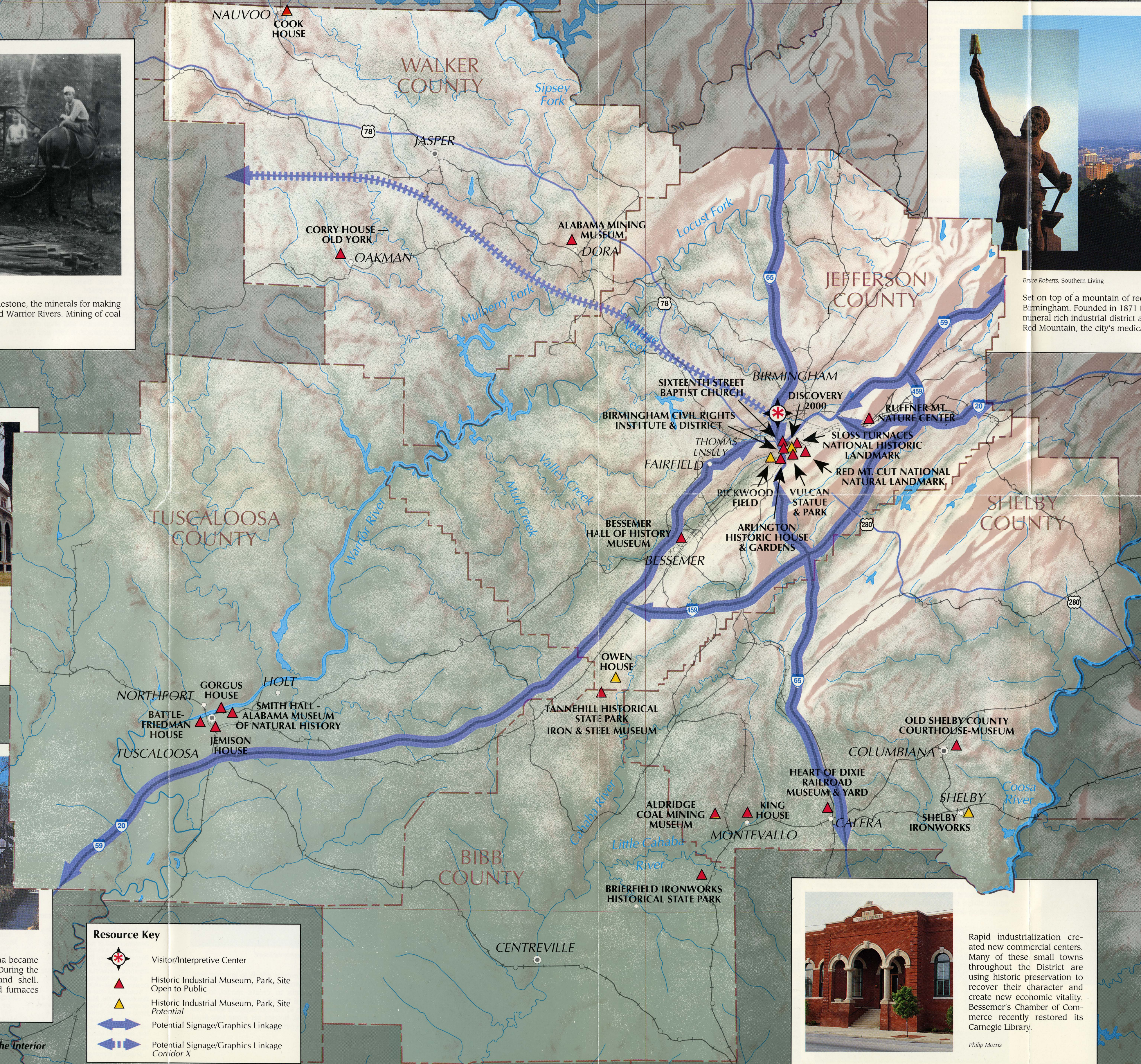
The story unfolds in the Old South. Tuscaloosa's forward-thinking Robert Jemison planted cotton, but also invested in stage coach lines and railroads, saw mills and iron foundries, coal and ore mines. His palatial "city" house now serves as a visitors center in this university town.



John O'Hagan

Possessing both the minerals and the industries, Alabama became the heart of the Confederacy's industrial war machine. During the war, the Tannehill furnaces poured iron for shot and shell. Destroyed in 1865 by federal troops, the reconstructed furnaces welcome today's visitors to a wooded state park setting.

Based on maps of the United States Department of the Interior Geological Survey, Reston VA.



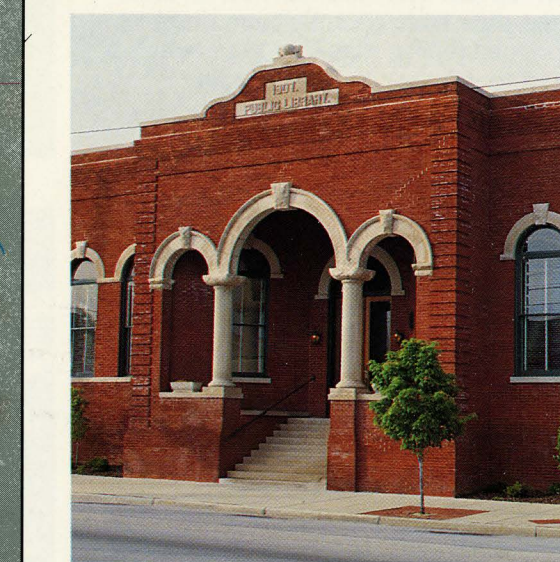
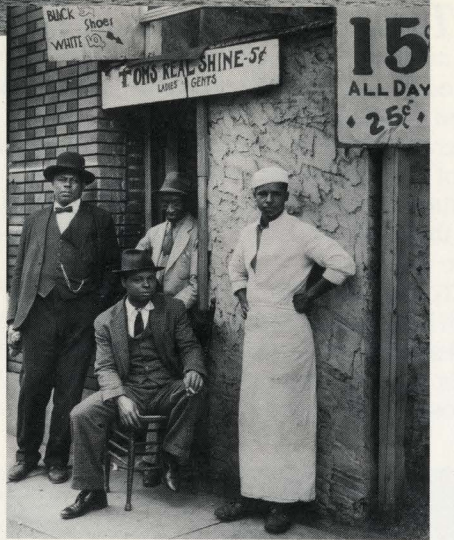
Bruce Roberts, Southern Living

Set on top of a mountain of red iron ore, Vulcan, the colossal iron man, surveys the New South city of Birmingham. Founded in 1871 to help the South back on its feet, Birmingham remains the center of this mineral rich industrial district and the South's premier industrial workplace. In the valley at the base of Red Mountain, the city's medical and commercial centers also rise on beds of limestone rock.



Birmingham Public Library Department of Archives and Manuscripts

From the 1880s to the 1920s, Birmingham grew like magic. City center blocks filled with fine hotels, stores and skyscrapers. Southerners both black and white along with immigrants from 28 different nations sought opportunity in the big city. 20th Street, 1909 (above), Fourth Avenue Business District, 1930s (right).



Rapid industrialization created new commercial centers. Many of these small towns throughout the District are using historic preservation to recover their character and create new economic vitality. Bessemer's Chamber of Commerce recently restored its Carnegie Library.

Philip Morris



Sloss Furnaces National Historic Landmark

Steel-jacketed furnaces produced iron to create cast iron stoves, cotton gins, steel, and especially cast iron pipe. Steam locomotives moved raw materials to the furnaces and transported the finished goods to markets across the nation.

The Birmingham Industrial Heritage District

It began with the iron ore, coal and limestone underlying the area. Early ironmaking served the agricultural economy. Civil War demand for armament bolstered nascent industry. Soon after the war entrepreneurs forged a New South industrial district from fortunate geology, new rail and water links and innovative technology.

"Birmingham District" is the name given in the 19th century to the five county area where the exploitation of mineral resources during the industrial revolution built the most important industrial center in the South. Located at the southwestern end of the Appalachian Mountain chain, the District includes Jefferson, Tuscaloosa, Bibb, Shelby and Walker counties, encompassing approximately 4,650 square miles and a population of more than 985,000.

The map on the reverse side charts topographic features and major historic sites of the District. To the south of what is now Birmingham (founded 1871), antebellum and Civil War forges and furnaces developed in Bibb and Shelby counties. To the north and west lie the coal fields of Walker County and the Warrior River flowing through Tuscaloosa, which served as both an antebellum state capital and center of commerce.

The city of Birmingham was formed at the center of the District. A dispersed metropolitan area clustered around mills and mines attracted both native Southerners and ethnic immigrants. The work was hard and conditions often brutal.

After the Civil War, the arrival of the railroads and breakthroughs in technology led to Birmingham's spectacular rise as the South's foremost industrial workplace. The District became the nation's premier foundry ironmaking center. Workers in area foundries cast iron into hundreds of products, especially iron pipe for the transport of waste and water. The District also became a regional steel and coke producer. To feed the furnaces and mills, entrepreneurs created the second largest underground iron ore mining center in the United States, the largest group of open pit brown ore mines and the fifth largest coal mining center. Construction of locks and dams along the Warrior River linked the District to international markets through the port of Mobile. A vast rail network accessed other markets nationwide.

For 100 years, from the Civil War to the 1960s, mineral-based industries dominated the regional economy. Communities such as Fairfield, Woodward, Piper, Dora, Wenonah, Mulga, Overton, Brookwood, and Shelby were established to service the needs of industrial companies and to provide housing for their employees.

Today, the District's economy is highly diversified with trade and service industries related to health care, engineering, telecommunications, education and finance, yet manufacturing and mining retain a significant presence accounting for 20 percent of local employment. Historic industries, communities and cultures born in the Industrial Revolution, matured in a century of growth and diversification, and seasoned in the triumphs and tragedies of the Civil Rights era, are the foundation of today's Birmingham. They survive as the Birmingham Industrial Heritage District.

Sloss Ironmaking System

The presence of minerals for ironmaking within a few miles of Birmingham gave the District a competitive edge. Local industry developed blast furnaces well suited to these minerals and railroads to speed those minerals to the furnaces. Ironmakers could stand on top of these furnaces and watch the mines and quarries produce the raw materials knowing with satisfaction that those minerals would be fed into their furnaces the same day.

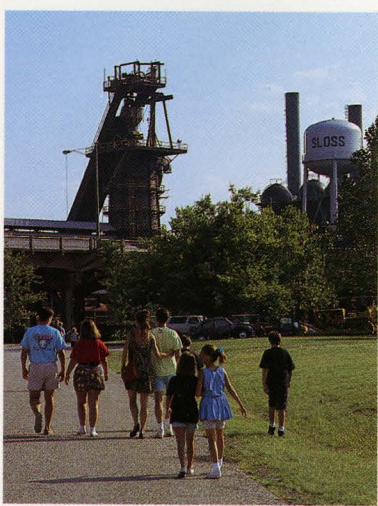
Today, the Sloss City Furnaces, silent since 1970, teach history and ironmaking. Ironworkers still pour and blacksmiths still shape metals, and the furnaces and cast sheds fill with tours and festivals. Pictured (below, right) is Sloss's 10th Birthday Celebration, October 1993.



Jet Lowe, Historic American Engineering Record

Former mining reserves at Ruffner (above) which provided ore and limestone to the City Furnaces serve today as the 538-acre Ruffner Mountain nature preserve. Visitors follow wooded trails through industrial ruins.

At Sloss's Brookside mining community, eastern European coal miners and their families established St. Nicholas Russian Orthodox Church, used yet today (left).



Phillip Morris

Red Mountain Minerals & Mansions

Red Mountain is named for the red iron veins which supported District ironmaking. From the Civil War to the 1960s, more than 100 red ore mines extended 16 miles from Ruffner to Bessemer, along the ridge overlooking Jones Valley in which Birmingham is located. After the 1880s, a system of railroads tied these mines to nearby furnaces and mills.

Ore mining on the mountain evolved from inexpensive outcrop stripping to capital-intensive, highly-mechanized underground mining. The richest ores and most productive mines were located at Spaulding, Ishkooda, Wenonah, Sloss, Woodward, Muscoda and Rainmund. These underground mines extend for three to five miles into the mountain and under the Shades Valley floor.



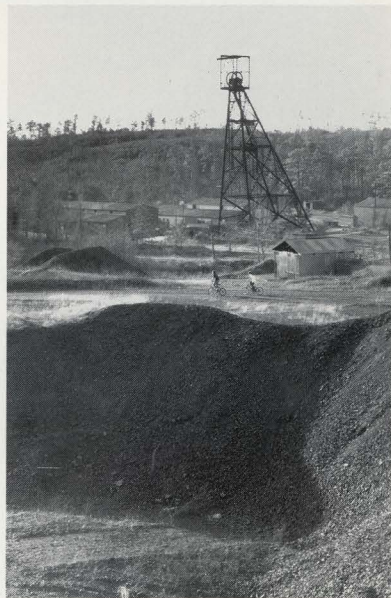
John O'Hagan

Remaining today along abandoned railroad beds at the mountain's crest are extensive mine ruins, the mansions of the industrial barons, and many early 20th century mining camps, now suburban communities (below, left). At Red Mountain highway cut (above), the exposed rock strata reveal 160 million years of geological history. Since the 1970s, a walkway along the eastern side of the cut has served as an open-air exhibit.

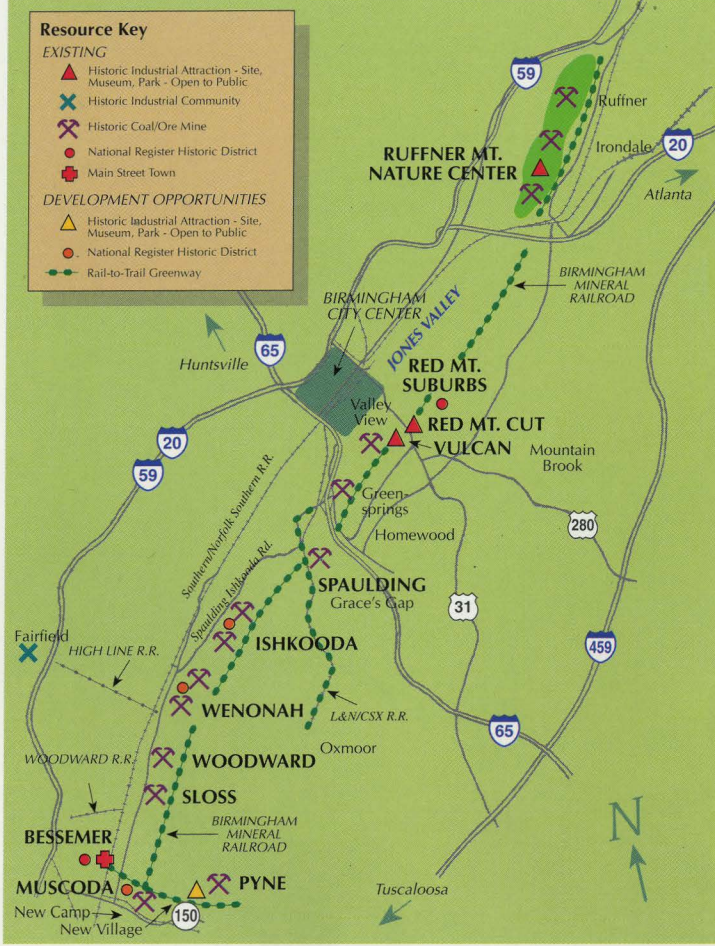
Boys race bikes across immense tailings piles which are refuse from the former Pyme ore mine near Bessemer. A 180' (below, right)



Phillip Morris



Jet Lowe, Historic American Engineering Record



hoist frame looms above the mine buildings that now serve as a metal processing center. Their owner and staunch protector of the hoist fends off dealers seeking to scrap his industrial icon.

Tannehill to Brierfield Trail



Beth Maynor

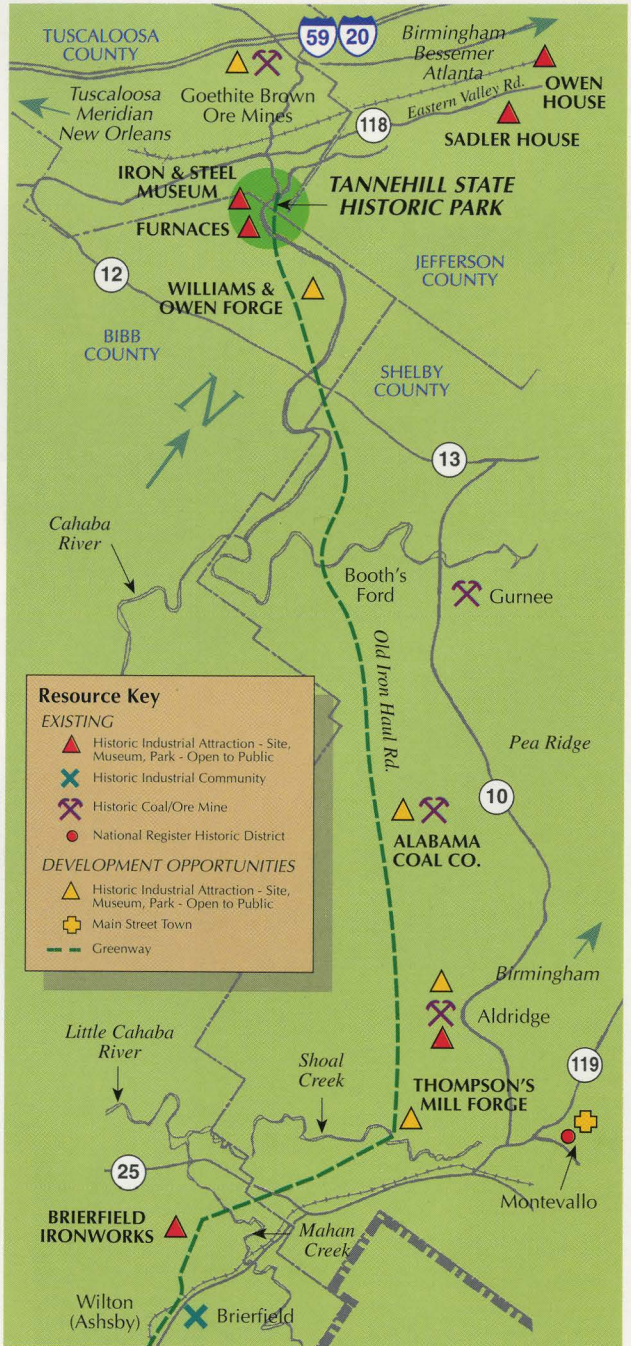
The Tannehill Trail, a linked system of natural, historical and recreational parks and greenways, incorporates existing state and local parks and other historic sites including the 1830s Owen House (below, left) on Eastern Valley Road. When fully developed, the trail will follow the "old iron haul road" linking the Tannehill and Brierfield furnaces to other Confederate military sites and the rail head near Montevallo.

Tannehill's Iron and Steel Museum (below, right) traces area history from Creek Indian days to the destruction of the furnaces by federal troops in 1865.

By the 1820s, brown ore deposits along the Cahaba River had attracted ironmaking needed to support early agriculture in the region. From the antebellum era to the present, coal has also been extensively mined along the River. The free-flowing Cahaba (above), greater Birmingham's primary source of drinking water today, provides a rich habitat for fish and flora as well as recreation. Portions of the river have recently been designated the state's first "Outstanding Alabama Waterway," a designation designed to enhance its water quality.



Jet Lowe, Historic American Engineering Record



John O'Hagan

Tuscaloosa

Located in 1819 on the Warrior River, Tuscaloosa served as Alabama's capital from 1824 to 1846. The state established the University of Alabama here in 1820 and the Geological Survey in 1847. Education and transportation (agricultural products at first, then mine and industrial products) became and remain mainstays of the city's economy. The great wood trestle railroad bridge (below, left) spanning the Warrior River links Tuscaloosa to neighboring Northport and to more distant markets in the North and Midwest.

Tuscaloosa's geological survey collections at Smith Hall (right) and her antebellum mansions survive from the era when the city led the development of the Birmingham District.

Gen. Josiah Gorgas, Confederate Ordnance Bureau chief, served as University president in the 1870s and resided on campus (below, right). He is credited with initiating large-scale development of Alabama's mineral industries.



Marjorie L. White

Shelby County

Laying track and retarding rust keep Heart of Dixie Railroad Museum volunteers (below) hard at work at their Calera railyard. Since 1962, more than 300 rail enthusiasts have donated talents to preserving memorabilia and maintaining rolling stock from the steam



Marjorie L. White



Jet Lowe, Historic American Engineering Record



Jet Lowe, Historic American Engineering Record



Marjorie L. White

era when the mighty iron horses were built and operated to transport goods and people.

At the historic Shelby Ironworks, energetic volunteers assist professional archaeologists documenting the state's first (1861) rolling mill. The 520-acre Shelby Ironworks site also includes former brown ore mining pits (now lakes), and the 1901 Shelby Hotel (above). Volunteers also donate hours to preserving historical records at the old Shelby County Courthouse and keeping the history of coal mining at Aldrich alive.

Walker County & Warrior Coal Country



Alabama Mining Museum

The Warrior River links the coal fields of Walker, Jefferson and Tuscaloosa counties to the Gulf of Mexico at the port of Mobile, 455 miles to the south. Entrepreneurs began shipping coal downriver to markets in Mobile and New Orleans in the 1820s. Coal also fueled locomotives. Beginning in the 1870s, the Warrior field proved its coal excellent for making coke, the fuel for iron and steelmaking. Mining expanded. In 1915, federally funded locks and dams opened the river to year-round travel, mining, and power generating. Chemical and other industrial plants grew at sites along the river from Cordova to Holt and Tuscaloosa.

Planning for Industrial Towns

Bringing industry to the wooded hills and farmlands of northern Alabama presented opportunities to plan new towns. More than 100 communities were established, many of which still remain in the District. In the early years, civil and railroad engineers laid out company houses as well as the industrial plants.

The four-room frame house, known as a "square-top," became the District's principal industrial house type. Square-tops were most often set in long rows such as these at the Muscoda red ore camp (right).



Jet Lowe, Historic American Engineering Record



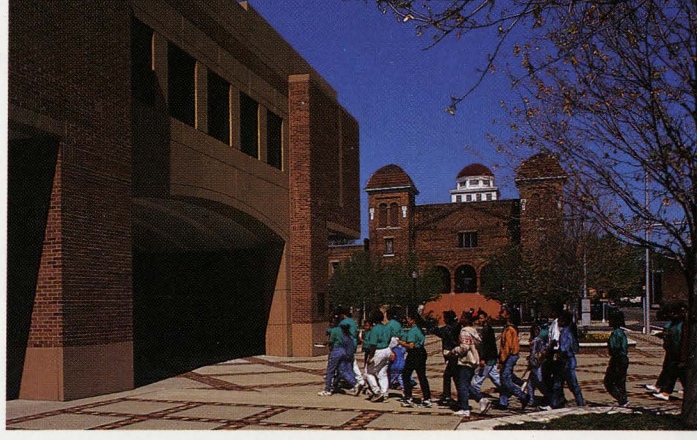
Jet Lowe, Historic American Engineering Record

By the early 20th century, efforts to improve conditions for industrial workers led several companies to hire noted planners to create model towns. George Miller designed Fairfield in 1909 just as the U.S. Steel Works began to rise on adjacent land. His plan featured well-built houses set along tree-lined parkways (left) and a generous provision for civic and open spaces.

Birmingham...City at the Center of the District



Phillip Morris



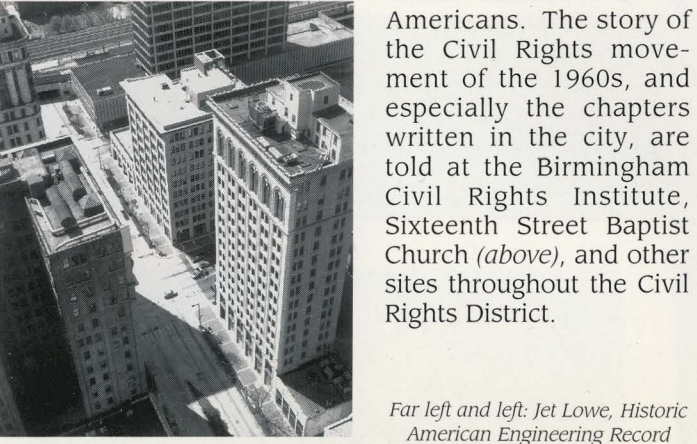
John O'Hagan

the Chamber of Commerce touted Birmingham as the fastest growing and youngest of the world's great cities.

Major buildings line 20th Street which led through the heart of the city from Red Mountain to Linn Park (left). The "Heaviest Corner on Earth" was created with the completion at a single intersection of four skyscrapers to house the offices of the industrial corporations (below, right). Financed by Birmingham industrialists and designed by associates of prominent national firms, the city center's office towers showcased the latest engineering and architectural technology.

Arlington House (below) symbolizes the rebirth of the Old South. Built c. 1850 in a rich farming area, it survived the war as headquarters for federal troops dispatched to destroy the state's ironworks. Later it became the residence of a leading manufacturer of cotton gins. As Birmingham grew, a densely developed early 20th century residential district surrounded the once-isolated house. Today, it is a museum of the decorative arts amassed by the wealthy elite of the Old South and the new industrial city.

The contribution of African American workers and professionals to the development of the Birmingham District is an important but seldom told story. They, along with immigrants and whites from the countryside, provided the base for the new industrial South. Recent historians have focused on the Civil Rights era and the role of African Americans in Birmingham in securing the rights and individual freedoms of all Americans. The story of the Civil Rights movement of the 1960s, and especially the chapters written in the city, are told at the Birmingham Civil Rights Institute, Sixteenth Street Baptist Church (above), and other sites throughout the Civil Rights District.



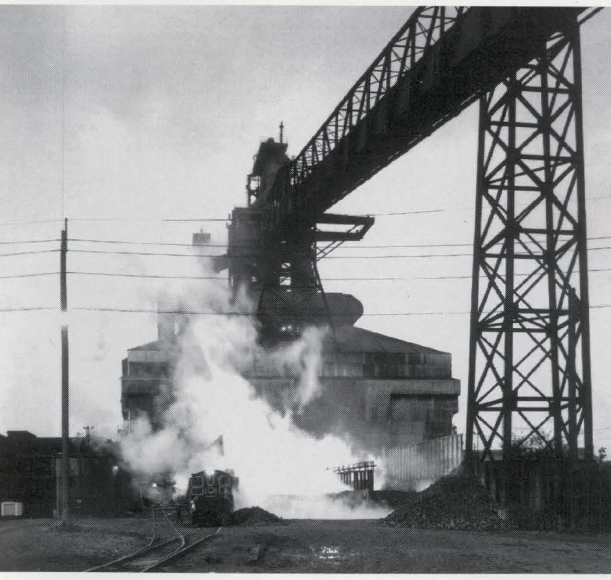
Far left and left: Jet Lowe, Historic American Engineering Record

Bessemer

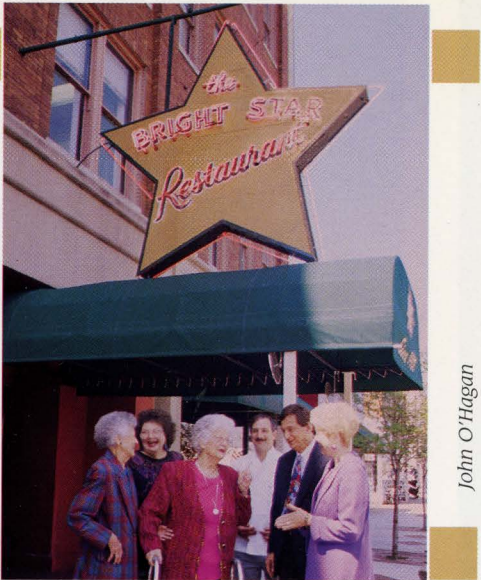
The pig iron boom of the 1880s created new urban areas throughout the District. Established by a Birmingham industrialist, the new town of Bessemer (founded 1887) attracted a diversified range of industries including a rail car manufacturing plant, firebrick and brick companies, furnaces, and pipeworks.

Since 1907, the Bright Star Restaurant (right) on Bessemer's main street has brought good food, good company, and economic vitality to the early 20th century commercial center.

Current Industry



Jet Lowe, Historic American Engineering Record



John O'Hagan

The District remains today the world center of ductile iron pipe production and a regional center for transportation and the manufacture of steel, coal, coke, foundry castings, and lumber products. The District is also home to many mineral-based industries which maintain active quarries and mines.

Historic industries operating in the District include ACIPCO, McWane Pipe, O'Neal Steel, Stockham foundry, Hardie Tynes, Trinity Industries, Lawler foundry, Goslin-Birmingham foundry, U.S. Pipe, Belcher Lumber, U.S. Steel, Drummond Coal, Jim Walter mining, and Vulcan Materials Co.

During the past decade, U.S. Steel's Fairfield works, a descendant of TCI, the largest of Birmingham's early iron and steelmaking companies, has been continuously transformed into one of the most modern integrated steel plants in North America. Pictured is Fairfield's Blast Furnace No. 8 (left), which continues the tradition of making iron and steel as it has since the 1880s.

Sites Open to the Public

(all area codes 205)
Alabama Mining Museum, Dora, 648-2442
Arlington Historic House and Gardens, Birmingham, 251-9402
Battle-Friedman House, Tuscaloosa, 558-6138
Bessemer Hall of History Museum, Bessemer, 426-1633
Birmingham Civil Rights Institute, Birmingham, 328-3696
Brierfield Ironworks Historical State Park, near Montevallo, 665-1856
Dearing House-University Club, Tuscaloosa, 758-5414
Discovery 2000, Birmingham, 933-4124
Gorgas House, Tuscaloosa, 348-5906
Heart of Dixie Railroad Museum & Yard, Calera, 668-3435
Jemison House, Tuscaloosa, 752-2575
Iron and Steel Museum of Alabama, Tannehill, 477-5711
Red Mountain Cut, Walkway & Museum, Birmingham, 939-1176

Sites Open for Special Events or by Appointment

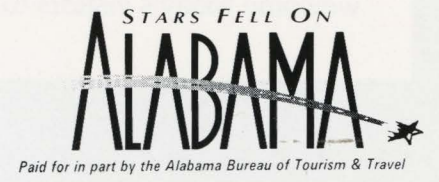
(all area codes 205)
Aldrich Old Museum, near Montevallo, 665-9161
King House, Montevallo, 665-6006
Old York Heritage Park-Corry House, Oakman, 622-3951
Owen House, Bessemer, 424-5358 or 491-5543

Rickwood Field, Birmingham, 780-8023

Shelby Ironworks, Shelby, 669-9852
William Cook House, Nauvoo, 697-5792, 272-1972

Credits

Production: Birmingham Historical Society
One Sloss Quarters, Birmingham, Alabama 35222 with the volunteer assistance of many individuals and institutions.
Design: icon graphics
Financial Support: Alabama Historical Commission, Susan Mott Webb Charitable Trust, Philip A. Morris, Time Warner Inc.



10M PRINTED 1994



September 20, 1994

Marjorie White
c/o Birmingham Historical Society
1 Sloss Quarters
Birmingham, AL 35222

Dear Marjorie:

Your excellent sleuthing certainly paid off with the loan of these great black and white glossies of Vulcan. I immediately had them copied for our files. The camera angle I found especially helpful shows in great detail the top of the head and right deltoid indicating the presence of openings in the statue.

Please allow me to convey our appreciation for your efforts, Marjorie. Perhaps you could locate some additional shots of Vulcan at the 1904 World's Fair? Copies of the survey photos Scott Xeroxed would also be good.

I've enclosed the borrowed photographs and hope they are in the same good condition in which they were received. Please let me know as you make additional discoveries.

Sincerely,
ROBINSON IRON CORPORATION

W. Wayne Fuller
Marketing Manager

WWF/jsm
Enclosure:

RECEIVED

SEP 21 1994

Birmingham Historical Society

*Need to get appropriate photo credits
to photos, if printed or use.*

Birmingham Historical Society

Inventory of Vulcan Photos

Missouri Historical Society:

American Cement Co. Exhibit, Department of Mines & Metallurgy (Vulcan in background), LPE #89, WF #1033.
Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

At the feet of Old Vulcan, Palace of Mines & Manufactures, LPE Keystone Stereograph #15175, WF#1005.
Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Exhibit of California, Dept. of Mines & Metallurgy (Vulcan in background), LPE #121.

Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Bethlehem Steel Co. Exhibit, Dept. of Mines and Metallurgy, (Statue of Vulcan in background), LPE #70, WF #1034. Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Massive Iron Statue of Vulcan, Alabama Exhibit, Dept. of Mines & Metallurgy, Vol. 4, #283, WF#1035. Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Looking towards Vulcan, Palace of Mines & Manufactures, LPE Keystone Stereograph #15176, WF #1006.
Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Vermont Slate Co. and American Cement Co. Exhibits, Department of Mines & Metallurgy, LPE #71, WF #1032 (Statue of Vulcan in background). Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Consolidated Coal Co., Model of Coal Mine (Vulcan in background), WF #400.

Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Statue of Vulcan "50 Feet High of Alabama Iron", LPE #1648.

Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

Utah Exhibit, Dept. of Mines & Metallurgy, (Vulcan in background) LPE #96, WF #1031.

Photo taken at 1904 World's Fair in St. Louis, Missouri.

Source: Ordered from Missouri Historical Society, P.O. Box 11940, St. Louis, MO 63112-0940, 314-746-4599.

OV Hunt Collection:

OVH 126 - STATUES - View of Vulcan statue on Red Mountain, c. 1947 (same as 33.51)

Source: Birmingham Public Library Archives, Collection of OV Hunt, 104 North 17th St.

OVH 458 - STATUES - Photograph of Vulcan

Source: Birmingham Public Library Archives, Collection of OV Hunt, 104 North 17th St.

Hill Ferguson Collection:

HFBAPT - VULCAN - 56.5/12.29 - small photograph sketch of Moretti model.

Source: Birmingham Public Library Archives, Hill Ferguson Collection.

HFBAPT - VULCAN - 56.5/12.30 (same as 21.08 STATUES & MONUMENTS) - OV Hunt, Vulcan was brought back from the St. Louis Exhibition late 1904 or early 1905. He lay along the side of the BMRR back on Red Mt. at the head of 20th Street for 2-3 years and was taken to the fairgrounds. Photo of Vulcan at the Alabama State Fairgrounds surrounded by Fair crowd. Race track in the background, ca. 1910.

Source: Birmingham Public Library Archives, Hill Ferguson Collection.

HFP - VULCAN - 56.3/18.40 - Moretti with model from the Hannah Elliott Collection.

Source: Birmingham Public Library Archives, Hill Ferguson Collection.

Listings under STATUES & MONUMENTS - VULCAN:

BN 589 - VULCAN - photo of bronze (?) statue.

Source: Birmingham Public Library Archives

1.91 - Vulcan at the Alabama State Fairgrounds, advertising Sherwin-Williams Paints. Date unknown. Gift: Margaret Gray Cargo.

Source: Birmingham Public Library Archives

7.12 - Vulcan at the Alabama State Fairgrounds. Vulcan's left hand is supported by a wooden pole and his left hand is turned upside down, c. 1910, W.P. Caine, Sr., photographer.

Source: Birmingham Public Library Archives

9.67 - Close-up view of Vulcan showing the Vulcan and the top of the column. Taken before its renovation in the early 1970s. Watson McAlexander, photography, Birmingham Chamber of Commerce. Same photo in file that has Alex Bush, HABS, Montgomery Alabama written on front of photo. (same as 17.56)

Source: Birmingham Public Library Archives

17.56 - Vulcan on Red Mountain, updated, Watson McAlexander, photographer (same as 9.67).

Source: Birmingham Public Library Archives

21.08 - Photo of Vulcan at the Alabama State Fairgrounds surrounded by Fair crowd. Race track in the background, ca. 1910, OV Hunt.

Source: Birmingham Public Library Archives

24.28 - Photo of Vulcan as he stood at the Alabama State Fairgrounds in Birmingham between 1931-1936 with his hand backwards, c. 1930s.

Source: Birmingham Public Library Archives

30.26 - Photograph of Vulcan atop his pedestal on Red Mt. The television towers are visible in the background, ca. 1960. Watson McAlexander, photographer, Birmingham Chamber of Commerce.

Source: Birmingham Public Library Archives

31.88 - Photograph of workmen posed with G. Moretti in front of the foot of the Vulcan statue, 1904.

Source: Birmingham Public Library Archives

31.89 - Photograph taken of Vulcan at the Alabama State Fairgrounds. At the time this photograph was made

Vulcan's right hand was on backwards.

Source: Birmingham Public Library Arhives

31.90 - Rotogravure picture of G. Moretti and his workmen pose in his studio with the statue of Vulcan (1904). News article that appeared with the picture is also in the file, October 31, 1937 (date of news article)

Source: Birmingham Public Library Arhives

31.91 - Photograph of the statue, Vulcan, at the Alabama State Fairgrounds.

Source: Birmingham Public Library Arhives

31.92 - Photograph of the statue of Vulcan from the waist down. Photograph was taken in G. Moretti's studio. A horse and carriage are posed between the statue's legs, 1904, A.B. Bogart, photographer.

Source: Birmingham Public Library Arhives

32.20 - Photograph of Vulcan in pieces at the Red Mt. site before he was placed atop his pedestal. Pedestal under construction is visible in the photograph, ca. 1935, Albert Benham, photographer. On back of photo is written: During WPA days, Albert Benham taught chemistry at Ramsay High School and was a graduate of University of Michigan.

Source: Birmingham Public Library Arhives

32.34 - Photograph of Vulcan with the skyline of downtown Birmingham in the background, ca. 1965.

Source: Birmingham Public Library Arhives

32.35 - Photograph of 2 children looking up at Vulcan on his pedestal. In this photo Vulcan has a spear in his hand rather than the torch that was later substituted.

Source: Birmingham Public Library Arhives

32.36 - Photograph of Vulcan atop his pedestal on Red Mt. In this photograph Vulcan is holding a spear rather than the torch that was added later.

Source: Birmingham Public Library Arhives

32.37 - Photograph of Vulcan in pieces at his Red Mt. site during the construction of the pedestal, ca. 1935.

Source: Birmingham Public Library Arhives

33.50 - Photograph of Vulcan atop his pedestal holding a spear in his right hand rather than the torch which was added later. Birmingham Chamber of Commerce.

Source: Birmingham Public Library Arhives

33.51 - Photograph of Vulcan atop his pedestal holding a spear in his right hand rather the torch which was added later. (same as OV Hunt 126)

Source: Birmingham Public Library Arhives

37.93 - A photo of the beginning Vulcan probably a model of what the final would look like.

Source: Birmingham Public Library Arhives

37.97 - A photo taken of the base of Vulcan. It shows the stairs leading up to the entrance, March 17, 1956.

Source: Birmingham Public Library Arhives

37.98 - A photo of Vulcan's head lying on the ground during construction of the pedestal. There are three boys sitting on it. January 21, 1937. Lollar's Photography.

Source: Birmingham Public Library Arhives

38.03 - A photo of the assembly process of Vulcan with statue surrounded by scaffolding, G.M. Cushing, Photography, Newberry St., Boston, Mass.

Source: Birmingham Public Library Arhives

Listings under VIEWS - SKYLINE - BIRMINGHAM

6.08 - Skyline view of Birmingham with Vulcan in the foreground. To the far right is Sloss Furnaces, c. 1937.

Source: Birmingham Public Library Archives.

29.79 - Aerial photograph of Birmingham taken over the vicinity of Homewood looking north. Prominent in the photograph is the statue of Vulcan, 4/14/1939, Alabama Air Guard, photographer. Alvin Hudson Collection.

Source: Birmingham Public Library Archives.

29.82 - Aerial photograph of Birmingham taken from just south of Red Mountain looking to the north. Prominent in the photograph is the statue of Vulcan with the base unfinished, ca. June 4, 1936. Alvin Hudson collection. (appears to be a reprint of 6.08)

Source: Birmingham Public Library Archives.

37.86 - A photo looking north over WAPI with construction of Vulcan in the foreground with city in the background.

Source: Birmingham Public Library Archives.

Photos found in publications:

Linn-Henley Research Library:

Source: *The Official Photographic Views of the Universal Exposition Held in St. Louis, 1904, Commemorating the Acquisition of the Louisiana Territory*. Photography by The Official Photographic Co., Wm. H. Rau, Managing Dir. St. Louis: N.D. Thompson Publishing Co. 302 pp., ca. 300 illust. (Birmingham Public Library Southern History Dept., T860 .c1 s3x)

Source: *The Greatest of Expositions Completely Illustrated Official Publication*. Illustrations reproduced from Goerz lens photographs made by Official Photographic Co., Wm. H. Rau, Dir. of Photography. Published by The Official Photographic Co. of the LA Purchase Expo, 1904, at St. Louis, USA. St. Louis: Press of Samuel F. Myerson Printing Co., (Birmingham Public Library Southern History Dept. Rare Books, So 917.78 St. Louis/T860 .c 1514)

UAB Sterne Library:

Source: Bennitt, Mark and Frank Parker Stockbridge, eds. *History of the Louisiana Purchase Exposition*. St. Louis: Universal Exposition Publishing Company, 1905. Comprising the history of the Louisiana Territory, the story of the Louisiana Purchase, and a full account of the great Exposition, embracing the participation of the states and nations of the world, and other events of the St. Louis World's Fair of 1904. (Limited Circulation T 860 B1 B4)

OBSERVATIONS

1. **Cracks:** The lower portion of the statue has developed large surface cracks which require structural repairs. The cracks are located in the portion of the statue which has been filled with concrete and appear to be related to water seeping between the concrete and the metal. Although the Law Report has done a thorough job documenting this condition, Mr. Veloz believes more cracks may present themselves once the existing paint is removed.
2. **Bolt Connections:** The component castings for the statue are held together by large bolt connections, many of which are now concealed by the concrete fill. Of the bolts which can be observed, most are in good condition. The Law report, however, did identify a few which were extensively corroded and required replacement. Given the damp condition associated with the concrete fill, Mr. Veloz believes that a much higher proportion of the concealed bolts may be corroded. The Law Report only evaluated the exposed bolts.
3. **Sleeve Connections:** Each component casting has a tapered end which is inserted into a sleeve at the end of the adjoining component. The bolts are attached to a flange at the end of this sleeve. At some of the exposed connections, portions of this flange have broken away. If the flange breaks or cracks at the bolt, the bolt connection will fail. Mr. Veloz believes that the sleeve connections which are concealed by the concrete fill must be inspected to verify their structural integrity. The Law Report only evaluated the exposed sleeve connections.
4. **Pedestal Connection:** According to the original architect's 1939 structural drawings, the statue is connected to the pedestal by bolts into the feet and by steel rods which extend 10' up the statue's legs into the concrete fill. Mr. Veloz believes that all pedestal connections should be evaluated at this time.
5. **Arm Assembly:** Both arms were modified during the 1939 assembly so that a number of the bolt and sleeve connections do not align as originally designed. To accommodate the statue on top of the pedestal, the anvil was relocated from a position somewhat in front and to the side of the statue's left leg to a position closer to the leg and somewhat behind. This relocation required a significant adjustment in the left arm which rests on the anvil. The Law Report expressed serious structural concern about the left arm and recommended that it be taken apart and reassembled with new connections and support. Mr. Veloz believes that both arms should have an internal supporting framework and should be reassembled as closely as possible to the original design.
6. **Torch:** Vulcan's torch was installed in 1946. In order to maintain the torch, cable rigging was added to the surface of the statue and an access hole was cut in the top of the head. Maintenance of the light presents serious safety problems, the cable rigging compromises the statue's appearance, and the access hole is a principal source of water entering the statue. The status of the torch was not discussed in the Law Report. Mr. Veloz believes removing the torch would be the most appropriate way to correct the problems it has created and would eliminate the need to add the safety devices recommended in the Law Report.
7. **Sealing the Statue:** In order to correct the problem of water penetration into the statue, the Law Report recommends providing a cover for the access hole in the head, cleaning the drain inside the statue, and extensive caulking of all cracks and joints. In his work with other sculpture, Mr. Veloz has found that it is virtually impossible to keep moisture out of hollow statues and believes that they should be kept as open as possible inside and allowed to drain and ventilate freely. The evidence at Vulcan supports this opinion because the upper part of the statue and the base of the anvil are essentially open inside and are in excellent condition. The lower portion which is filled with concrete has sustained most of the cracking and potential corrosion.

8. **Metallock Crack Repairs:** The Law Report presumes that crack repairs must be made to the statue in place and recommends a patented process from Metallock Casting Repair and Service, Inc. While this process appears to be the best choice for an in-place repair, Mr. Veloz believes the repairs could be done more proficiently on the ground and may then lend themselves to other more effective procedures. Given the size and weight of Vulcan, Mr. Veloz believes it will be safer to disassemble the components rather than to lift the entire statue from the pedestal to the ground in one piece. Also, he observed on the statue what appeared to be an existing Metallock repair which had failed. This repair was on Vulcan's left knee where the triangular section of metal is missing.
9. **Painting:** The Law Report specifies that all existing paint surfaces shall be thoroughly cleaned by a "commercial blast cleaning" process to prepare the surface. Mr. Veloz believes that all existing paint should be completely removed prior to repainting to make possible a complete inspection of the metal surface and to provide uniform surface conditions for the new coating systems. He believes that some of the existing paint contains lead and advised that it should be tested to determine the most appropriate abatement procedure..
10. **Structural Condition:** The statue appears to be essentially sound and in no danger of imminent collapse. However, the renovations recommended below should be undertaken as soon as possible to prevent further deterioration and to eliminate the risk of additional cast iron fragments falling from the statue.

RECOMMENDATIONS

Based on the observations above, Mr. Veloz offered the following recommendations for renovations to the statue:

1. Remove the concrete fill.
2. Disassemble the statue and remove it from the pedestal. Make all repairs, remove the existing paint, and repaint while components are on the ground.
3. Verify structural connections at the top of the pedestal and repair existing leaks.
4. Construct an internal steel framework to support the statue components and to anchor the statue to the pedestal. Design the framework to maintain access to all existing bolt connections and to provide as much interior open space as possible for ventilation.
5. Reassemble the statue with components aligned as close to the original design as possible. Retain the existing location of the anvil and accommodate the required adjustments in the left arm with the design of the internal framework.
6. Remove the torch and reinstall a spear in the right hand. Remove the cable rigging associated with maintenance of the torch.
7. Retain the climbing rungs for access to the head but verify the condition of all concealed bolt connections as soon as possible.
8. Provide covers for all existing openings and caulk all joints between component casting. Design the cover for the head opening to be removable and maintain access to the inside of the statue.
9. Provide a system of sensors to monitor the humidity and moisture inside the statue.

10. Proceed with renovations as soon as possible and develop preservation specifications to correct existing problems and to truly restore the statue. This project should not be undertaken simply as a program of expedient repairs.

COMMENTS

During the course of the meeting the following comments were made by members of the Task Force:

1. Mr. Morris stated that the goal of the project should be to restore the statue to its original condition, to restore the park to its 1939 WPA character, and to seek designation of the statue as a National Historic Landmark. Mr. Morris recommended removing the torch and providing lights to wash the entire statue and pedestal.
2. Mr. Long noted that two years ago representatives from the Robinson Iron Co. inspected the statue and recommended that the statue should be removed from the pedestal and that the concrete fill should be replaced with an internal steel frame.
3. A question was raised about ground settlement in the park area. Mr. Long noted some settlement near the existing concession building but apparently none associated with the statue and its pedestal. This area of settlement is directly above the Lone Pine punch mine. Although water is leaking into the tower in the area where the statue is connected to the pedestal, the tower itself appears structurally sound. Waterworks maps drawn by the WPA in 1939 indicate that some subsidence had occurred in the area prior to the erection of the pedestal.
4. One person asked how long the statue should last with proper maintenance and if cast iron was an appropriate material for a monumental sculpture. Mr. Veloz replied that the statue should last forever if properly maintained and that cast iron, notwithstanding its symbolic significance in Birmingham, was a highly suitable medium for monumental sculpture. He cited an exterior iron sculpture in India which was erected about 3000 years ago and remains in good condition today.
5. One person noted that the Vulcan Park area has sustained 80 m.p.h. winds last year with no damage. Mr. Veloz commented that while that may be the case, the risk of more rapid deterioration is great and that it is likely more and larger chunks of the statue will be falling if nothing else is done.
6. Mr. Veloz noted that the arms of the statue are designed to counter balance each other and that temporary shoring will be necessary during disassembly.
7. One person asked what color should Vulcan be painted to satisfy both landmark and night time lighting requirements. Since Vulcan has been painted a variety of colors, lighting requirements and aesthetic preference should be considered. The original color of the iron was a light to medium gray. At the St. Louis exposition, the statue appears to have been gloss black. A paint color analysis could verify the color of all existing paint layers.
8. One person asked who can do cast iron statue restoration. Mr. Veloz replied that the Park Service can help identify prospective contractors. Although he has had no experience with Robinson Iron, he noted that they have a good reputation. Mr. Veloz recommended that an engineering consultant should be retained to design the interior steel framework and that a conservation consultant should monitor the entire project. He suggested that the Birmingham Historical Society might be an appropriate party to serve in this capacity..

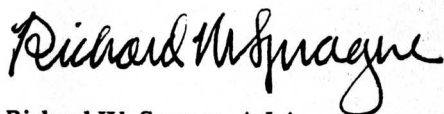
9. One person asked how an appropriate contractor could be assured through the public bid process. Ms. Williams replied that this project was so highly specialized that it would not be subject to the public bid process..
10. One person asked how the statue's physical modifications over the years effect its historical significance. Mr. Veloz replied that the statue's entire history contributes to its significance, that physical modifications are part of its story, and that they too contribute to its significance.

NEXT MEETING

The next meeting of the task force will be Wednesday, Nov. 3 at 11:30 in the Duncan House. Nimrod Long will present a summary of the resource information which has been gathered to date and an overview of the planning concept for the Vulcan Trail project.

The preceding summarizes my understanding of the items discussed and the recommendations presented. If there are any questions, clarifications or corrections to these items, please contact me.

Prepared by



Richard W. Sprague, A.I.A.

copy to: All Participants

HISTORIC AMERICAN ENGINEERING RECORD

INDEX TO PHOTOGRAPHS

VULCAN STATUE AND PARK
Vulcan Road, east of 20th Street & north
of Valley Avenue, atop Red Mountain
Birmingham
Jefferson County
Alabama

HAER NO. AL-29

Photographer, Jet Lowe, Spring 1993

AL-29-1	AERIAL VIEW OF STATUE AND PARK AND SURROUNDING NEIGHBORHOOD
AL-29-2	AERIAL VIEW OF STATUE WITH BIRMINGHAM SKYLINE IN BACKGROUND
AL-29-3	GENERAL VIEW OF REAR OF STATUE AS SEEN FROM PARKING LOT
AL-29-4	NORTHWEST REAR ELEVATION OF STATUE AND OBSERVATORY COLUMN WITH 1970s GARDENS IN FOREGROUND, LOOKING SOUTHEAST
AL-29-5	NORTH ELEVATION OF OBSERVATORY COLUMN AND GARDENS
AL-29-6	INTERIOR VIEW OF OBSERVATION DECK, LOOKING OUT WINDOWS TO VIEW OF CITY OF BIRMINGHAM
AL-29-7	BASE OF OBSERVATORY COLUMN AND GARDENS, LOOKING NORTHWEST
AL-29-8	STAIRWAYS LEADING FROM 20TH STREET ENTRANCE INTO PARK, LOOKING SOUTHWEST TOWARDS GIFT SHOP
AL-29-9	STAIRWAYS FROM 20TH STREET ENTRANCE INTO PARK AND ENTRANCE TO MINE (CLOSED)
AL-29-10	STAIRWAYS FROM 20TH STREET ENTRANCE (LEFT) AND RIGHT-OF-WAY OF THE BIRMINGHAM MINERAL RAILROAD
AL-29-11	BASE OF STAIRWAY AT 20TH STREET ENTRANCE
AL-29-12	STONE-WALLED PATHWAY AROUND PARK

The following are photogrammetric aerial views of the vulcan statue, taken for the purpose of executing measured drawings of the statue.

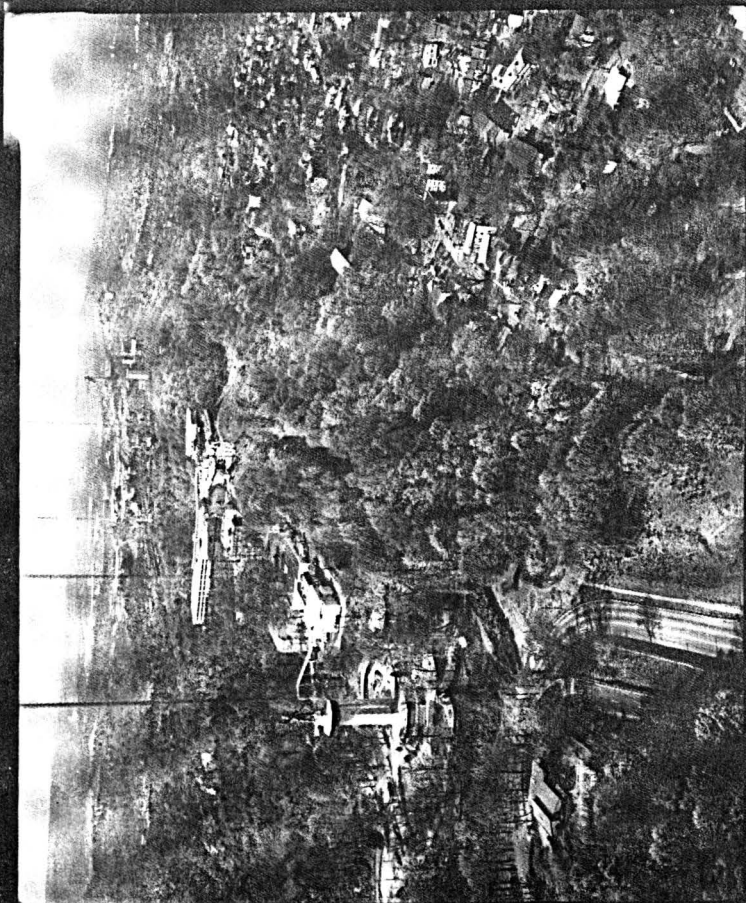
AL-29-13	FRONT ELEVATION, LOOKING DOWNWARD TO INCLUDE HEXAGONAL GARDEN (SHOWN IN REAR)
AL-29-14	FRONT ELEVATION

VULCAN STATUE AND PARK
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- AL-29-15 PERSPECTIVE VIEW OF FRONT
- AL-29-16 SIDE VIEW WITH ANVIL IN FOREGROUND *(include also)*
- AL-29-17 SIDE VIEW ANVIL IN FOREGROUND, SHOWN FROM ABOVE TO INCLUDE SURROUNDING PARK AND OTHER BUILDINGS
- AL-29-18 REAR PERSPECTIVE WITH ANVIL IN FOREGROUND
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- AL-29-20 REAR PERSPECTIVE VIEW
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- AL-29-22 REAR VIEW (CLOSER RANGE) WITH BIRMINGHAM SKYLINE IN BACKGROUND
- AL-29-23 SIDE VIEW FROM ABOVE
- AL-29-24 SIDE VIEW FROM ABOVE WITH GIFT SHOP AND FOUNTAIN IN BACKGROUND
- AL-29-25 SIDE VIEW SHOWING RAISED ARM AND TORCH
- AL-29-26 PERSPECTIVE WITH TORCH IN FRONT OF FACE, SHOWN FROM ABOVE TO INCLUDE GARDENS AND GIFT SHOP
- AL-29-27 PERSPECTIVE WITH RAISED ARM AND TORCH IN FORGROUND

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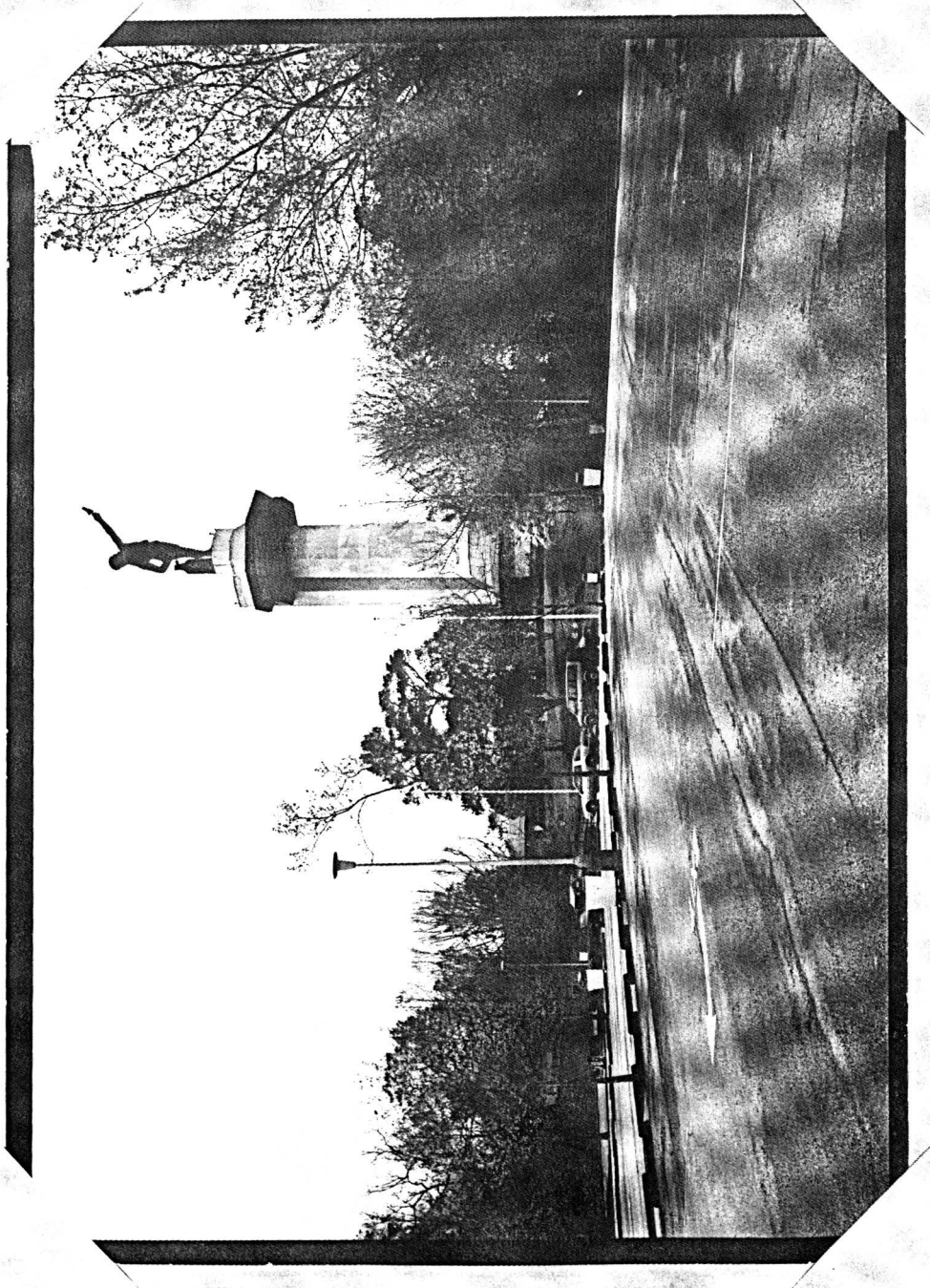
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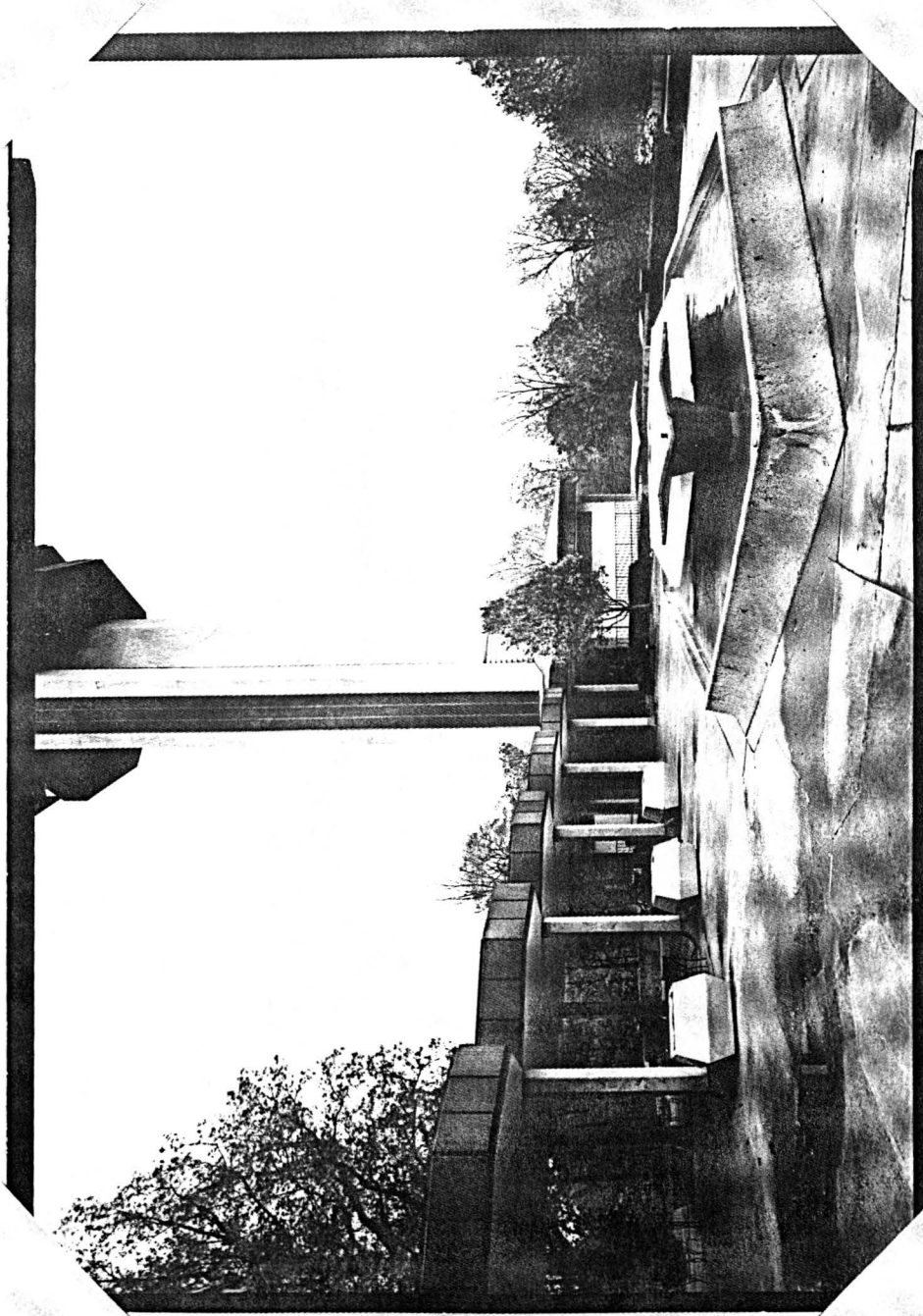
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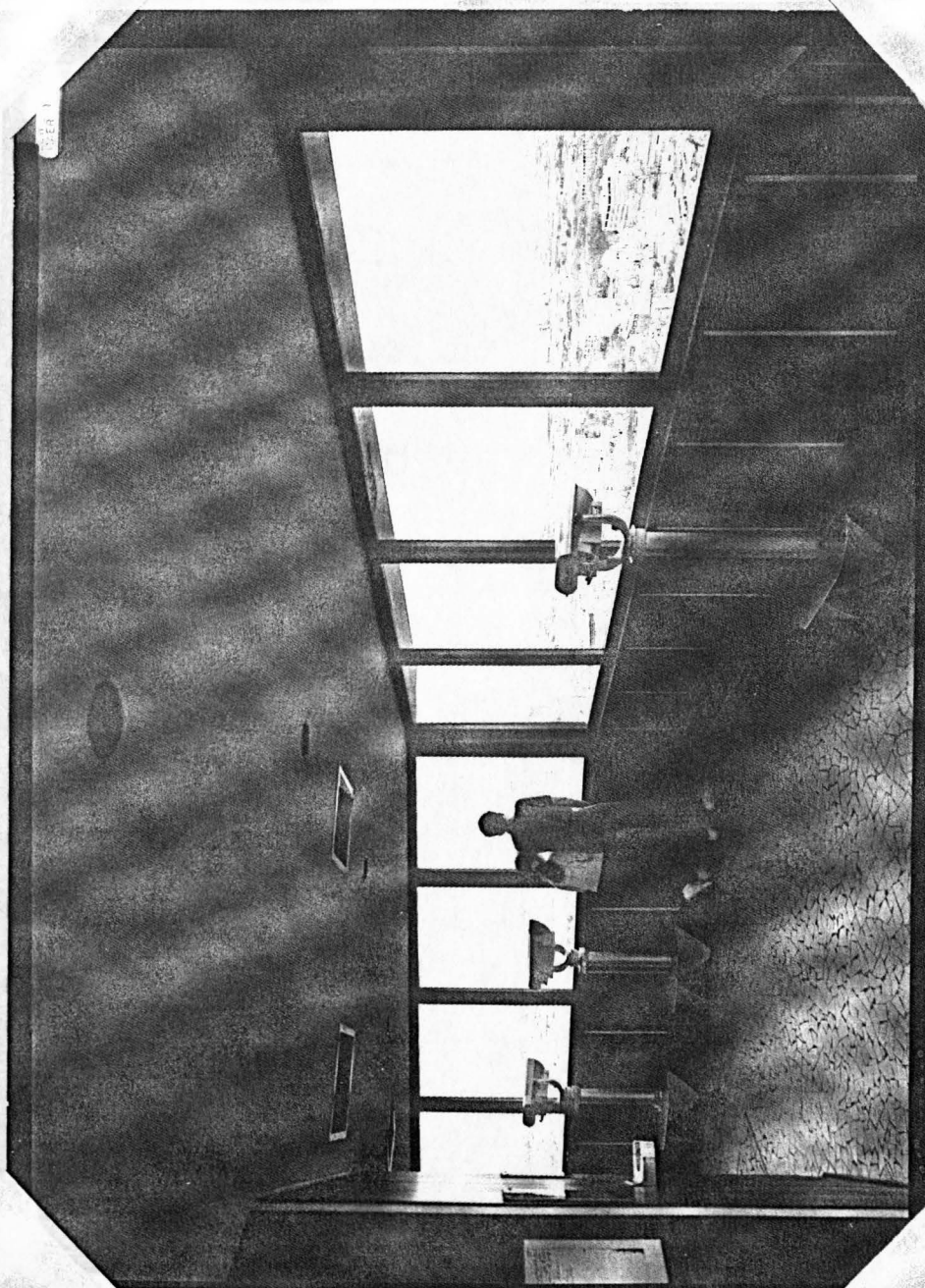
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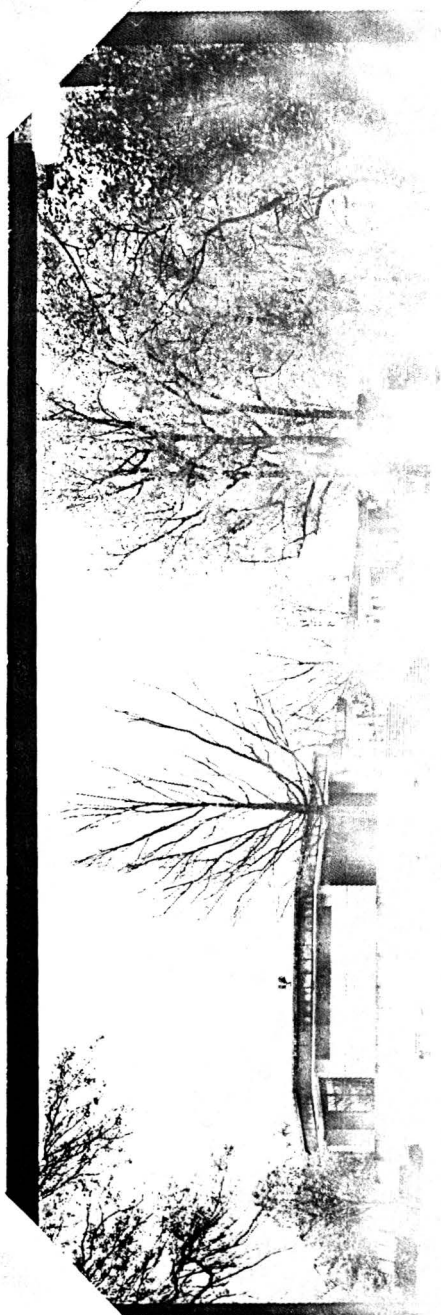
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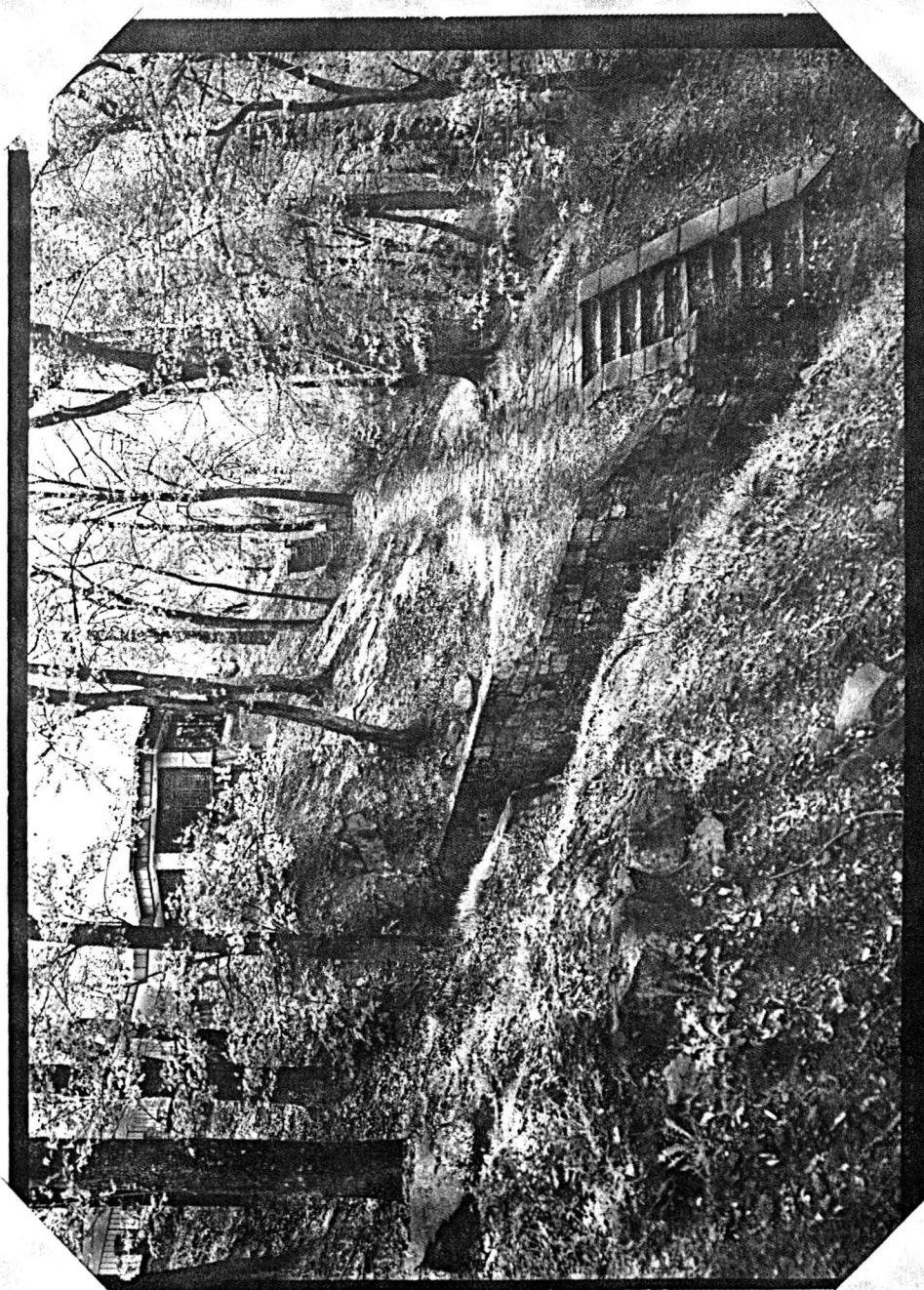


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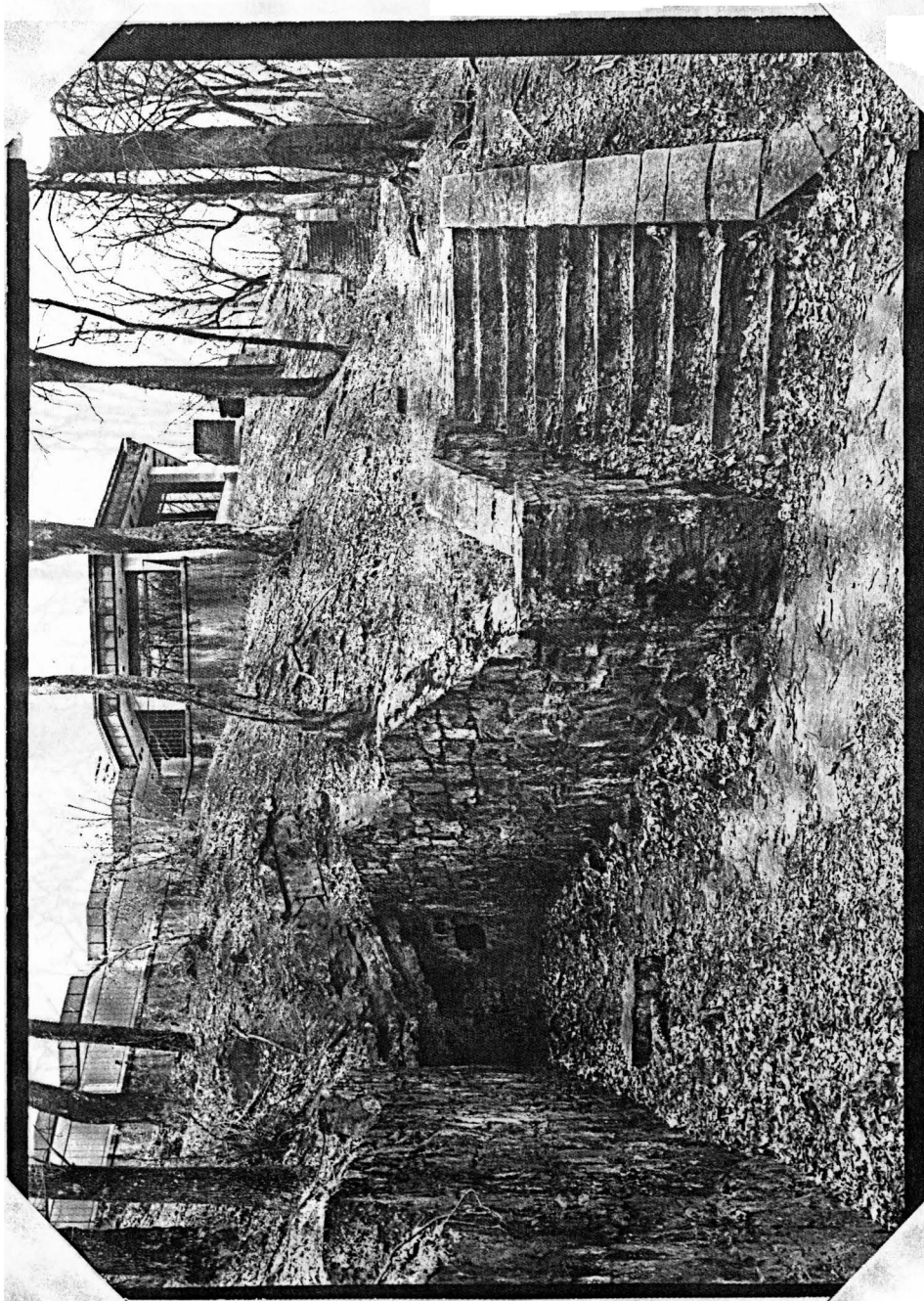
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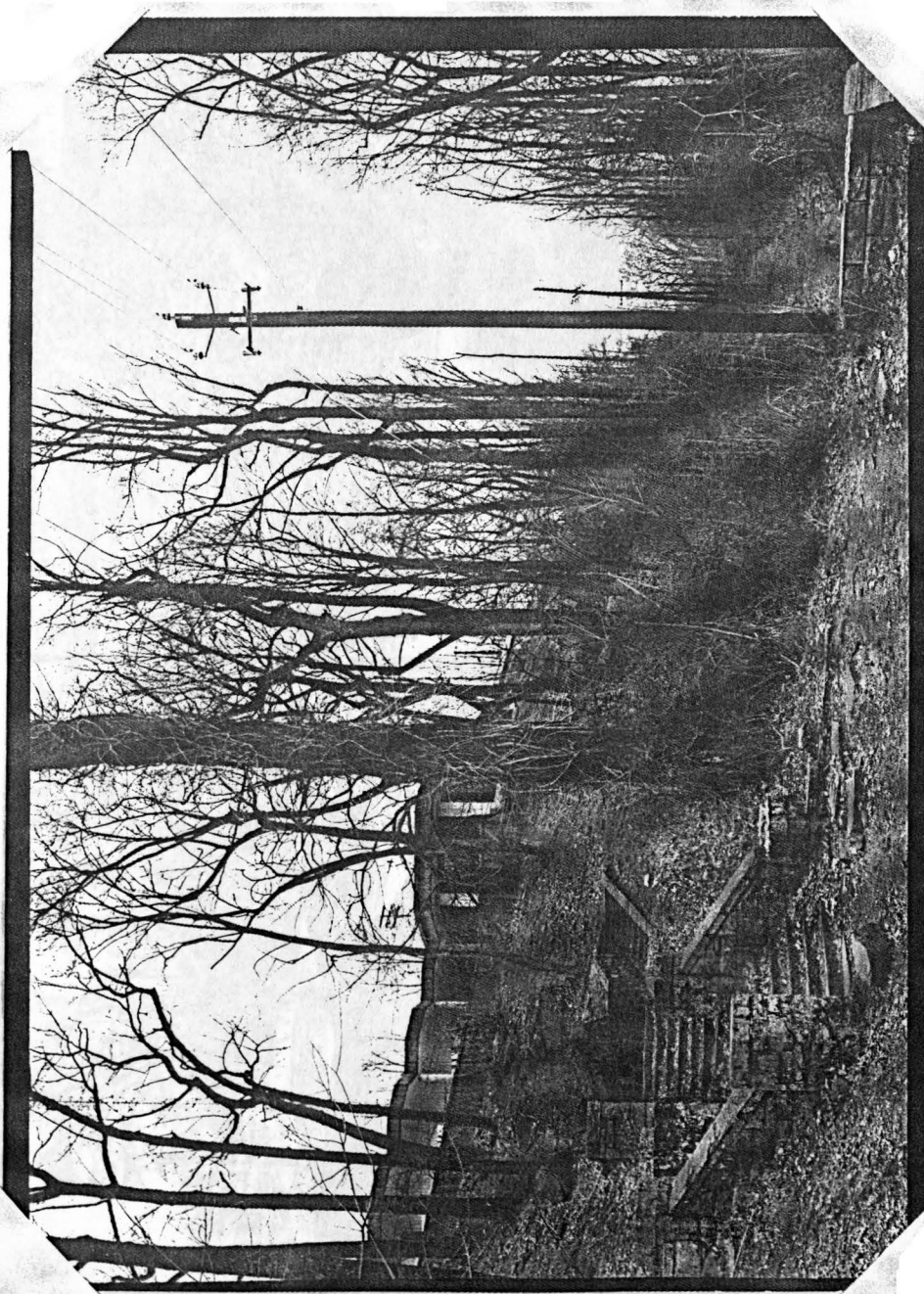
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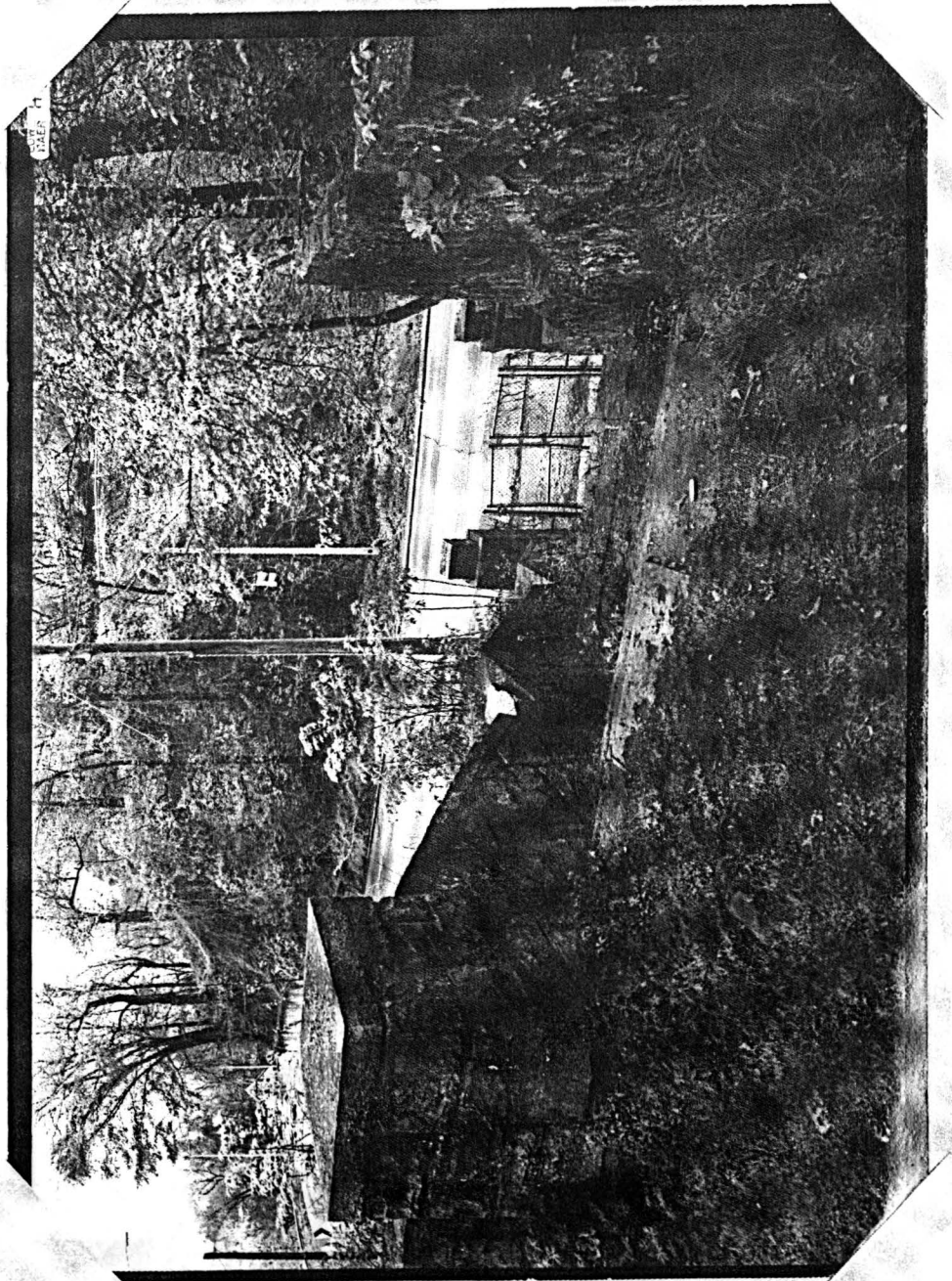
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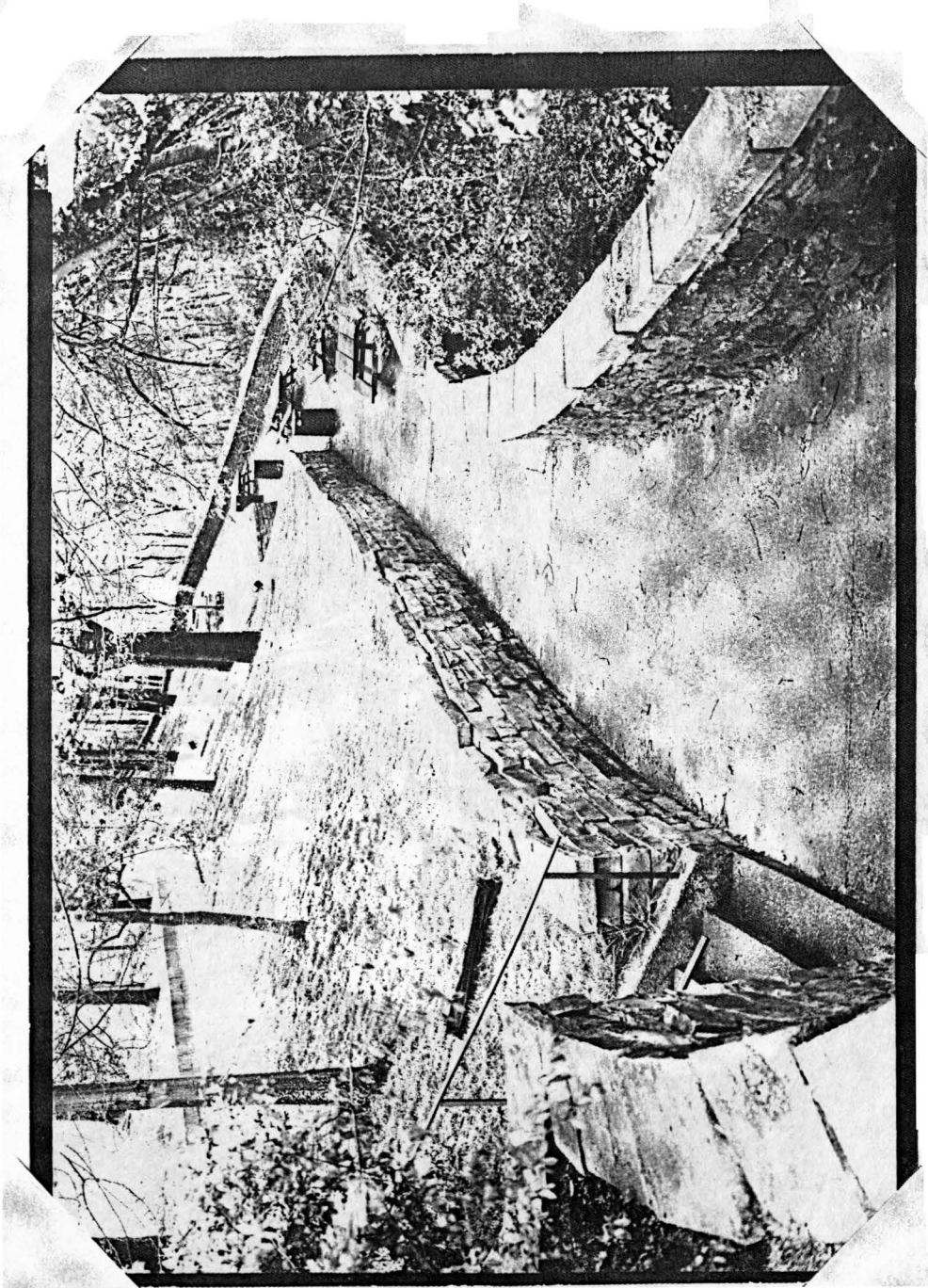
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face only

HISTORIC AMERICAN ENGINEERING RECORD
SEE INDEX TO PHOTOGRAPHS FOR CAPTION

HAER No.

PL-29-14



HISTORIC NAME Vulcan Park, including Statue of Vulcan, Red Ore Mine, L. & N.-Birmingham Mineral Railroad

CURRENT NAME Vulcan Park and Abandoned Red Mountain Mines Mineral Railroad Hiking Trail

LOCATION Atop Red Mountain on Vulcan Road, which lies just east of 20th Street South and to the north of Valley Avenue.

CITY Birmingham

COUNTY Jefferson

ACREAGE 4.7 acres + railbed

OWNER City of Birmingham

One mile of the three mile railroad right-of-way is owned by the City of Birmingham; the other two miles are in multiple private ownership.

TYPE Site

DATE OF CONSTRUCTION c. 1935 (park); 1903 (statue); 1889 (railroad)

BUILDER/ARCHITECT/ENGINEER Works Progress Administration, City of Birmingham, L. & N. Railroad

DESCRIPTION

PHYSICAL CHARACTERISTICS

Topography The park is located along the crest of Red Mountain. The site itself has been graded and landscaped so that it is rolling.

Hydrology No natural water bodies or sources are found on the site.

Geology The crest and substrate of Red Mountain was extensively mined for red ore, as evidenced by a mine opening located on the grounds of the park.

Vegetation The site is partially wooded and partially landscaped, with formal lawn and garden areas surrounding the structures.

HISTORICAL RESOURCES

Vulcan Statue/Museum with Observation Tower

From foot to the tip of the outstretched hand, the statue of Vulcan is 55 feet tall. The statue stands upon a pedestal 124 feet high so that the monument as a whole rises to a height of 179 feet, taller than Niagara Falls. Situated on the crest of a mountain, Vulcan surveys the City of Birmingham and Jones Valley from an elevation of nearly 600 feet, or just over the height of the Washington Monument, the tallest shaft in America. Vulcan is visible from most all points in the greater Birmingham area.

Vulcan is the largest iron figure ever cast. It was cast from Birmingham iron and in Birmingham foundries. Because of its weight, 120,000 pounds, it was cast in several sections. Separate molds were made of the head, arms, torso and legs, and these were welded together. Each foot is seven feet long by three feet wide and weighs about 10,000 pounds. The massive head alone required over six tons of iron.

The torch which has been placed in the outstretched hand of Vulcan is a silent sentinel of safety. Since 1946, Vulcan has promoted a campaign for traffic safety spearheaded by the Birmingham Jaycees. The torch burns green unless an automobile fatality has occurred; then warning red torch is carried that day in the hand of a mythical figure which

has become the world's largest safety reminder. Vulcan is one of the few monuments in the world erected, not to commemorate an event or to perpetuate the memory of a person, but to symbolize industry.

Vulcan Park

In December of 1935, TCI deeded 4.45 acres of land, with an additional one-quarter acre in 1951, to the City of Birmingham for Vulcan Park. With support of the Kiwanis Club, assistance of the state's Works Progress Administration (WPA) and labor of many Italian craftsmen, the mighty iron statue was reassembled on Red Mountain in a handsome park by 1939.

In 1971, the City of Birmingham completed a million dollar renovation program which altered the character of the original park by re-orienting entrances and covering the original stonework that was laid during the WPA construction. Remnants of the original park still grace the setting. On the eastern edge of the park several stacked stone walls remain in the picnic area, as well as further south adjacent to the parking area. Stone steps also indicate the original entrances to the park from U.S. 31 (20th Street).

Red Ore Mine and Birmingham Mineral Railroad

At the base of Vulcan Park, where U.S. 31 now cuts through Lone Pine Gap, a significant portion of the upper portion of the Red Mountain iron ore may be seen. Until the 1920s, a railroad bridge carried the Birmingham Mineral Railroad over the early wagon road at this location. A WPA stonework path leads from the refurbished Vulcan Park to a "forgotten" terraced area of the property which contains an entrance to a red ore mine, observation pavilions, as well as access to the abandoned railroad bed, now informally used as a hiking trail.

ACCESS

Access from major roads is available, though indirect. Visitors heading south on the Red Mountain Expressway-U.S. 280 exit onto 21st Street South and travel west to the intersection of Valley Avenue and 20th Street South (U.S. 31). The park is reached from I-65 by taking the Oxmoor Road exit and travelling east on Oxmoor Road, then north on Green Springs to Valley Avenue and eastward to Vulcan Park, Birmingham.

CONDITION

Vulcan Statue/Museum With Observation Tower

The statue of Vulcan is critically in need of conservation. During the 1930s concrete was poured into the statue to stabilize it; material is now leaching out. A feasibility study for the technical preservation of the statue is currently in progress.

Vulcan Park

Red Ore Mine and Birmingham Mineral Railroad Bed

The mine opening on the site is not currently open to public view. The mine entrance itself is protected by a stone wall that appears stable and in good condition. The status and condition of the mine itself will require geotechnical analysis.

The Birmingham Mineral Railroad track area is an abandoned railroad bed. Although the right-of-way is evident, it has become overgrown and unkempt. As mentioned previously,

plans are underway to develop the property, one mile of which has been acquired by the City of Birmingham, for an interpretive and hiking trail.

IMPROVEMENTS

Existing

In 1971, the City of Birmingham completed a million dollar renovation program in Vulcan Park. The renovation included an elevator to transport visitors to a climate-controlled, glass-enclosed observation deck from which the visitor enjoys a magnificent, panoramic view of the Jones and Shades Valleys. At the base of the statue, first floor display cases host changing exhibits. The current exhibit directs tourists to other sites of historic significance and interest throughout the region.

A covered walkway links the statue and observation tower to the gift shop/concession building, which lies to the west of the statue. In addition to well-landscaped and well-maintained grounds, a formal garden and a fountain are also found on the site.

Upon entrance to Vulcan Park, through the gate house, ample parking is available for automobiles, as well as buses. Approximately 190 parking spaces are available in this lot.

The park property also contains a substantial vacant area, which is located between Vulcan Road and 20th Street South. This area is heavily wooded.

Proposed

In 1990, Vulcan Park was the focus of re-evaluation through a master planning process. The "Master Plan for the Revitalization of Vulcan Park," sponsored by a private "friends" group, the Greater Vulcan Society, and prepared by a joint venture of landscape architects Nimrod Long and Associates, Inc., and architects Adams Design Associates, recommends a significant and historically sensitive "re-renovation" of Vulcan Park. Major features of the \$5 million plan include significant restoration of the original WPA park fabric.

1. Proposed Site Improvements:

- a. Improve Park image at Valley Avenue by reducing the visual clutter of signage, utilities and traffic control devices. Remove or relocate non-essential elements off site. Provide landscaping consistent with a "front-door" image for the Park.
- b. Return vehicular access to original 1935 design where vehicular entrance to the park was in line with the statue's North/South axis.
- c. At new site entrance, create an entry plaza/structure that consolidates user services - pedestrian entrance and ticket sales, concessions, gift shop, public restrooms and administrative services.
- d. Recreate the 1935 WPA water cascade as an important visual/audio progression to the statue and museum.
- e. Increase the Park's ability to serve as a community resource for multi-function events with the following additions:
 - 1) A new Conference Building and Special Events Plaza for large outdoor gatherings and indoor meeting space with limited catering facilities.
 - 2) Re-defined overlooks suitable for artisan/craft displays or small performance areas.

3) An increased lawn seating area and new Pavilion for outdoor performances with larger audiences.

4) A second terraced picnic area associates with access to the Mineral Railroad Trail.
f. Direct pedestrian links from the statue complex and the parking lot to the beginning of the Mineral Railroad Trail; return access to the parking lot only.

g. Re-configure parking lot with a central pedestrian link to the entry Plaza and additional landscaping. Provide parking for 153 cars and bus drop-off for two vehicles.

2. Proposed Architectural Improvements:

a. Tower and Observatory: Restore the original WPA stonework by removing the marble cladding of the tower. Rebuild the observatory as an all-glass enclosure which allows direct views to the statue through the roof and because of its relative transparency, enhances the verticality of the tower. Improve statue lighting.

b. Museum: Provide new stone cladding in a manner reminiscent of the original 1930s stonework. Create interpretive displays highlighting the history of Vulcan and the Birmingham District's iron and steel industries.

c. Meeting Rooms: Provide for two meeting rooms in a building connected to the tower by a stone columned canopy. The rooms will accommodate 50 to 75 persons each and be separated by a movable partition. The rooms adjoin private terraces with views of the city or the fountain and plaza. Include a kitchen to provide a limited catering ability.

d. Entrance Building: Accommodate park entrance functions in a partially buried building which frames a direct view of the tower. The ticket booth and gate, restrooms, vending machine area, and gift shop spaces form an entrance plaza which will serve as a transitional area between the parking area and the ascent to the statue and tower.

THREATS

. If repair of the statue of Vulcan remains unattended, the structure will continue to deteriorate and may become a safety hazard. Regardless, its declining appearance may inhibit its attraction as a tourist destination.

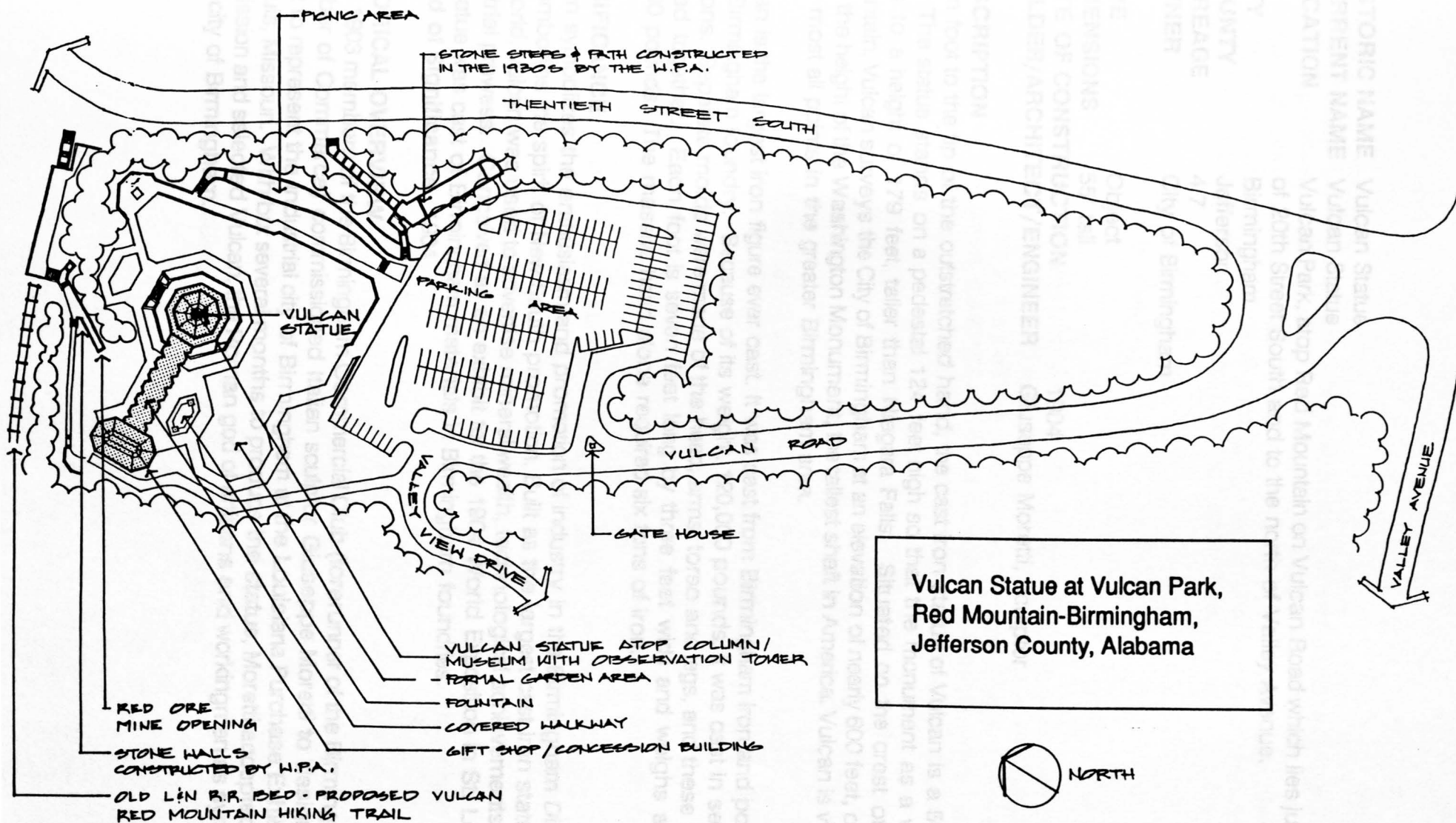
. Cost estimates for proposed improvements are high.

. Soil and slope instability may prevent re-opening of the red ore mine for public viewing and interpretation.

SOURCES

"A Master Plan for the Revitalization of Vulcan Park," sponsored by The Greater Vulcan Society, November 29, 1990

"Strategic Plan for the Revitalization of Vulcan Park," sponsored by The Vulcan Park Development Task Force of the Birmingham Area Chamber of Commerce, May 1988



HISTORIC NAME Vulcan Statue
CURRENT NAME Vulcan Statue
LOCATION Vulcan Park, atop Red Mountain on Vulcan Road which lies just east of 20th Street South and to the north of Valley Avenue.
CITY Birmingham
COUNTY Jefferson
ACREAGE 4.7
OWNER City of Birmingham

TYPE Object
DIMENSIONS 55' tall
DATE OF CONSTRUCTION 1904
BUILDER/ARCHITECT/ENGINEER Giuseppe Moretti, sculptor

DESCRIPTION

From foot to the tip of the outstretched hand, the cast iron statue of Vulcan is a 55 feet tall. The statue stands on a pedestal 124 feet high so that the monument as a whole rises to a height of 179 feet, taller than Niagara Falls. Situated on the crest of Red Mountain, Vulcan surveys the City of Birmingham at an elevation of nearly 600 feet, or just over the height of the Washington Monument, the tallest shaft in America. Vulcan is visible from most all points in the greater Birmingham area.

Vulcan is the largest iron figure ever cast. It was cast from Birmingham iron and poured in a Birmingham foundry. Because of its weight, 120,000 pounds, it was cast in several sections. Separate molds were made of the head, arms, torso and legs, and these were welded together. Each foot is seven feet long by three feet wide and weighs about 10,000 pounds. The massive head alone required six tons of iron.

SIGNIFICANCE

Vulcan symbolizes the enthusiasm and promotion of industry in the Birmingham District and embodies the spirit of New South promotion. Built as the largest cast iron statue in the world, Vulcan was used to advertise mineral wealth, technological achievements and industrial prowess. Conceived as an exhibit for the 1904 World Exposition in St. Louis, the statue was cast of Birmingham materials in Birmingham foundries.

Period of Significance 1904

HISTORICAL OVERVIEW

In late 1903 members of the Birmingham Commercial Club (forerunner of the Birmingham Chamber of Commerce) commissioned Italian sculptor Giuseppe Moretti to design an exhibit to represent the industrial city of Birmingham at the Louisiana Purchase Exhibit in St. Louis, Missouri. With but several months to produce the statue, Moretti accepted the commission and selected Vulcan, the Roman god of artisans and workingmen as symbol of the city of Birmingham.

ACCESS

Access from major roads is available, though indirect. Visitors heading south on the Red Mountain Expressway-U. S. 280 exit onto 21st Street heading south and travel west to the intersection of Valley Avenue and 20th Street South (U.S. 31). The park is reached from I 65 by taking the Oxmoor Road exit and travelling east on Oxmoor Road, then north on Green Springs to Valley Avenue and eastward to Vulcan Park.

CONDITION

See threats and historical overview.

THREATS

. The statue is in critical need of conservation. During the 1930s concrete was poured into the statue to stabilize it; material is now leaching out of the statue. A feasibility study for the technical preservation of the statue is currently in progress. If repair of the statue of Vulcan remains unattended, the structure will continue to deteriorate and may become a safety hazard. Regardless, a declining appearance may inhibit its attractiveness as a tourist destination.

. Lack of funding to complete preservation of the statue and the proposed park renovation.

SOURCES

White, Marjorie, The Birmingham District, p.221-222.

Whiting, Marvin, ed., "Giuseppe Moretti," The Journal of the Birmingham Historical Society, 1985.

Rowell, Raymond J., Sr., Vulcan in Birmingham, 1972.

Alabama Heritage, Special Issue No. 20 on Vulcan, Spring 1991.

"A Master Plan for the Revitalization of Vulcan Park," sponsored by the Greater Vulcan Society, November 29, 1990.

Birmingham Parks and Recreation Board, Birmingham's Vulcan: World's Largest Iron Man
Kiwanis International, Birmingham's Vulcan, Birmingham Publishing Company, Birmingham, Alabama, 1938

Vulcan, God of Fire and Metal, Pamphlet, Sloss-Sheffield Steel and Iron Company, 1952
WPA records on the planning of Vulcan Park at the Library of Congress in Washington could not be located after a diligent search. The search is still on for records available in the state.

HISTORICAL REPORT ON VULCAN PARK

by Matthew Kierstead
Historic American Engineering Record-National Park Service

Prepared for the "Vulcan Trail Project"
With the sponsorship of Birmingham Historical Society
Under contract to Nimrod Long & Associates
With Funding from the City of Birmingham

Draft For Review and Comment of the Mayor's Vulcan Task Force
January 29, 1994

HISTORIC AMERICAN ENGINEERING RECORD

VULCAN PARK

HAER NO. AL-

Location: UTM coordinate: 16.519010.3705620. Vulcan Park is adjacent to and southwest of U.S. Highway 31 (also called the Old Montgomery Highway and Twentieth Street) at the crest of Red Mountain, a ridge overlooking Birmingham in Jefferson County, Alabama. The park includes acres on Red Mountain's northern and southern flanks.

Present Owner
And Occupant: City of Birmingham Parks and Recreation Board

Present Use: Public park and observation tower

Description: Set atop a knoll along Red Mountain's crest overlooking the Birmingham city center and industrial District, the Vulcan park includes historical structures dating from three construction eras: 1904, 1936-38, and 1969-71 and natural features including an abandoned red ore mine.

Centerpiece of the park is the gigantic 57' tall figure of Vulcan, the mythological god of metal-working, cast of Birmingham iron ore in a Birmingham foundry to symbolize the spirit of the industrial District and to represent this mineral district at the St. Louis World Exposition in 1904. The Vulcan statue surveys the city and the district atop a 120' tower of native stone, originally designed by the Birmingham architectural firm Warren Knight and Davis and constructed by WPA workers from 1936 to 1937. A 1969-1971 "modernization" refaced the tower, added an enclosed and air-conditioned observation deck and elevator, and an open air pavilion linking the tower to a gift shop/concessions area, a water pool and terraces with stylized flower beds. The 1969-71 additions use hexagonal shapes and white marble, concrete and exposed aggregate finishes. Walkways lead to terraces and picnic areas. Built by Italian immigrant stonemasons from stone quarried at the current Birmingham Botanical Gardens, these terraces with gently curving retaining walls and the now hidden and overgrown staircases which lead from 20th Street --across the 80' change in elevation-- to the park, past a stone-walled entrance to the Lone Pine Mine (now sealed), provide the park's pedestrian visitors access -- to the statue, the red ore

mine and vistas of the city and Shades Valley. The 20th Street Pedestrian Entrance, now closed to general park visitors, also accesses the Red Gap Branch of the Birmingham Mineral Railroad. From 1889 to 1933, the L & N operated this industrial railroad, currently under development as the "Vulcan Trail," to haul ore from area mining operations then located along Red Mountain's crest and slopes to furnaces and foundries of the industrial district, one of which cast the Vulcan statue.

The park also includes an entrance drive, with WPA stonework at the 20th Street turn off and a retaining wall lining the ascent to the 177-car parking lot. The 1969-71 renovations enlarged the original 100-car WPA lot. To the south of the parking area lie wooded areas. Grassy lawns and native forest cover surround the park structures described above. Seasonal plantings are restricted to the formal park beds adjacent to the gift shop, although native species of azalea and dogwood from the 1950s Brooks Landscape plan dot other natural park areas. Clearance of overgrowth in the fall of 1993 for this recording project revealed the existence of the WPA stone entrances, terraces and staircases.

Along the park's east slope which faces 20th Street, an area now heavily overgrown, the curious spectator can see a 14' thick strata of iron ore and large metal signs, donated by mining engineer and philanthropist Erskine Ramsay, which read "Top of Seam" and "This Red Mountain iron ore is the basis of Birmingham's iron and steel industry."

Significance:

Vulcan stands atop a pedestal 123.5 feet high, so that the monument as a whole rises to a height of 179 feet. Since the statue is set on the crest of Red Mountain some 390 feet above the city center and industrial district it overlooks, the gigantic iron man surveys Birmingham from an elevation of nearly 600 feet, just over the height of the Washington Monument, long the tallest shaft in America. One of few monuments in the world erected, not to commemorate an event or to perpetuate the memory of a person, but to symbolize the spirit of a city and an industrial district, Vulcan statue and park, set atop an exposed vein of iron ore, belong to a unique category of mountaintop colossi beloved by locals and bemusing to visitors and historians.

VULCAN PARK

The Move to Red Mountain

Serious plans to locate the Vulcan statue to a Red Mountain site emerged in the 1930s. In 1933, an anonymous letter from a Birmingham Exchange Club member to a Birmingham newspaper suggested the move. This letter further suggested that the proposed site be a landscaped park at a site then owned by Tennessee Coal, Iron and Railroad Company (TCI).¹ The Exchange Club and City Commissioner Lewey Robinson may have fostered interest in Vulcan's move to Red Mountain. However, Tom Joy, J. Mercer Barnett and the Birmingham Kiwanis Club championed the creation of today's Vulcan Park and the federal Works Progress Administration made it possible.²

In 1935 the Birmingham Kiwanis formed a "Vulcan Committee." Headed by J. Mercer Barnett, a former Kiwanis International President; the committee included Thomas Joy, TCI engineer and private developer; Erskine Ramsay, TCI mining engineer and the city's leading philanthropist; W.D. Moore, T.L. Bissel, W.A. Curry, and Alex Montgomery. Another key player was Thad Holt, a Birmingham native, who served as Director of the Alabama Industrial Development Board during the early Depression years and as Assistant Director to WPA Director Harry Hopkins. During the Vulcan project, Holt headed the Works Progress Administration (WPA) in Alabama. During his tenure with WPA, Holt oversaw the expenditure of \$43,000,000.00 and employment of 50,000 workers. Holt enthusiastically supported the Vulcan project. However, according to Vulcan historian Raymond Rowell, he insisted upon public support for the project before involving the WPA.³

Vulcan park project leader Tom Joy engineered both popular and City support. In making a case for the Vulcan move before the Birmingham Park Board, proponents argued that "The Statue of Liberty is worth more to New York City than any of its skyscrapers," and that Vulcan should be recognized as Birmingham's symbol.⁴ This argument apparently convinced the board, for shortly thereafter, Birmingham Park Superintendent Marshall filed a \$42,518.50 proposal with WPA to move and reerect the statue in its current park setting. The proposal suggested the project could be accomplished with 662 man-months of employment over a six month time interval. Cost estimates included \$23,000 for a proposed tower, \$3,000 for restrooms, \$4,000 for a reflecting pool, and \$12,019 for "other" which included moving the statue from its location at the Alabama State Fairgrounds where it had completed a 30-year tour of duty as a beloved icon and advertising symbol.⁵

Land acquisition was key to the relocation scheme. J. Mercer Barnett negotiated a donation of 4.45 acres from TCI, then owner of vast tracts of mining reserves on the mountain. On December 4, 1935, TCI President J. L. Perry authorized the sale to the City for \$5.00. The City's expressed purpose in acquiring the property was to create a public park.⁶ In 1951 the City acquired an additional quarter-acre of the former Birmingham Mineral Railroad right-of-way to accommodate increased automobile parking.⁷

Red Mountain, an Appropriate Site

Named for the "red" iron ore with which the mountain was veined prior to extensive stripping, Red Mountain contained one of the Birmingham District's principal sources of furnace ore, the primary material for the manufacture of iron and steel. Physically linking Vulcan, the Roman god of metal-working, to the ore source from which he was cast, was a fortuitous association.⁸ The park site is located atop a 16 foot vein exposed along the east face of the U.S. 31-20th Street highway cut.⁹ Red Mountain was also appropriate as a location for the Vulcan statue, for here the statue, and visitors to it, might survey District industries which Vulcan was created to represent. John Adams' "Fulfillment of the Prophecy," originally penned and exhibited on the statue's anvil stand at the St. Louis World Exposition and later reworked for the WPA park, sums up the District's pride in its industrial growth and represented the spirit of the Red Mountain relocation:

Anchored by links of steel, on Red Mountain's iron vein
Our Vulcan views a city spread over hill and plain,
built like this tower, by men whose work and skill
And Birmingham's best nerve that helped them to fulfil
The prophecy he made in nineteen hundred four;
Our population has grown since then to even ten times more
Who plead for art and science new victories to reveal
And build a greater city with the onward march of steel.

By January 1936, the City had acquired the park site and Thad Holt had secured \$44,062 for the construction. Of the WPA funds, \$38,874 was an outright grant and the balance a loan.¹⁰ The City selected the Birmingham architectural firm Warren, Knight and Davis to design the monument. During the third week of February, 1936, former Commercial Club President and the lead Vulcan-to-the-Fair supporter, Fred M. Jackson, turned the first spade of earth at the ground breaking. Leila MacKnight, widow of James MacKnight, the journalist who conceived and realized the creation of the statue for the fair, in a letter to the Kiwanis Club noted: "I am sure that all of those still living who cooperated with my husband rejoice as I do that through your foresight and efforts, Vulcan may yet become the magnet which will attract millions of visitors to Birmingham."¹¹ Among principals of the Warren, Knight and Davis firm, James Knight assumed primary responsibility for design of the monument for the statue.¹² As crews dismantled the statue at the fairgrounds, Vulcan's arm fell, destroying scaffolding. Iron Worker's Union members cast a replacement arm before loading the statue on railcars for transport to the mountaintop site. After several sixty-eight foot test borings, the location of the pedestal moved eight feet to the south.¹³ By late April of 1936, WPA workers had poured foundations at a second site. Construction of the tower continued into the summer.

The title block of Warren, Knight and Davis's 1936 drawings reads "Vulcan Monument on Red Mountain." These drawings project the Vulcan statue atop a 123.5-foot tall octagonal shaft. The slightly-tapered pedestal rises from a single-story base to a railed exterior observation deck from which the Vulcan statue could be viewed. The width of the shaft averages 26 feet. Four shallow buttresses rise approximately fifteen feet from the flat roof of

the base of the tower. Exterior surfaces consists of irregularly-coursed, rectangular, quarry-faced, originally pink (now light brown) sandstone blocks. The use of quarryfaced stone added a rugged texture. Italian immigrant stone masons hired by the WPA cut these at the quarry at Lane Park, a site now a wildflower garden in the Birmingham Botanical Gardens. (This quarry also supplied stones for the park's terraces and paths.)¹⁴ WPA workers quarried and dressed the stone. Carlo Mazerra served as foreman of the crews. A bronze plaque given by the Italian-American Progressive Association and still located at the park lists the names of these stone workers.¹⁵ Cement trim crowned the pedestal and capstone of the base.

Vulcan Park advocates and their architects designed the base of the monument as a museum. The entrance to this octagonal space faced a fountain that cascaded down the southern slope of the site. A wrought iron gate with "Vulcan" in bronze Art Deco style lettering welcomed visitors to the space. The marble-clad museum space contained display niches separated by fluted Doric pilasters. Thin slabs of Sylacauga marble, sawn and installed book style with the striations appearing in mirror image, lined the walls and niches. The museum floor featured black and white marble in a geometrically patterned design.

W.H. Armstrong of Atlanta, Georgia, structural engineer for the tower, designed the interior structure (figure 15) with cast-in-place concrete members vertically reinforced at the eight points of the octagon and connected horizontal floor tiers at regular intervals.¹⁶ An alternating spiral-and-landing staircase, lined with white Sylacauga, Alabama marble, provided access to the statue's observatory deck through the column's core. Two sets of narrow vertical windows illuminated the stairwell. Ninety stairs led to the exterior deck located approximately twenty-five feet from the top of the 123.5 foot tower. Here, locally manufactured wrought iron railings repeated a "v" motif. Curved metal brackets supported this deck. The deck door, as the tower entrance door, featured coffered metal construction. A fluted square keystone adorned the observation deck doorframe.

Stylistically, the Vulcan pedestal might be described as "restrained Art Moderne." Other plans, which appeared in Birmingham newspapers during 1935, showed pedestal designs with wider bases and deeper setbacks --squatty designs which diminished the importance of the Vulcan statue. Several proposals incorporated streamlined human forms in decoration of the base, including figures which clashed with the classically-derived Vulcan. The Warren, Knight and Davis design of a slender column with streamlined buttresses and unobtrusive details proved a fortuitous selection.

While work on the monument progressed, the L & N transported pieces of the statue to the site via the Mineral Railroad. While disassembled, Vulcan's eyes and eyebrows, sandal straps, and apron were painted in contrasting colors. These unassembled pieces became a popular children's play area. Employing a hoist fashioned from a large oak tree, workmen began the reassembly at the top of the pedestal. At 10:00 a.m. on November 12, 1936, they hoisted the right leg aloft. Later scaffolding assisted the reassembly which was completed by early May 1937. The move had taken 18 months. Construction of the grounds, terraces and

water cascade continued throughout 1937 and 1938. Shortages of labor and money are suggested as possible reasons for delay. Sixty of the 130 men working on the park project were diverted to another WPA project involving Birmingham's industrial water supply. The park grounds were finally completed in April of 1939.¹⁷

A great festival celebrated the completion. Erskine Ramsay, president of the dedication ceremony committee, involved city officials and dignitaries in the nine-night May time salute. A three-night theatrical extravaganza presented Vulcan's story. New York theatrical producer William F. Baker directed a cast of over 1,200. Baker, after reviewing the committee's proposal for a script, said "There is a wonderful opportunity offered to portray the symbolic significance of Vulcan in the wealth of natural resources of the Birmingham District, particularly in the iron and steel industry, and in depicting the actual historic events of the valley, a rich field for dramatic presentation."¹⁸ The young George Seibels, later Mayor of Birmingham, played the role of Vulcan. The narrative also featured DeSoto's exploration of Alabama and early Birmingham history. Hoping to attract fifty thousand people from all fifty states, event planners constructed outdoor stages, an amphitheater and a massive advertising campaign for the Vulcan festival which would be "the greatest civic and historic event in Birmingham since the semicentennial in 1921."¹⁹

Seven years later Vulcan's historic role was significantly altered. Paul Moon, Chairman of the Birmingham Junior Chamber of Commerce ("Jaycees") Safety Committee, conceived the "Light of Life" traffic safety campaign. This campaign featured Vulcan's outstretched hand holding a traffic safety beacon high above the city. The beacon would glow red for twenty-four hours after a traffic fatality or green to indicate that no fatalities had occurred. The Birmingham Park and Recreation Board approved a "temporary" installation of the beacon. The Jaycees raised the funds and the Alabama Neon Sign Company installed the "torch." This still extant torch consists of sixteen green and sixteen red neon tubes mounted axially on a truncated aluminum cone. In the 1980s, yellow bulbs indicated Birmingham's patriotic fervor during the Iran hostage and Gulf War crises. To access the lights, a hole was cut into Vulcan's hand, electrical wires and transformers installed inside the right arm, and safety cables strung to the base of the statue. The "Light of Life" first shown over Birmingham on October 23, 1946. Ten days later, a red light indicated the first traffic fatality.

Whether the campaign greatly assisted traffic safety is not known. However, the "Light of Life" campaign, and Vulcan's torch, did attract international acclaim. Many American communities installed their own "Light of Life" torches, although none as impressively as Vulcan's. European countries inquired about the torch. Visible from a great distance and from both sides of Red Mountain, the torch's popularity led to its permanent installation, made possible by frequent electrical repairs.²⁰

Design of the Park

The original WPA Vulcan Park layout works well with the steep topography of the site, the elevations which vary some ninety-seven feet. Birmingham Park Superintendent R.D.

Marshall called the property the "roughest four and a half acres I ever surveyed."²¹ Flights of steps link the multiple entrances to the monument experience.

The WPA plan included several entrances for visitors arriving via streetcar, automobile or on foot. Two pedestrian entrances, actually combinations of stone steps and walkways, ascended the mountain side from 20th Street. At the time of construction, most visitors reached the park by streetcar. The Edgewood 39 streetcar line passed along 20th Street and passengers debarked and climbed one of two sets of steps, proceeding to terraces with views of Birmingham and the monument. One terrace was constructed on the bed of the abandoned Birmingham Mineral Railroad. Visitors then proceeded up another set of steps to the main observation area or past the mine entrance to the rest room. The stone walls at the mine are laid with string courses of narrow stones set into larger ones. At the top of each of these paths, a path along the edge of the park linking the ascending paths led to the base of the pedestal. A separate path, with walls of Red Mountain iron ore, led from the main observation area to a walled picnic terrace. A second pedestrian entrance from 20th Street ascended to the souvenir shop and wooded trails on the steep southern slope of the park. Sandstone piers topped with concrete urns marked the automobile entrance to the park, just south of this second entrance. The drive climbed the short, but steep, mountainside to the park where automobilists passed through a gate with smaller, finial-topped piers to the 100-car parking lot. From this point the approach to the pedestal was dramatic. It rose at the crest of the ridge above three illuminated, cascading pools. The visitor walked up tiered steps to the entrance within which was the museum and staircase to the tower and the open air balcony.²²

WPA plans for the park grounds have not been located, and no landscape architect has yet been connected with the 1930s WPA era construction at the park. It is possible that plans were generated by an uncredited master craftsman, a firm yet to be identified, or by engineer Tom Joy who supervised the entire project. While a distinguished local architectural firm designed the monument, an architectural and engineering feature that needed to safely accommodate a heavy load and public visitation, design of the park grounds did not have these same needs. The pathways constructed provided entry sequences, approaches and views of the monument and the city in a manner that successfully conforms to the difficult topography of the site. Hence, it is possible there was no official architect or landscape architect involved. The construction of the park's terraces, walkways, cascades and drive dragged on for two years after completion of the pedestal. Photographs of the park taken in the late 1930s do not reveal a formal planting scheme. Concrete-and-plank park benches, standard for the period, and deciduous trees dotted the open lawns about the statue.

Subsequent planting schemes for the park grounds have been numerous and varied. In the 1930s the grounds were selectively cleared. Original trees were retained and areas planted in a naturalistic manner, blending with the surrounding woodlands, and augmented with ivy to complement the rusticated stone walls. These areas, where the natural groundcover was intended to be controlled, have become overgrown. At other times, planting included indigenous Alabama species such as azalea, dogwood, and laurel. Park horticulturists grafted

pink and white dogwoods to produce a tree that flowered in both colors and generated both sensation and requests for information.

While the park grounds remained naturalistic, more formal planting schemes characterized the open areas and beds at the base of the tower, which were surrounded by lawns. In the summer the beds contained annuals and tulips. Red and yellow were favorite colors. Often the annuals were planted in decorative patterns on the hillside. One design featured the Confederate and Union flags.²³

In 1950 The Birmingham Park Board spearheaded a drive for donations from civic groups, firms, and individuals to "beautify" the park grounds. On September 3 of that year, the Birmingham News published M. Thomas Brook's "Master Plan for Vulcan Park Beautification" along with a plea for donations. The plan showed 19 numbered areas of the park with planting plans suggested for each area. Donors could select numbers and finance the proposed plantings. These included clumps of dogwood bordering the open lawns to the south of the tower, an azalea and camellia walk along the water cascade beneath the tower, a nature trail with native plants along the steps leading from the Mineral Railroad past the "cave," as the mine entrance was then called; Donald Prior climbing roses and hydrangeas along the entrance staircases and banks bordering Montgomery Highway, an area with wild plum, sumac and oxydendron dell, and fields of poppies and white tulips. The extent to which the planting plan was realized is not known. The existence of such a plan in 1950 would tend to suggest that planting had not been a formal part of earlier park development efforts.²⁴

In 1941 Tom Joy acquired the George Hutchinson Clark collection of Alabama minerals, which became the principal museum exhibit at the base of the tower. This mineral collection, which the Clark family gave to the City of Birmingham, included samples of every known Alabama mineral. The collection included ores and other raw materials used in the production of iron, asphalts, barytes, copper, gold, graphite, pyrite, lead, zinc, tin, manganese, ocher, limestone, marble, slate, bauxite, cement, and clays, all of which have been found, mined, quarried or manufactured in Alabama at one time.²⁵ An appropriate collection for Vulcan Park, it showcased Alabama's mineral resources, from some of which the Vulcan statue had been created. Vulcan promotor Tom Joy acquired the collection for the museum space in the tower. Special display cases were built to showcase the minerals. Joy believed that the Alabama mineral exhibit "should be the first step toward a permanent museum for Birmingham." No other museum existed in the City at this time. (The Kress Collection, the nucleus of the current Birmingham Museum of Art, was given to the City in 1961.) Birmingham Southern College professor Dr. Russel S. Poor prepared, labeled, and installed the collection, said to be "an exceptionally complete collection of Alabama's minerals," conservatively valued at \$50,000 in 1941.

Vulcan Park, like the statue itself, was considered a promotional vehicle, and an entity suited to change, rather than an attraction imbued with sanctity. In the early 1950s, Birmingham City Commissioner Bull Conner, intent on making Vulcan Park "the prettiest spot on earth" reasoned that since the park belonged to the City, "The City can spend money for anything it

desires to put there."²⁶ This attitude produced numerous proposals and several additions to the park, most designed to increase tourism. In 1950, the City purchased from TCI a half an acre of land directly below the scenic overlook and to the north of the entrance steps. Here, the United Veterans Organization of Jefferson County erected a World War II memorial with fountain, marble benches and tables. To provide better access to the memorial, the American Legion built a parking lot. The lot remains today.

In 1953, the Alabama Motorists' Association featured Vulcan Park on a scenic driving tour of the region. This early promotion of regional tourism, entitled the "Vulcan Trail," brought participating visitors, and other changes, to the park. In 1953, the capacity of the original 100-car parking lot, at the south end of the park, was increased. The expanded lot covered over much of the wooded area formally accessed by loop trails. Construction of a reservoir lane relieved overcrowding on the narrow access road. In the 1970s a land swap with the neighboring radio station led to acquisition of the land in the current parking lot configuration.²⁷

During the 1950s and 1960s, proposals to expand and develop Vulcan Park as the City's major tourist attraction ranged from the sublime to the ridiculous. One proposal suggested the Valley View iron ore mine be converted to "Vulcan's Iron Wonderland" with a subterranean tour featuring a boat ride into the mine. Another proposal would have displayed a World War II submarine in the mine. Vulcan Park did host a moon rock, a Roman coin bearing the god of metals' likeness, and a dancing fountain with thousands of illuminated water jets synchronized to music. The Women's Committee of 100 installed local sculptor George Bridge's statue of Brother Bryan at a location called "Prayer Point." Here religious services were held, until Brother Bryan was returned to the Five Points neighborhood where he had ministered.

By the late 1960s, certain elements of the park evidenced physical deterioration. In March of 1968, a Birmingham News editorial, "Taking a Look at Vulcan," used the term "urban blight" to describe the park's condition.²⁸ Four years earlier, agitation for an elevator had surfaced. By the late 1960s, issues of elevator access, graffiti, obsolete restrooms, inadequate maintenance, faded museum displays, and structural cracks surfaced more and more frequently. Water was leaking into the pedestal, the steps were rusting, and plaster was falling. The three reflecting pools were leaking, and receptacles for trash were continually overfilled.²⁹ In 1969, Birmingham Park Board representatives said that if repairs were not made, Vulcan Park would be shut down.

As the City approached its centennial in 1971, civic boosterism to "modernize" the park emerged. At this time Vulcan Park, well located on U.S. 31, the major north-south artery through the City, was Birmingham's principal tourist destination. In this role, the tiny mountaintop park site attracted grandiose schemes projecting hotels, "Six Flags Over Georgia" type attractions, and even a rapid transit system linking it to the Birmingham Zoo, the other key tourist destination of the era. Fortunately, these concepts never materialized. In the

course of the improvements which did not materialize, the original WPA park was extensively modified.

In 1966, Birmingham Park Superintendent Frank Wagner had proposed that the City allocate \$30,000 of a \$300,000 bond issue to construct a new concession, souvenir shop and restrooms.³⁰ In 1969, under the leadership of Birmingham Mayor George Seibels, the City did issue bonds worth \$1.9 million with \$1.1 million earmarked for Vulcan renovations. Later that year, the City Park Board approved the plans of Birmingham architectural firm Elliot and Bradford. On December 4, 1969, the City entered into a contract with Dunn Construction for the physical work. Due to strikes effecting various building trades, the construction ran some 260 days over. The park reopened on October 25, 1971. The official public opening was November 12, 1971. Construction costs were estimated at \$1,010,235.74.³¹ Mayor Seibels expressed the City's intent for the newly refurbished park: "There is nothing in Birmingham I feel more keenly about. In my thirty-four years here, this is the most aggressive, imaginative attempt of the Park and Recreation Board to give us a first-class tourist attraction."³²

The 1969-71 "renovation" constructed a new entrance sequence, a concession/souvenir shop and a pavilion linking it to the tower. Many of the original WPA features, including the park and mine entrances and stone stair cases and terraces, were obscured. Workmen demolished the original gift shop, restroom, cascading fountain, and marble-clad museum at the base of the tower. Polished white Georgia marble resheathed the native stone pedestal. This sheathing, affixed to a metal framework, was attached to the tower with bolts penetrating through the original stonework into the concrete frame. At the base of the tower, flared metal roofs covered the structure. An external elevator and enclosed (and air conditioned) observation area was added to the tower. The new roofs, sheathing, and external elevator became significant visual elements of the Vulcan statue's setting. No longer was the statue visible from the observation deck, and the increased width and whiteness of the pedestal visually overwhelmed it. With more and more visitors approaching via automobile, first (and only) glimpses of the statue were from the rear.

The new construction featured the octagons motif. The J. Mercer Barnett wrought iron gates at the original entrance to the tower (figure 22), were removed to the conference room of the Birmingham Kiwanis office. The Clark Collection of Alabama Minerals was also removed. The location of this collection is currently unknown. Several sources suggest the collection was stored at the Birmingham Park and Recreation Board. However, inspection of that collection revealed that it was an American Institute of Mining and Metallurgical Engineers display of Birmingham-area minerals placed in the "new" tower museum during the early 1970s. A sole sample, labeled as a piece of Red Mountain iron ore, may have come from the Clark collection.

New construction for the fountain, gift shop and parking area required extensive regrading, further altering the original park entrance sequence and removing original WPA stone cascade.³³ Remaining WPA features include retaining walls, walkways, auto, pedestrian, and

mine entrances. At the north side of the park the original flat stone pathway with steps, and walls with piers and capstones still extends from 20th Street, south past the (now permanently closed) mine entrance to the rear of the new gift shop. The mine entrance, once an integral part of the park's historical interpretation, was closed with cinder blocks as a safety measure when a 1964 collapse at the Lone Pine mine caused a cave-in fifty feet west of the tower.³⁴ The mine entrance follows the strike of the stratigraphy and the ground is subsiding under the arcade pillars directly in line with the drift opening. The path which branched off to the left from the first junction has been demolished, however, a stone bench survives at this location. On the side of the embankment to the west of 20th Street, the walled steps leading from the street up to the park are blocked, and are heavily overgrown, as is the original walled picnic area. The elaborate pillared entrance to this path was demolished, and the present location of the path entrance is obscured. Above this area is the current picnic area, and the original outside wall constructed of large pieces of Red Mountain iron ore is still intact. The capstones, as well as the other retaining walls in the new picnic area date from the later renovation. An original culvert and retaining wall follow the south side of the steep access road, and original stone-lined drainage culverts, one with a head wall, cross the road at its foot. The southernmost of the two stone piers which flanked the Twentieth Street road entrance survives. To improve traffic flow to the park, engineers recontoured the intersection of the two streets from a dangerous perpendicular configuration to a sweeping one, and demolished the flanking pier and wall. The surviving south pier and gate wall is now the most obvious and visible WPA element at the park, as the other walls and paths are overgrown and inaccessible to the general public visiting the park. A gigantic three-piece cast metal sign indicating the top of the Red Mountain ore seam survives along the western face of the 20th Street highway cut beneath Vulcan Park. Now overgrown and damaged by sliding rock, the massive interpretive marker was given to the City by industrial magnate and philanthropist Erskine Ramsay as a reminder of whence it came.

ENDNOTES

1. Anonymous, Birmingham, to unidentified Birmingham newspaper, 1933. Original in Vulcan clippings file, Tutwiler Collection, Linn-Henley Research Library, Birmingham Public Library. The author is likely La Noue Matta, an Exchange Club member who attempted to raise a \$6,000 subscription fund to move Vulcan in 1935, according to another undocumented newspaper clipping in the George B. Ward Scrapbook, Special Collections, Samford University Library, Birmingham, Alabama.

2. The Birmingham Kiwanis call the city the "Cradle of Kiwanis." During the 1919 Kiwanis International Convention in Birmingham, the Birmingham club purchased the international association from its founder, Allen S. Browne of Detroit. The Birmingham Kiwanis Club is thus credited with the "freeing of Kiwanis."

The principal sources for details on Kiwanis involvement are the bibliographic files of past presidents, including the J. Mercer Barnett file, located in the office of the Birmingham Kiwanis Club at the Harbert Center, Birmingham, Alabama. The Kiwanis minutes for the critical period during the club's involvement in Vulcan Park have not been located.

3. Rowell, 43. WPA director Thad Holt insisted upon a public expression of support before he would commit WPA funds to a project he pledged to support. Relocation of the statue in Birmingham after the fair had been a controversial issue. Women's groups did not want the scantily clad, gigantic figure in Capitol (now Linn) Park. A write-in campaign was successfully organized.

4. Unidentified Birmingham newspaper clipping, July 28, 1935.

5. Unidentified, undated newspaper clipping, Vulcan file, Linn-Henley Research Library.

6. Jefferson County Judge of Probate, Deed Book 2694, 357, Birmingham Historical Society Vulcan files.

7. The Louisville and Nashville (L & N) Birmingham Mineral Railroad, constructed in the 1880s, connected the active ore mines along Red Mountain to the blast furnaces and other industrial sites within the Birmingham District. The Red Gap Branch, opened from Red Gap at Eastwood Mall to Grace's Gap at Oxmoor in 1889, served mines near today's Vulcan Park. Until 1933 ore trains regularly passed just to the north of Vulcan Park and crossed 20th Street on an elevated bridge. The right-of-way and stone abutments for the bridge still remain today. The right-of-way is currently under development as a recreational trail. (See "Birmingham Mineral Railroad" Report, 1994, Birmingham Industrial Heritage District Files, Birmingham Historical Society for additional information.)

8. Red Mountain ore smelted at Sloss Furnaces provided the iron to cast Vulcan. The Sloss Company's Sloss and Ruffner mine sites are located, respectively, several miles to the east and west of Vulcan Park. Lone Pine No. 3 Mine, named for the Lone Pine Gap, where 20th Street crosses Red Mountain, is located beneath Vulcan Park. This mine, a horizontal drift

following the strike of the ore bed underneath the park, operated prior to 1910. The underground workings have provided challenges to park construction. A subsidence in direct line with the mine opening affected the arcade which connects the tower and gift shop. In 1970 park renovators discovered a large "cave," likely a recess of the abandoned mine, 50 yards west of the tower, and filled it with several hundred cubic yards of concrete. As iron ore deposits in this part of Red Mountain were lean, mining ceased in the early 1920s. The Valley View Mine, one half mile to the west, and now property of "The Club," was actively mined from 1901 to 1924.

9.

10. Thompson, 15. Figures for proposed expenditures appear in various newspaper clippings in the Vulcan clipping file at Linn-Henley Library. Figures vary slightly.

11. The Kiwanian, Birmingham, February 25, 1936.

12.

13. "Making Ready for Vulcan," an undocumented newspaper clipping the George B. Ward Scrapbook, Samford University.

14. According to an interview with James R. McWane, July 13, 1993, a quarry, currently located on the grounds of Birmingham Botanical Gardens, supplied the stone for Vulcan Park and shelters and the keeper's cottage at the Birmingham Zoo. According to an undocumented newspaper article in the George B. Ward scrapbook at Samford University, "Stone Quarried in Lane Park," Birmingham Park Superintendent R.S. Marshall opened this quarry on a hillside in the northeast corner of Lane Park (then the name for the Zoo and gardens site). This quarry also supplied stone for the Woodward and Ensley bathhouses and the Central Park Community Center. The rock was described as a beautiful pink sandstone, with "ore streaks" (colored from iron impurities, that now appear brown from exposure to air). The article further stated that the quarry was to become a rock garden, which pinpoints its location.

15. Stonemasons who worked in the park include: Gene Bone, Calogero Bordenca, Martino Cantesano, Elviro DiLaura, Francesco Giovino, Salvatore Giombrone, Carmelo Raco, Francesco Mazzara, Nicola Montana, Onofrio Paladino, Pietro Scalia, Alberto Schilleci, Antonio Scozzaro, and Alfonso Armone. Francesco "Frank" Mazzara (who had a good command of the English language and training in Italy as a stonecutter) was known as a crew foreman. (Birmingham Historical Society, summary of interview with Vincent Mazzara, February 26, 1993). A letter to the editor (undocumented clipping) in the Vulcan clipping file in the Linn-Henley Research Library from another Vulcan Park stonemason, Anthony A. Danielle, lists Antonio Mures, Louis Levin, Olindo Nativi, George Easter, Carl Bearden, Robert Elgin, Z.B. McGinnis, Sebastain Peirane, Carlo Mazarro, as Vulcan Park stonemasons and a Mr. Froelich as "the Superintendent."

16. All references to Vulcan park tower construction derive from the 15 Warren, Knight and Davis drawings, dated 1936-1937. Copies courtesy Robert M. Black Architects, Inc., the successor firm to Warren, Knight and Davis, Birmingham Public Library-Linn-Henley Library and Birmingham Historical Society.
17. Undocumented newspaper article, George B. Ward Scrapbook, Special Collections, Samford University.
18. Vulcan clipping file, Linn-Henley Research Library.
19. Vulcan clipping file, Linn-Henley Research Library.
20. Rowell, 47-48. Regarding the temporary intent for the torch, Rowell cites Jaycee President Clarence Boggan: "the torch would be temporarily put in Vulcan's hand, and it would be removed after the Jaycees safety campaign was concluded."
21. George B. Ward Scrapbook, Special Collections, Samford University.
22. Sources of visual information on Vulcan Park include photographs in 1938 Kiwanis brochure Birmingham's Vulcan, and Elliot and Bradford maps, dated February 28, 1970, showing topographical and landscape conditions, and proposed alterations to structures and contour lines. Original WPA drawings or plans for the park have not been located at Birmingham Park and Recreation Board nor the Library.
23. Carl Mattil and Tom Hill supplied information on park planting. Mattil, Director of Horticulture and Urban Forestry, Birmingham Park and Recreation Department, and a long time employee of that City of Birmingham agency, was interviewed on July 20, 1993; Tom Hill, a Vulcan Park groundskeeper from 1946 until the early 1960s, was interviewed on August 13, 1993.
24. M. Thomas Brooks. "Master Plan for Vulcan Park's Beautification." Sketch in the Birmingham News, September 3, 1950.
25. "Arrangements to Put Clark Minerals into Monument Made," and "Vulcan Base to House Minerals - \$50,000 Collection Will be Installed by Park Board Next Month," undocumented newspaper articles, Vulcan clipping file, Linn-Henley Research Library.
26. "WW II Memorial to be Located at Base of Vulcan," Birmingham News, October 10, 1950.
27. Birmingham News, January 27, 1972. Confirmed by Mattil Interview.
28. "Taking a New Look at Vulcan," Birmingham News, March 3, 1968. Although this editorial expresses concern for Vulcan Park, it also seriously suggests that Vulcan's exposed derriere be covered to end complaints of Homewood residents. Vulcan's bottom has long

been the butt of serious complaints, and more humorous commentary, such as the local radio hit "Moon Over Homewood."

29. "Vulcan's Stairs are barrier to great sight for many," Birmingham News, July 23, 1964; "Most famous citizen needs a sprucing up," Birmingham News, January 8, 1968; untitled newspaper clipping, April 10, 1969.

30. Birmingham News, February 28, 1966.

31. Thompson, Research Notes, "Vulcan: Birmingham's Man of Iron," Marion Bradford files.

32. Vulcan Park clipping file, Special Collections, Samford University Library.

33. For references to the Vulcan Park layout and landscaping, refer to a copy of a Vulcan Park drawing by Elliot and Bradford, July 29, 1970, which indicates both demolition and new construction, Birmingham Historical Society Vulcan files.

34. Birmingham Age-Herald, December 15, 1964.

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"Section Elevation, Plan at Top of Shaft, Plan at Balcony, Plan at Ground Floor." No sheet number. January 20, 1936.

"Section, South Elevation, Plan at Ground Floor, Footing Plan." Sheet No. 1. February 20, 1936.

"Plan at Balcony, Plan at Top of Shaft, Plan at Base of Figure, Plan at Roof, North Elevation." Sheet No. 2. February 20, 1936.

"Detail of Entrance and Typical Wall, Direct Elevation of Pylon." Sheet No. 3. February 20, 1936.

"Typical Tread and Riser, Detail of Balcony, Balcony Rail, Stair Rail, Balcony Bracket, South Elevation of the Balcony, Detail at Top." Sheet No. 4. February 20, 1936.

"Electrical and Lighting Plan." Sheet E-1. May 15, 1936.

"Revised Detail of Stone Jointing." No sheet number. July 8, 1936.

"Detail of Iron Ladder." No sheet number. September 19, 1936.

"Details Balcony and Windows." No sheet number. April 17, 1937.

"Interior Elevations, Detail of Pilasters, Plan One-half Floor, One-half Ceiling." Sheet No. 1. October 2, 1937.

"Details of Stairs." Sheet No. 2. October 2, 1937.

"Detail of Iron Grill Doors, Oak Doors and Iron Grills and Kiwanis International Grill." December 29, 1937.

"Vulcan Monument, Detail of Balcony." No sheet number. No date.

"Exterior Elevation, 'Old Man of the Mountain.'" No sheet number. No date.

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William H. Armstrong, Structural Engineer, Atlanta, Georgia. Sheet S-1. "Sections and Cross-sections, Column Details." February 20, 1936. (Courtesy Robert M. Black, Architects)

"WW II Memorial to be Located at Base of Vulcan," Birmingham News, October 19, 1950.

LIST OF ILLUSTRATIONS

1. View looking east along Red Mountain's crest of Vulcan Park and the Mineral Railroad bed as it extends past the television stations to The Club and the Valley View Mine site, Spring 1994, Jet Lowe, Historic American Engineering Record-National Park Service (HAER).
2. View along the ridge of the statue of Vulcan atop observatory tower in Vulcan Park, the television stations and The Club, Spring 1994, Jet Lowe, HAER.
3. WPA era stone entrance staircase leading from 20th Street to a terrace built on the abandoned roadbed of the former Birmingham Mineral Railroad, at the point the railroad from 1910-1933 crossed 20th Street on an elevated bridge. Spring 1994, Jet Lowe, HAER.
4. View looking north of WPA era terrace on east side of Vulcan Park. WPA stonemasons constructed the right retaining wall using Red Mountain ore; the left wall was constructed during the 1969-71 renovations. Spring 1994, Jet Lowe, HAER.
5. View of WPA paths ascending from the 20th Street Park Entrance to the 1969-71 giftshop/concessions area at park level. At left is the entrance to the Lone Pine Mine, a red ore mine operated briefly in the early years of the century and now sealed. Spring 1994, Jet Lowe, HAER.
6. View of WPA walled paths to the Lone Pine Mine and the 1969-71 era pavilions on Red Mountain's crest. Spring 1994, Jet Lowe, HAER.
7. View looking south of the Vulcan Statue atop its observatory column and the 177-car parking area and access drive. Spring 1994, Jet Lowe, HAER.
8. View looking north of the Vulcan Tower with observatory and statue. Spring, 1994. Jet Lowe, HAER.
9. View looking south of the Vulcan statue atop the tower observatory with octagonal garden constructed during the 1969-71 renovations. Spring, 1994. Jet Lowe, HAER.
10. View looking north across the gardens of the Vulcan Tower with observatory and statue, right, and pavilion extending to the rest area/concessions building, left. Spring, 1994, Jet Lowe, HAER.
11. View looking east of the 1969-71 Pavilion and fountain linking the gift shop/concession area, not shown, to the Vulcan tower and observatory. Spring, 1994, Jet Lowe, HAER.

12. View looking north of landscaped terraces with gift shop/concessions building and pavilion. Spring, 1994, Jet Lowe, HAER.
13. Aerial Overview of Vulcan Park, published as the cover of Raymond Rowell's "Vulcan in Birmingham," 1972. This publication appeared at the completion of renovations of that era. Birmingham Public Library-Linn-Henley Library, Southern History Collection.
14. A 1930s era view of the Vulcan Monument atop a vein of Red Mountain ore. This view conveys the original intent for the relocation of the statue to its mountaintop setting. Above the exposed vein of ore, the rugged pedestal rises from a museum area at its base, to a railed observation platform and the triumphant statue cast of iron mined in the mountain to symbolize and promote the spirit of Birmingham industry. Birmingham Public-Linn-Henley Library Archives.
15. View of the WPA pedestal, observatory railing of local iron, and the floodlit statue with spear and hammer, 1930s. This is the view of the statue that park planners intended for visitors to have. Birmingham Public Library-Linn-Henley Library Archives.
16. The Vulcan statue lying in pieces awaiting reassembly at the atop the pedestal then under construction at the Red Mountain site, c. 1936. The pieces became a popular children's playground. Albert Benham. c. 1936, Birmingham Public Library-Linn-Henley Library Archives.
17. View from WPA era terrace of the Birmingham city center and industrial district, 1930s, Birmingham Public-Linn-Henley Library Archives.
18. View looking east of the Vulcan Monument with original railed observatory sometime after the 1946 installation of the Jaycees "Light for Life" safety torch. Birmingham Public Library-Linn-Henley Library Archives.
19. Aerial overview of Vulcan Park and the city of Birmingham and its industrial district looking north from today's Valley Avenue. Bottom center, the driveway to the park leads to parking lot and the cascading pools providing a spectacularly terraced, rear, entrance to the Vulcan Monument. At the bottom right is the Montgomery Highway, now 20th Street at Lone Pine Gap, along which both vehicular and streetcar traffic flow. The photograph is dated April 14, 1939. Alabama Air Guard, Alvin Hudson Collection, Birmingham Public Library-Linn-Henley Library Archives.
20. Compressed aerial overview of the Vulcan Monument and the Birmingham skyline, c. 1965. Birmingham Public Library-Linn-Henley Library Archives.



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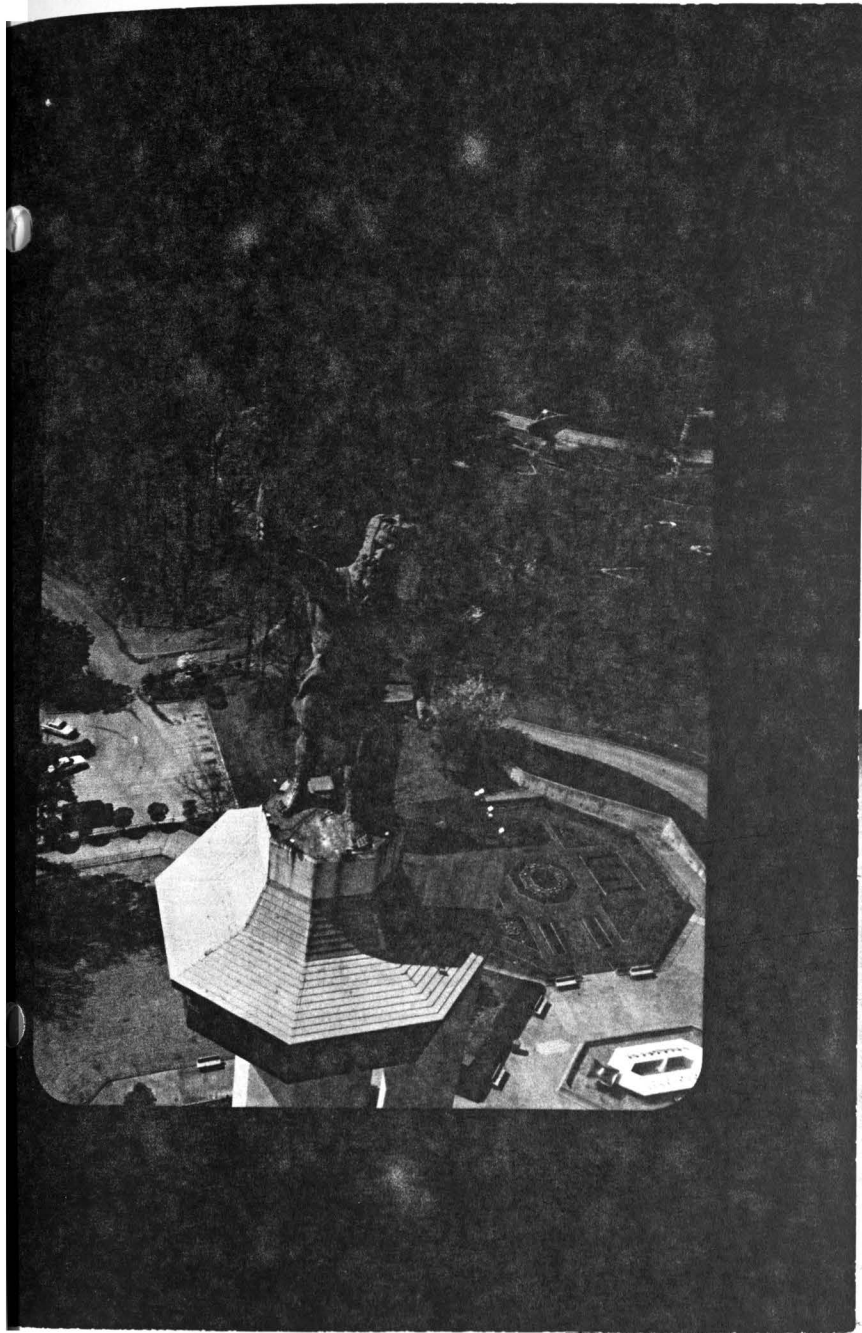
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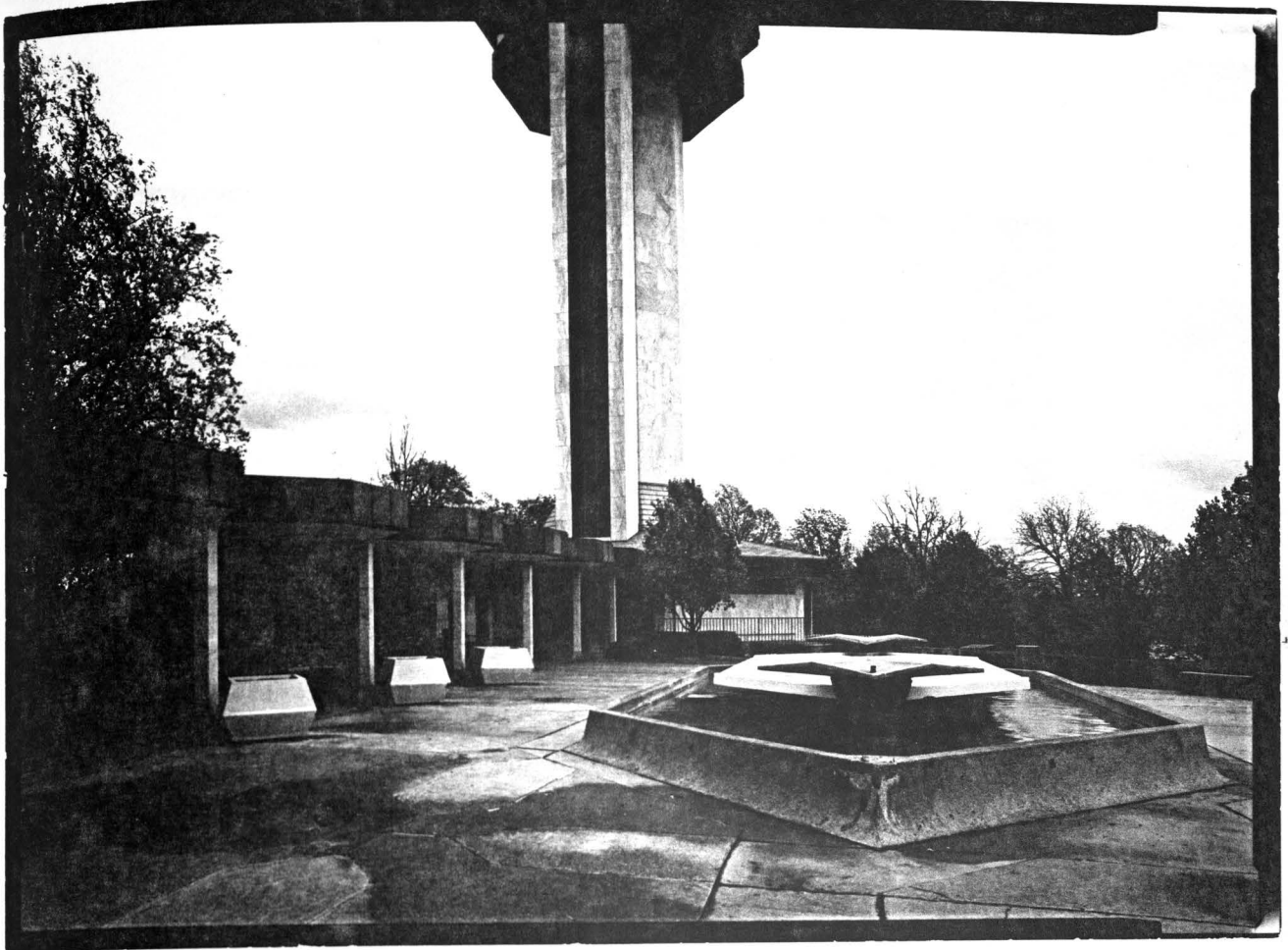


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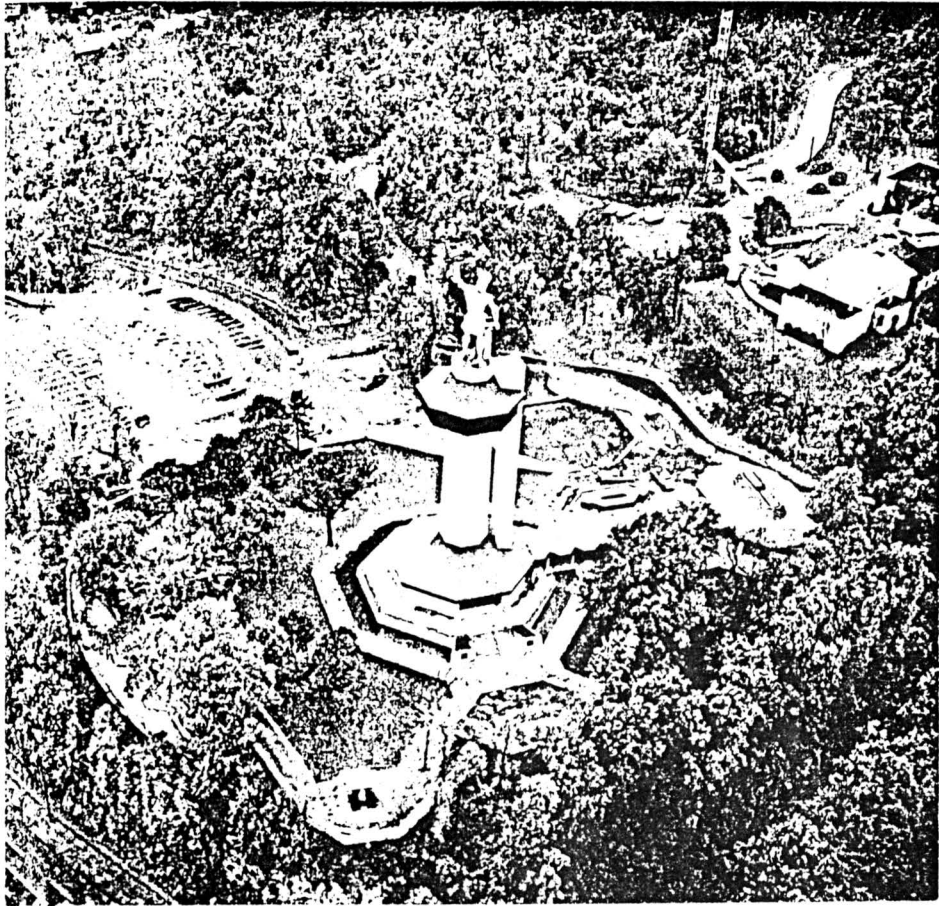


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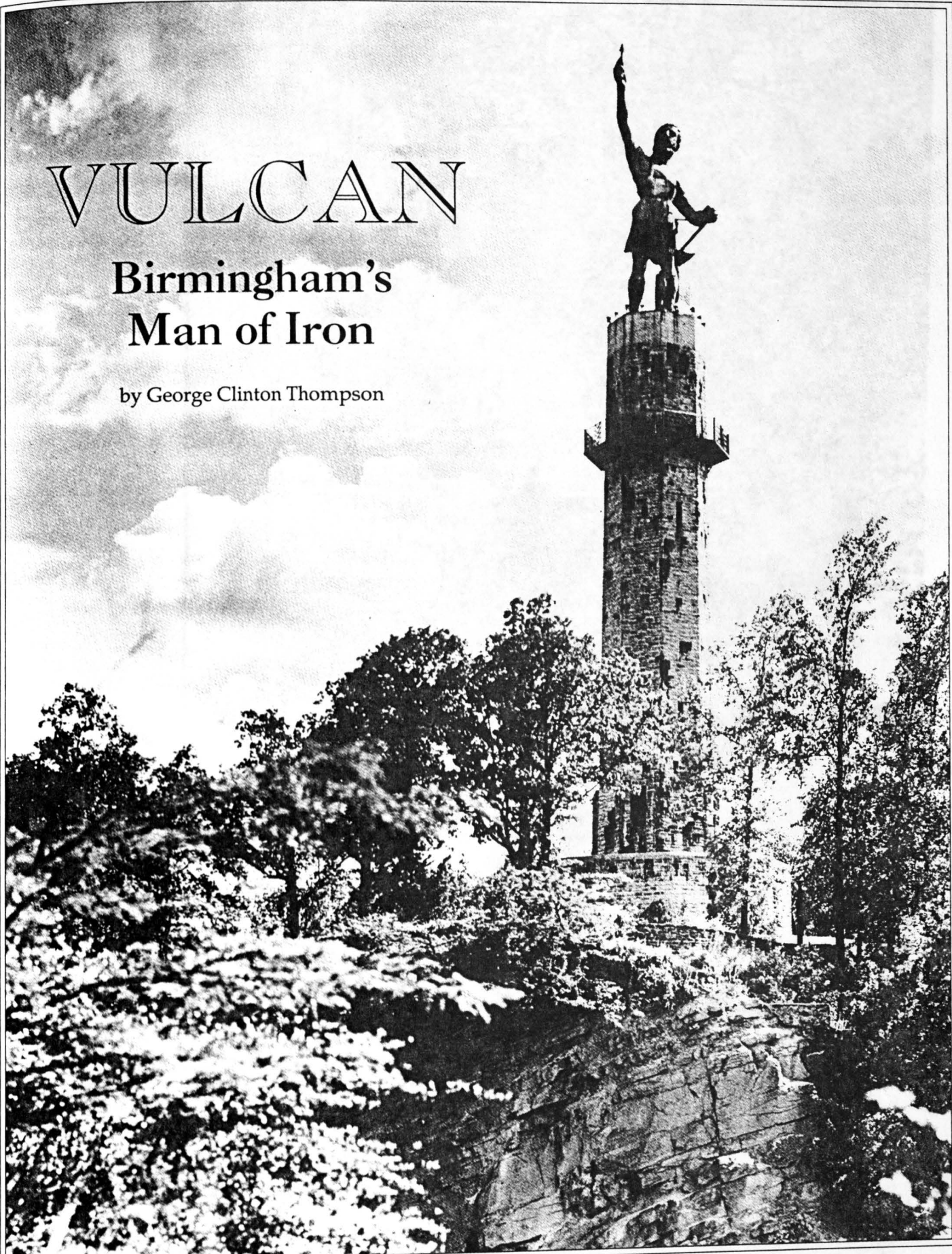
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VULCAN

Birmingham's Man of Iron

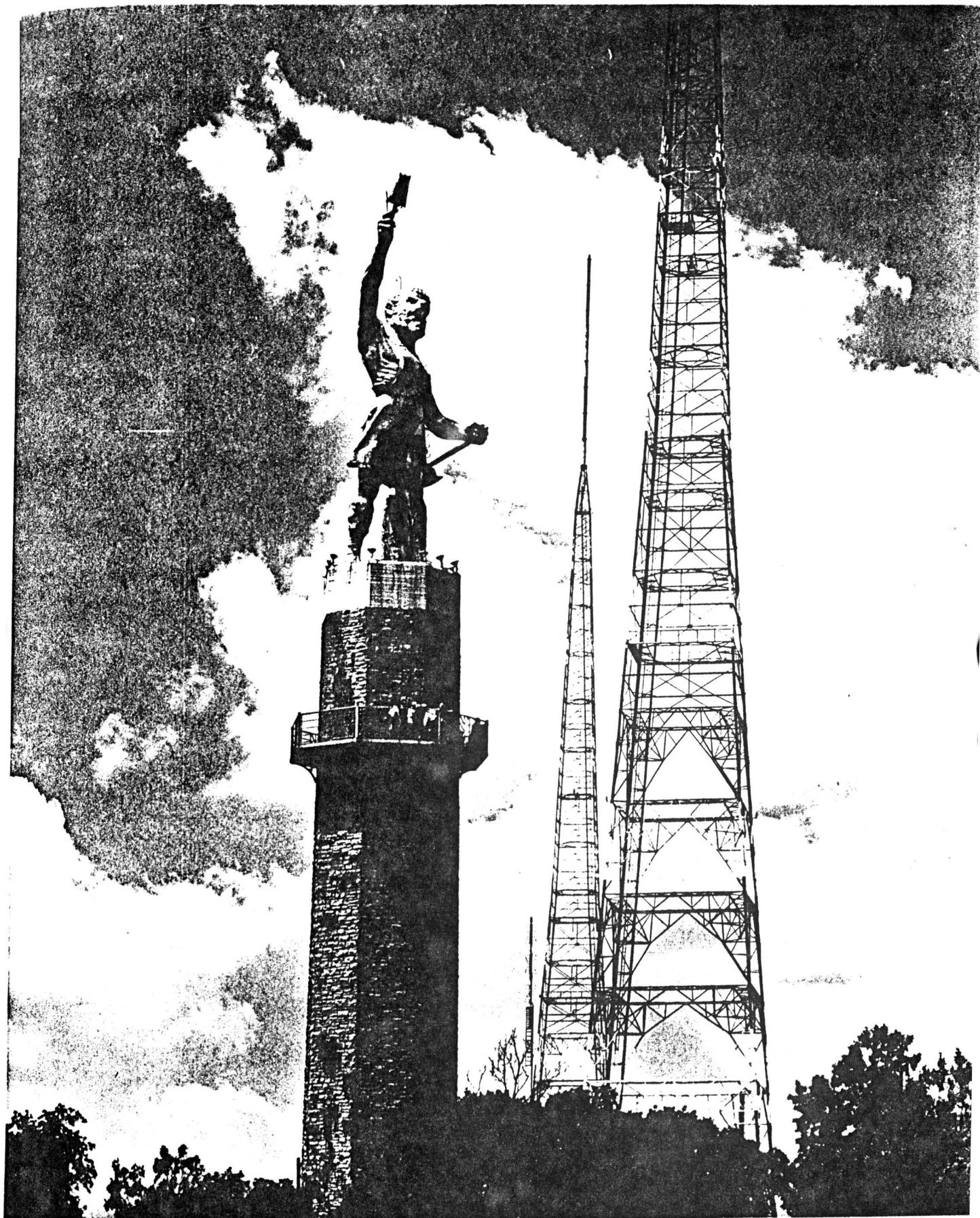
by George Clinton Thompson





ORIGINAL ARCHIVES

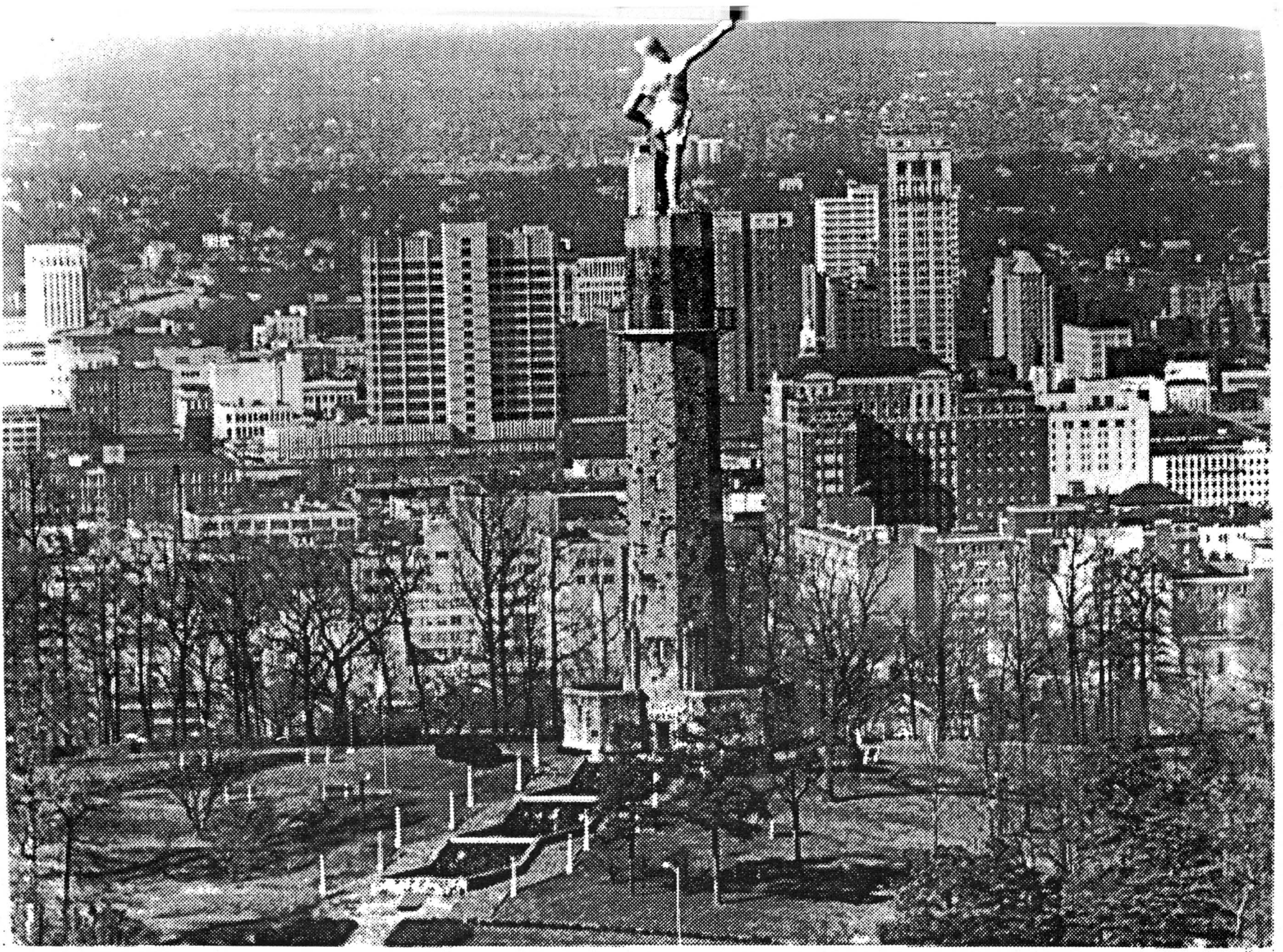




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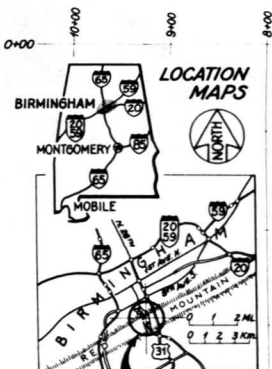


original ARCHIVES



VULCAN STATUE and PARK • 1904, 1936

BIRMINGHAM, ALABAMA



VULCAN STATUE and PARK
UTM Ref: 16.519010.3705620
(Statue pedestal)

Based on Rand McNally Road Atlas
(1990), p. 8.

In 1903 the Birmingham Commercial Club commissioned the Vulcan statue for the 1904 Louisiana Purchase Exposition as a prominent symbol of Birmingham's spirit and industry. Within a six-month period, it was designed by Giuseppe Moretti, cast locally of Birmingham pig iron, and erected in St. Louis, a remarkable feat for the world's largest cast iron colossus. After the exposition closed, Vulcan stood for years at the Birmingham fairgrounds. In 1935 the Kiwanis Club inaugurated a project to relocate Vulcan to Red Mountain as a city symbol. The monument was designed by the firm Warren, Knight and Davis and funded by the Historic Properties Administration. Erected atop Birmingham's famed "Big Seam" of red iron ore (from which the iron was smelted to cast Vulcan), the figure is easily seen on the city skyline; the monument and terraces afford magnificent views of

INDEX to PLANT MATERIALS

Botanical Name	Common Name	Key
Carya sp.	Hickory species	Ca/H
Celtis sp.	Hackberry	Ca/H
Cornus Florida	Dogwood	Co/D
Juniperus sp.	Juniper	J/J
Liquidambar	Sweet Gum	LS/S
Liriodendron	Tulip Poplar	LT/TP
Melaleucosiderach	Chineseberry	Ma/C
Pinus palustris	Longleaf Pine	Pp/LP
Populus deltoides	Cottonwood	PD/EC
Prunus sp.	Cherry/Plum	P/C
Quercus sp.	Oak species	Q/O
Rhododendron sp.	Azalea	A/R
Ulmus sp.	Elm species	U/E

1939 site features, planting locations and identifications based in part on Air National Guard aerial photo (10-5416-108) (4-14-38 April 14, 1938) - H.A. (12-400) Vulcan, Birmingham, Ala., Dept. of Archives and Manuscripts, Birmingham Public Library; and on Topographic Map Vulcan Park, City of Birmingham, Park and Recreation Board, Paragon Engineering, Inc., Leeds, Ala. June, 1969 Project No. 69-3

SITE PLAN



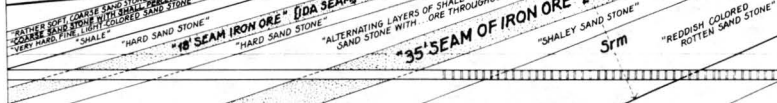
SITE KEY

- 1) Paths (approximate locations based on April 14, 1939 Air National Guard photo cited above)
- 2) 5'x8' aluminum sign on side of cut: "THIS RED MOUNTAIN IRON ORE IS BASIS OF BIRMINGHAM'S IRON-STEEL INDUSTRY"; two other signs designate top and bottom of "Big Seam". Signs erected in 1943 by Erskine Ramsey.
- 3) 50' railroad bridge spanning 20th Street (dashed) erected in 1910, demolished c. 1933 when 20th Street was widened. Rails westward removed c. 1945.
- 4) Street railway passing siding located here (Hudson and Cox, Street Railways of Birmingham, 1976, p. 68)
- 5) "Big Seam" outcrop projection not field checked; projection derived by passing geological site section below through site topography along ore seam line of strike
- 6) Viewing terrace with associated paths and stairs

Section B-B

Section C-C

Section A-A



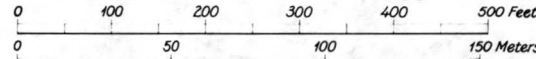
SITE SECTIONS

- MtP Tusculum Limestone and Fort Payne Chert undifferentiated
Dcfm Chattanooga Shale and Frog Mountain Sandstone undifferentiated
- Srm Red Mountain Formation: fine-grained sandstone...including hematitic beds and beds of ferruginous sandstone.
Oc Chickamauga Limestone
MtP/Dcfm/Srm/Oc Stratigraphy based on 1988 Geologic Map of

Alabama; strata named in quotations based on "Red Mountain Profiles" in Birmingham Water Works Co. Plan of Red Mountain Tunnel and Montgomery Highway, July, 1934. Vulcan monument based on original Warren, Knight and Davis elevation, 1936.

Scale: 1" = 50 Ft.

1:600



Birmingham and its industrial district. The pedestal, walls, steps and pools were constructed of locally quarried sandstone and iron ore. The park incorporated the drift of Lone Pine Mine (V3) and a portion of the Birmingham Mineral Railroad bed. This site plan shows the monument, park, and surroundings c. 1939. Landscaping appears to have been limited originally to a terraced lawn and the retention of selected pre-existing trees.

The Vulcan Statue and Park Recording Project was sponsored by the City of Birmingham, the Birmingham Historical Society, and Numrod Long

and Associates, Inc. under an agreement with the Historic American Engineering Record (HAER), HABS/HAER Division, National Park Service, as part of a long-range program to document industrial, technological and transportation sites significant to United States' history. This drawing was based on research performed by Matthew Kierstead (HAER historian) Marjorie L. White and Brenda Howell (Birmingham Historical Society), Joel Eliason (Numrod Long & Associates), and on site work by Richard K. Anderson, Jr. (industrial archeology consultant), Lewis Shannon, and Craig N. Strong (HAER Architect). Jet Lowe made the formal HAER photographs.

DRAFT

HAER Draft
Revised
Sept 30. JKS

HISTORIC AMERICAN ENGINEERING RECORD

VULCAN STATUE AND PARK

HAER NO. AL-

Location: UTM coordinate: 16.519010.3705620. The Vulcan statue is mounted on a 124 foot pedestal in Vulcan Park, which is adjacent to, and southwest of Twentieth Street at the crest of Red Mountain, a ridge overlooking the city of Birmingham, Jefferson County, Alabama.

Present Owner
And Occupant: City of Birmingham Parks and Recreation Board

Present Use: Public park and observation area

Significance: The Vulcan statue was cast from Birmingham pig iron to promote Alabama's iron industry at the 1904 Louisiana Purchase Exposition at St. Louis, Missouri. A feat of the iron founder's art, the fifty-five foot tall Vulcan is reputedly the largest cast iron statue in the world. In 1935, the Vulcan was moved to Red Mountain, where a landscaped park was constructed by the Works Progress Administration. The Vulcan statue is significant as an unusual American colossus created from local material, under technological constraints, to promote regional industry.

DRAFT

Birmingham evolved from land speculations of the Elyton Land Company, and struggles between speculators for the strategic location of railroad lines. When incorporated on December 19, 1871, Birmingham had a population of 1200.³ The presence of iron ores in the region was well-known, as iron smelting furnaces which supplied the Confederacy during the Civil War, such as those now standing at Tannehill, still dotted the countryside. The region also contained abundant supplies of ~~magnesian~~ dolomite ²¹ limestone for blast furnace flux, and timber for charcoal to fuel the iron furnaces. Charcoal was expensive to make, and was being replaced elsewhere in the United States by anthracite or coked bituminous coal as a blast furnace fuel. The presence of coal in the Birmingham District was also known, but it was only mined on a small scale for domestic use. Birmingham's early industrialists realized that in order for the city to rise to prominence as a manufacturer of iron, a product which matched the quality of Northern competitors had to be manufactured in volume, using coke as a fuel source. On February 26, 1876, the Experimental Coke and Iron Company successfully tapped the first Alabama coke-smelted pig iron at the Oxmoor furnace, just to the south of Red Mountain.⁴ The success of the "Oxmoor experiment" led to the exploitation of the Pratt coal seam, a coking coal deposit located at the northwest edge of the ~~city~~. Mining operations in the Pratt seam spawned the operation of beehive coke oven batteries, and in 1880, the first coke-fired iron furnaces in Birmingham were opened by the Alice Furnace Company. Several iron

furnace facilities were constructed during the 1880s, including the Woodward and Sloss plants. Birmingham emerged as the core city in an industrial district that stretched along the iron ore seams of Red Mountain, and spanned from the Warrior coal field in the west to the Cahaba field to the east.

By 1890 the Birmingham District boasted twenty-five blast furnaces, and had risen from the twentieth largest U.S. producer of raw iron in 1870 to the fourth largest.⁵ This rapid industrial growth was accompanied by phenomenal population growth--in 1880, Birmingham had 3,086 residents; by 1890, the population figure had risen to 26,178.⁶ The absorption of mining and smelting suburbs through the Greater Birmingham Act in 1910 greatly expanded the physical size and population of the City. Birmingham's population rose from 38,415 in 1900, to 132,685 in 1910.⁷ By 1904, when Vulcan was created, Birmingham's iron and steel businesses, railroads, utilities, and banks were consolidating into more powerful concerns. During the first decade of the Twentieth Century, Birmingham had become the most powerful industrial community of the South, and held sway over the economic activities of the State of Alabama.

By the turn of the century, Birmingham's prominence as a great industrial city gave it the name "The Pittsburgh of the South". Although Birmingham also goes by the moniker "The Steel City", and steel is still made there, Birmingham was primarily a

manufacturer of merchant pig iron. Birmingham iron ores are high in phosphorous and silica, making them excellent for the production of pig iron. The chemistry of local ores necessitated highly energy-intensive processes for the manufacture of steel, however, which is essentially iron with an artificially manipulated carbon content. The first economically successful manufacture of steel in the District was accomplished at Ensley on November 30, 1899 by the Tennessee Coal and Iron Company, which was later absorbed by United States Steel, now USX, ^{This company} which currently operates the vast, state-of-the-art Fairfield pipe and sheet steel mill just west of ^{Birmingham} ~~the city~~.⁸ ~~The~~ large-scale production of pig iron made Birmingham an ideal location for cast iron foundries, such as the Hardie-Tynes and Stockham Valve and Fitting^S. The ^{District} ~~city~~ became a prime location for manufacturers of heavy castings, including the world's largest manufacturer of cotton gins.⁹ The metallurgical qualities of Birmingham's pig iron made it especially suitable for the manufacture of cast iron pipe, and the ^{District} ~~city~~ became the largest manufacturer of cast iron pipe in the U.S.¹⁰ With plants of the American Cast Iron Pipe Company (ACIPCO), McWane Cast Iron Pipe, and U.S. Pipe and Foundry all still operating, cast iron pipe remains the bastion of the District's iron-related industry.

EARLY BIRMINGHAM AND VULCAN

Birmingham's prominence in the manufacture of iron and related products has always been a source of great civic pride. This pride has long been associated with, and symbolized by, Birmingham's Vulcan statue, and the name of Vulcan. Vulcan appeared as an image associated with area metallurgy as early as 1885, when he was depicted in an engraving ~~in an~~ advertisement for George C. Kelley's hardware concern, a seller of "Mining, Furnace, Railroad and Mill Supplies and Agricultural Implements.", which appeared in a promotional volume, The Mineral Wealth of Alabama--And Birmingham Illustrated.¹¹ The bearded Vulcan is depicted clad in skins, naked to the waist. He is not depicted at his forge, but is shown ^{to} breaking up a rock ledge ~~with~~ ^{using a} long-handled sledge hammer, with a smoking volcano in the background. It is unlikely that this one image had any direct impact on future Birmingham promotional imagery, but it serves as an early example of the use of the image of Vulcan in association with area industry. This association is still meaningful today, as thirty-nine Birmingham ^{area} businesses still use the Vulcan name.¹²

By the 1890s, Birmingham hosted an increasingly ethnically diverse and commercially-oriented population. Many ethnic and commercial civic groups emerged with various agendas. On February 27, 1891, a group of eleven Birmingham businessmen were granted

^a
their request to incorporate the Birmingham Commercial Club, "a social and literary society...[for the] social and literary improvement of its members...". This society offered no shares, and was "...not formed for pecuniary purposes."¹³ Two years later, on July 10, 1893, the Club reincorporated under the same name, but with markedly different articles. The Club offered 1,000 shares at \$1.00 each, and stated that "The general purpose of the Club shall be to encourage social intercourse and good feeling among businessmen; to foster an...honest, active and enterprising commerce; to watch over and protect and advance the business interests and general welfare of Birmingham and Jefferson County...[and] to agree upon commercial forums and regulations..."¹⁴ The power and resources of the Commercial Club, and their dedication to the industrial success of Birmingham is evidenced by their \$40,000 capital contribution toward the first technically successful manufacture of steel in Birmingham.¹⁵ This club would later ~~task themselves with the development and financial backing of~~ the Vulcan statue.

Another newly-formed civic organization was the German Turin Verein Society, a social club ^(for those) of Germanic ^{descent} heritage. According to the Society's articles of incorporation, dated November 8, 1887, the object of the Society was "...to strengthen and improve the body in general and shall regular schools be started to this purpose."¹⁶ Despite the apparently high-minded ideals of the Turin Verein Society, ^{it} ~~they~~ ^{is} are better known for

~~Initiating~~ ^{introducing} the celebration of Mardi Gras ^{to} ~~in~~ Birmingham. In 1895, the Turin Verein realized the economic potential for holding a Mardi Gras ~~celebration~~ in the ~~city~~ ^{Members} and approached the newly-reincorporated Commercial Club regarding the matter. Birmingham held ~~the~~ first of five annual Mardi Gras celebrations ^(began) on February 18, 1896. These ~~Mardi Gras~~ celebrations were, according to tradition, presided over by a mythical king and queen, who were from a distant, exotic place. The king and queen were played by local luminaries, ^{whose identity} ~~who by~~ festival decree ~~were only~~ allowed to ~~be~~ reveal ^{ed} ~~their true identity~~ at the ~~festivals~~ closing ~~grand~~ ball. The image chosen for the first ~~Birmingham~~ Mardi Gras king was a mythical hybrid monarch titled "Rex Vulcan I". This first ~~Mardi~~ ^{monarch} ~~Gras king~~ hailed from the far-off "Cape of Good Hope", but also bore the name of Vulcan.¹⁷ ~~Four more Mardi Gras celebrations were held in Birmingham, and~~ ~~Four~~ "Rex Vulcans" presided over ~~them~~. Unusually bitter winters plagued the festivals, which led to their discontinuance after 1900. From the ^{se} ~~Mardi Gras~~ festivals, however, a consistent mythical image with metallurgical connotations emerged as a symbol associated with ~~the city of~~ Birmingham. This symbol was developed by, and had the approval of, two notable civic organizations, most significantly, the Birmingham Commercial Club.

VULCAN IN MYTHOLOGY

The image of Vulcan is an appropriate and logical image for ~~the city of~~ Birmingham, for it combines a dynamic heroism with the tradition of metalworking. Vulcan, the Roman counterpart to the Greek god Hephaestus, was portrayed as the god of fire in classical mythology, and emerged as the patron figure of the forge. According to myth, Vulcan was the son of Jupiter and Juno. Vulcan was described as having a deformity, usually referred to as lameness. There are varying accounts as to the origin of his deformity. Vulcan was either born deformed, and thrown from heaven in dissatisfaction by his mother, or was expelled as a result of his intervention in an argument between his parents, with his injuries resulting from his fall. Once on earth, Vulcan resided underground, and became the blacksmith to the gods, assisted by the one-eyed Cyclops, with his workshop deep within smoky Mount Etna. Vulcan was taught to make Jupiter's thunderbolts by Minerva, and his metallurgical accomplishments include forging the house of the gods from brass, the building of Apollo's chariot, the making of Aegis, the shield of Jupiter, and the armor of Achilles and Aeneas. Vulcan's creations were noted for beauty and craftsmanship, and were made from precious stones and a variety of metals. Achilles' shield, for instance was formed of five metal plates, two of brass, two of tin, and one of gold.¹⁸ The ability to bond these metals together was a challenge of the blacksmith's art, and mention of this process

implies that the Greeks had knowledge of advanced weapon forging techniques, such as layering of metals, first developed in Asia Minor. As a result of Vulcan's association with fire, and his manufacture of various precious metal objects, the god became associated with the forge, and other creative arts such as architecture, armory, blacksmithing, and carriagemaking.

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THE VULCAN STATUE

In May of 1903, the Louisiana Purchase Centennial Exposition Commission invited the State of Alabama to participate in the Exposition, to be held in St. Louis, Missouri, from April 30 to Dec 1, 1904.¹⁹ The Exposition was a celebration of the centennial of the Louisiana Purchase, through which Thomas Jefferson doubled the ^(and mass) territory of the United States by purchasing the Louisiana Territory from France.

Expositions and World's Fairs were internationally popular at the turn of the century, the 1893 Chicago World's Columbian Exposition being a notable example. Featured countries or states were usually invited by the event coordinators, which negotiated exhibit content and space with the participants. Fairs and expositions featured popular attractions and wonders from around the world and across the United States, however, they also served as commercial and economic promotional vehicles for the host city and state, and also for the participants. Although the fairs and

expositions were ostensibly held to celebrate historical events, they served an important role in increasing awareness, commerce, and trade through the state exhibits, which often prominently featured the animal, mineral and vegetable commodities of the participating states. Exposition architecture and exhibits were often lavish in appearance, but of cheap, temporary construction. Fair construction was usually compartmental, with individual structures for each state, such as "the Ohio Building", or devoted to themes, such as "the Palace of Agriculture".

The State of Alabama participated in the 1893 World's Columbian Exposition in Chicago just a decade prior to the St. Louis Exposition, and \$38,000 was spent on the Alabama exhibit at Chicago. For reasons which remain unclear, however, "the Legislature, and the State Administration deliberately refrained from making any provision for Alabama's participation in the World's Fair at St. Louis".²⁰ The details of the organizational history surrounding the conception and funding of the Vulcan project are covered in exhaustive detail in the Birmingham Age Herald and News, and cannot be elaborated on here at great length.

- also in the New Orleans World Ex.

Another primary source, however, which outlines the relevant facts from this period is a letter to the Editor of The Birmingham News, written by Fred M. Jackson, Birmingham Commercial Club President, in response to apparent inaccuracies

that were appearing in the newspaper at the time of Vulcan's move to Red Mountain in 1935.²¹ The second paragraph of the article briefly outlines the organizational history, and appears here quoted in entirety: "At the time of the St. Louis Exposition, in 1904, I happened to be president of the Commercial Club, now the Chamber of Commerce. Efforts were being made by leaders throughout our state to have the state government make an exhibit at the exposition. These efforts failed completely. Col. Rufus N. Rhodes, editor of the Birmingham News; Robert Jemison, Culpepper Exum, B.F. Roden, and several others at my request came to my office and discussed the feasibility of an exhibit being made by the city of Birmingham and Jefferson County. Many plans were suggested. James A. MacKnight, a well-known newspaperman, who was living near Calera, came to me with a proposition of building an iron man and placing him as the center of the exhibit. A discussion with the directors was had and Mr. MacKnight was employed to locate a sculptor, or someone capable of designing a figure symbolic of the mineral resources of the district, iron predominating. Mr. MacKnight met G. Moretti, an Italian sculptor who had only been in the country a short time. The result of this interview was the selection of the god of iron, Vulcan, as the subject of the figure. A plaster cast was made of the figure, brought to Birmingham, and molded by the McWane Iron Company. The figure was designed entirely on the basis of Mr. Moretti's conception of Vulcan."

Little progress was made in securing state funding for an Alabama exhibit during the Summer of 1903, and the September session of the legislature proved fruitless as well. Early ideas for the Alabama display included geological relief maps of the state and the Birmingham District. As late as November 4, 1903, after Birmingham's liason with the Exposition authorities in St. Louis had already begun, James MacKnight appealed to Charles P. Lane, president of the Commercial and Industrial Association of Alabama to help rally the commercial forces of the state toward the creation of a state exhibit at St. Louis. Much enthusiasm, but little financial support was garnered from the Association, or several other emerging Commercial Clubs in Alabama cities such as Huntsville and Decatur.

By October of 1903, the Birmingham Commercial Club realized that it would have to take matters into its own hands. At a meeting on October 13, 1903, The special committee of the Commercial Club which was considering the St. Louis Exposition appointed an executive committee to advance the work on the exhibit. The executive committee consisted of president Fred Jackson, Rufus N. Rhodes, Culpepper Exum, Col. T.G. Bush, and George H. Clark. James A. MacKnight was also appointed as a "special agent" to the project. James Arthur MacKnight was Born in Salt Lake City in 1855. He was educated in law in London and Paris, But pursued a career in Journalism, working for U.S. newspapers including the New York Tribune. He was also briefly

U.S. Consul to St. Helena.²² He was selected for involvement in the St. Louis Exposition not only for his "iron man" concept, but for his connections with Exposition authorities. MacKnight had previously worked with Exposition Director J.V. Skiff as a writer; Skiff's chief assistant, Hoch was a colleague at the New York Herald, and MacKnight had worked with Exposition Secretary Stevens as an editor at the St. Louis Times.²³ These associations led to opportunities for MacKnight to write Vulcan releases for the Birmingham press, as well as other Exposition Publications.

At the October 13, 1903 meeting, the Commercial Club voted to adopt an Exposition exhibit concept which MacKnight had first suggested to Club member J.V. Gibson in May of 1903. MacKnight's original idea was for a colossal human figure, from forty five to sixty feet tall, composed of iron, steel, coal, and limestone, all from the Birmingham District. This concept was originally rejected as "impractical and visionary" by the committee on the Exposition.²⁴ At the meeting, the Vulcan idea had advanced considerably. The committee "decided on the plan to build a colossal statue of Vulcan entirely out of Alabama iron, as the central object of the exhibit. All the raw materials and Manufactured products of the Birmingham District will be artistically arranged and shown to the best possible advantage."

²⁵ Ultimately, this is how the Birmingham District exhibit was composed when installed in the Palace of Mines and Metallurgy.

It is not clear exactly when the name Vulcan became associated with the Birmingham St. Louis Exposition figure. The Jackson quote above gives the sculptor Moretti credit for the final depiction, and implies that in the selection of Vulcan as the proper symbolic vehicle, Moretti had a strong say in the matter. The Vulcan name, however, appears in the Birmingham Age Herald on October 14, the day after the forming of the special Exposition Committee, and more importantly, several weeks before James MacKnight met Moretti for the first time. James MacKnight is often credited with the Vulcan idea, but should perhaps only be considered responsible for the "iron man" concept. MacKnight, in an interview in early 1904, stated "I first figured on building a rough figure out of steel billets, pig iron, fragments of coal, iron ore, and lime rock. But the idea caught fire, and somebody suggested an iron Vulcan."²⁶

Once the decision had been made, practical efforts began toward the creation of the exhibit. MacKnight served as liason between the Commercial Club and his former associates within the Exposition authorities, traveling to St. Louis several times to confirm the feasibility of the Vulcan display and to secure a desirable space within the Palace of Mines and Metallurgy. On the 27th of October, the Tennessee Coal and Iron Company, as well as the Sloss-Sheffield Steel and Iron Company agreed to include their displays with the Birmingham District exhibit, adding considerably to the scope of the displays.

The purpose of the Vulcan statue, and the Birmingham district exhibit was multifold. Vulcan was certainly an attention getter, and a display of pride, foundry skill and technical bravado. The exhibit, however, was also symbolic of Birmingham's particular industries; it was a vehicle to advertise not only the products of the District, and by extension the metallurgical and geological potential of an emerging industrial South; it was also a way to attract an influx of industries and workers to the region, swelling the economy and the population through the realization of the potential for growth that the District had to offer. Quotes from the earliest days of the exhibit's conception certainly address these issues, and make the hopes and intent for the Vulcan and the exhibit plain: "The colossus of Birmingham iron will be a fine work of art and will be a credit to Birmingham for all time to come. Vulcan represents the genius of the liberal arts, and is especially the patron of the workers in metals. The figure is therefore, extremely appropriate."²⁷ Another quote states that: "The Iron Man will indeed stand for Birmingham, the massiveness and solidarity of our statue typifying the great industrial city of the South, a city destined, in time, to be the foremost in the United States in all that pertains to iron and steel making."²⁸ And finally: "We cannot live by ourselves, we must bring in new people to upbuild our Birmingham district, and I believe this 'giant man' will be a powerful advertisement toward this end."²⁹

James MacKnight's major task in early November, 1903, was to find a sculptor both qualified and willing to take on the Vulcan commission. It is not clear exactly where MacKnight travelled in search of a suitable sculptor, but New York City is mentioned, and the only named potential sculptor was Cyrus Dallin of Boston, Massachusetts. Dallin was apparently interested, but when he was told of the time constraints involved (five months from drawings to delivery), he replied that anyone who thought such a project could be done in less than two years was "off the rails".³⁰

On or just prior to November 23, 1903, James MacKnight signed a contract for the sculpting of the Vulcan statue with Italian sculptor Giuseppi Moretti in New York, where the sculptor kept his residence and studio (figure 1). According to one account, an eight foot clay model was made before the signing of the contract, indicating Moretti's enthusiasm for, and prior knowledge of the project, and the Vulcan concept (figure 2). It is not clear whether the model was the result of a series of consultations during which MacKnight and Moretti worked out the iconographic program and physical appearance of the statue, or whether it was entirely Moretti's conception, as the Fred Jackson editorial states. In any event, MacKnight was suitably impressed, and hired Moretti. The model which Moretti showed MacKnight was displayed at the Commercial Club, and later used in the scaling up the full-sized work. Several sources note a series of

"arguments" which took place within the Commercial Club after Moretti was hired, in which the ultimate appearance of Vulcan was debated.³¹ Apparently some faction must not have liked Moretti's model, and advocated a "handsome Hermes", while others supported the "ugly Vulcan". Obviously, those who supported the choice of Vulcan as conceived by Moretti, and accepted by MacKnight, won out.

Giuseppi Moretti was born in Sienna, Italy, on February 3, 1857. He commenced his artistic education in the sculpture studio of Tito Serrochi at the age of nine. When Moretti was fifteen, he was apprenticed to the Florentine sculptor Giovani Dupre. Moretti continued to learn the art of sculpture in the marble quarrying area of Carrara, and assisted the sculptor Rendici in the Croatian city of Agram. Moretti worked in Vienna, and Budapest, where he sculpted a bust of Emperor Franz Josef. In Transylvania, Moretti pursued an interest that was to become an obsession once ensconced in Alabama: the exploitation of sources of sculptural marble.

Moretti left Europe for New York in 1888, where he initially encountered unexpected financial difficulties. Through a twist of fate, Moretti was employed by Architect Richard Morris Hunt to make sculpture for two mansions, including a Vanderbilt Mansion in Newport, Rhode Island. Hunt was also the architect of the base for the Statue of Liberty. Moretti survived by executing

minor decorative and ecclesiastical commissions, and established connections with the Mott Iron Works, a major architectural and decorative iron foundry, and the Henry-Bonnard Bronze Company. Moretti started the Roman Bronze Company, the first art foundry in the U. S. to employ the lost wax process in bronze art casting.³² Moretti obtained the commission for his first important American statue, a likeness of Pittsburgh's Edward M. Bigelow, who was responsible for the creation of several parks in the city. Moretti moved to Pittsburgh in 1892, and sculpted a statue of composer Stephen Foster, and also executed a quartet of large panthers for the Panther Hollow bridge. Other monumental works followed, including the Highland Park entrance gates at both Highland and Stanton avenues.

Word of Moretti's abilities in large portrait statuary travelled, and he received commissions for statues in Rochester, New Hampshire, Akron, Ohio, and most significantly, a statue of Commodore Vanderbilt at Vanderbilt University in Nashville, Tennessee. After a decade of patronage in Pittsburgh, Moretti's political connections fell from power, and he returned to New York.

At this phase in Moretti's career, James MacKnight approached Moretti regarding the Vulcan Commission. Moretti signed the Commercial Club contract, and commenced the construction of the model and the patterns in New York. Moretti

moved to Alabama to oversee the casting of Vulcan. Moretti's travels in the Birmingham area took him to the dolomite quarries of the Talladega-Sylacauga "marble belt", where extremely high-quality marble, suitable for sculpture as well as architectural veneer, was being destroyed in the process of blasting out the intervening beds of dolomite for blast furnace flux. While working on the Vulcan statue, Moretti created what he considered his masterpiece, the Head of Christ from a block of Sylacauga marble (figure 3). The sculpture was displayed with Vulcan at St. Louis to demonstrate the quality of Alabama's marble. Moretti attempted to champion Alabama marble as a sculptural stone, but his quarrying ventures were dogged by bad financial luck. Several Moretti marbles grace Birmingham; unfortunately the Head of Christ is located at the State Archives in Montgomery, rather than in Birmingham, as Moretti wished.

Moretti took Birmingham resident and sculpture student Geneva Mercer on as his life-long assistant. Moretti briefly returned to New York and Pittsburgh, and in 1925 he returned to Florence, Italy, leaving behind the results of a prolific career in the sculpting of public monuments throughout the eastern and southern United States. Many of Moretti's works, such as the forty-five foot tall Battle of Nashville monument, were of considerable scale. Not only did Moretti create the World's largest iron man; he created the first aluminum one. Moretti was a pioneer in aluminum art foundry techniques, and created the

world's first aluminum art sculpture. Moretti was commissioned by the Mellons of Pittsburgh and ALCOA to make an aluminum sculpture of Charles M. Hall, inventor of the first commercially practical method of refining the metal. ALCOA's research department developed the metal for the casting, and the statue was given to Oberlin College in Oberlin, Ohio, Hall's alma mater.³³ In 1928, after executing over 150 American commissions, Moretti retired to his idyllic studio setting, the Villa Bellosguardo, on the Italian Riviera at San Remo. Moretti worked there until his death on January 17, 1935.³⁴

The existing sources on Vulcan do not reveal exactly how MacKnight arrived at the choice of Giuseppe Moretti. Given the circumstances, however, Moretti appears to be a logical choice if not an obvious one. Moretti was an appropriate choice for several reasons. MacKnight was investigating the art centers of the eastern U.S., and was likely encountering many art world promoters and figures along the way. Moretti had established relationships with art foundries, he was well-known in Pittsburgh, and he had done reasonably prestigious work, such as the Hunt/Vanderbilt commissions. Moretti was, like Bartholdi, the sculptor of the Statue of Liberty, a known, ambitious, mid-career artist who occupied a second tier below American sculptors such as Augustus Saint-Gaudens and Daniel Chester French, in terms of quality of work and ultimate notoriety. Moretti's name could have been among dozens that came up during MacKnight's search. Moretti

was well-suited to the job due to his background and classical education, and his familiarity with the genre of mythological sculpture. Moretti was also comfortable and competent with the execution of large-scale works of sculpture.

Another possible link between MacKnight and Moretti may be Moretti's role as one of several providers of sculpture for the 1897 Tennessee Centennial. MacKnight took over the administration of the Alabama State Fair in 1898, and could possibly have been a professional associate of Mr. E.C. Lewis, Director-General of the Tennessee Centennial. Considering MacKnight's administrative connections with the St. Louis Exposition authorities, there may be some connection. In any event, E.C. Lewis's praise of MacKnight's choice of Moretti sums up what the Commercial Club were looking for in a sculptor: "You are to be congratulated on the choice of your artist, G. Moretti. No man living can excell Moretti in a grand conception of a grand idea, to be portrayed in metal or marble. Every instinct of the man is artistic...He will grasp what the statue of Vulcan must be to represent Alabama."³⁵ And ultimately, the most important factor favoring Moretti's selection as the sculptor of the Vulcan statue was that MacKnight was desperate to find someone, and Moretti accepted the challenge.

For Moretti, or any sculptor engaged in the creation of monumental sculpture at the turn of the century, the Vulcan

commission was likely a tantalizing one. For some sculptors, at least for Cyrus Dallin, interest was lost due to the temporal constraints of the project, which Moretti ultimately proved possible, albeit at the expense of some fine control over the appearance of the finished product. Vulcan was conceived at the tail end of a period when colossi were popular, particularly in Europe. With the Nineteenth-Century neoclassical revival, both large-scale sculpture, and allegorical, mythical, symbolic themes dominated academic art and architecture. Numerous colossi were erected in Europe, the largest example of which, The Statue of Liberty, was given to the United States. Moretti, practicing in 1903, with his experience sculpting in several European countries, was the product of a time and place in which the opportunity to sculpt a colossus was the opportunity of a lifetime. Vulcan was a unique opportunity, one that could possibly thrust Moretti into greatness. This may also explain why Moretti accepted the commission to sculpt Vulcan from MacKnight.

THE CASTING OF VULCAN

Once the contract between Giuseppe Moretti and the Birmingham Commercial Club was signed, the sculptor retired to his studio on 152 West 38th Street, New York City, to begin the Vulcan project. The first step in the creation of the full-size Vulcan was the eight foot model, constructed from clay applied to

a wooden armature. This model was primarily for the use of the pattern makers, but it also served a publicity role, as the first published photographic images of Moretti's Vulcan were of the model. The completed model was also briefly displayed at the Commercial Club offices in Birmingham.³⁶

The next step in the process was the construction of the full-sized pattern and molds. Most of the literature on the casting of Vulcan uses these two specific foundry terms somewhat indiscriminately, resulting in confusion. For clarity, a pattern is a positive, or copy of the object to be cast in metal, and a mold is a negative, hollow impression, made from the pattern, in which the molten metal is poured to make a positive casting.

Giuseppe Moretti had difficulty locating a suitable space for the erection and handling of the patterns, and finally the work was begun in the nave of the incomplete St. Stephen's Church in Passaic, New Jersey. Moretti used skilled Italian patternmakers for the project, likely the reason for selecting a New York-area location rather than a Birmingham one.³⁷ The practice of making the pattern at a location close to the artist's studio, often at a great distance from the actual foundry work, was not uncommon. It was more convenient for an artist to work with established resources close to home, and Moretti's established relationships with New York-area foundries has already been mentioned. The casting of the object close to

its ultimate location made sense, for it was far cheaper to ship relatively light plaster patterns than completed metal castings. Vulcan had to be cast in Birmingham--that was a critical part of the statue's symbolism.

The methods used by Moretti's craftsmen to scale up the model of Vulcan to the full-sized pattern were a combination of enlargement from mathematical measurements and templates, and sculpting by hand and eye. One view of the pattern-making process shows the workers posed around the head and shoulders of the statue, with one worker perched on the shoulder with a slightly larger-than-life bust model of Vulcan, which was consulted by the pattern makers in scaling up the model (figure 4). Due to the massive size of the sculpture, the patterns had to be made in several sections. The pattern armature from feet to hips was constructed as one piece (figure 5). An armature was constructed of heavy timber, and the approximate surface shape of the figure was built over the armature using lathing. The lathing was covered with a layer of clay, and the final sculpting, carving, and refinement of the surface was made in a layer of plaster. When the plaster patterns were dry, they were sawn into sections that corresponded to those later cast in iron. The next step was the creation of negative molds from the positive patterns, that is a set of molds with an impression on their inside surface of the outside of the eventual object to be cast. The positive plaster pattern was coated with a thin layer of water-resistant

material to aid parting, and a thick layer of plaster was laid over the outside of the pattern. When the plaster dried, it was removed in carefully-cut sections, and reassembled to create a matrix. The matrix, a hollow negative mold of the section to be cast, was made by binding the negative mold sections together to form an empty shell. A carefully-made solid core was then built up inside the empty matrix. The empty space between the negative matrix and the core roughly followed the intended section thickness of the eventual casting, in this case from roughly three and one quarter inches to three quarters of an inch. Once the matrix and the core were made ready by coating the inside surfaces with parting material, plaster was poured into the gap between the matrix and the core and allowed to dry. The matrix and core were then separated from the final pattern, which emerged a fully-dimensioned plaster positive version of the sections to be cast in iron for Vulcan. These plaster pattern sections were fragile, and were carefully packed for shipment to Birmingham. Conditions in the empty church were not ideal for making the plaster patterns. The plaster froze before drying in the open church, and the buttocks, head, and apron cracked as a result, requiring repair by Moretti.³⁸

The first section of the Vulcan patterns, the section from the waist to the knees, arrived in Birmingham on Thursday, February 12, 1904, and sat strapped to a flatcar awaiting the signing of the casting contract. Originally, the casting was to

have been performed by a "Dimmick pipe plant", one of four original bidders for the Vulcan job.³⁹ This plant is possibly the American Casting Company, incorporated on October 26, 1903 by Daniel and Harry Dimmick.⁴⁰ The Dimmicks, however, were no longer associated with the Vulcan casting by the time the first parts arrived. The contract for the casting of Vulcan's anvil, hammers, and anvil stand went to the Williamson Iron Company. These were large, heavy castings, but they did not require the special skills or facilities required to cast Vulcan, and may have been subcontracted out by the firm that was awarded the contract for casting Vulcan, The Birmingham Steel and Iron Company, which was located across the street from the Williamson firm, on the site of the former Linn Iron Works, the first iron concern in Birmingham.

The Birmingham Steel and Iron Company filed for a Certificate of Incorporation from the City of Birmingham in the fall of 1903, and the Certificate was approved on October 2nd. The company issued \$50,000 worth of stock divided into 500 shares. Mr. James Ransom McWane was listed as President, Treasurer, and Director, with seventy-five shares; W.T. Adams was listed as Vice-President and Director, with seventy-four shares, and T.W. Roberts was listed as Secretary and Director, with one share. The Company's declaration of intent was ambitious; they made legal provision for their intent to operate a foundry or foundries, manufacture steel, bar iron and other metals; they

intended to mine coal, rock and slate, make coke, own houses and commissaries for workers, and to make tools, and equipment for railways and tramways.⁴¹

James Ransom McWane came from a family with a strong background in foundry work. His grandfather, James McWane emigrated from Scotland to Virginia in 1805, and was involved with the development of the McCormick reaper. James McWane's third son, Charles Phillip, started a plow and foundry concern in Wytheville, Virginia in 1877, and in turn, Charles Phillip McWane's sons Henry, and James Ransom operated the Lynchburg Foundry Company in Lynchburg, Virginia. James Ransom McWane was President of Lynchburg Foundry 1898-1902. James Ransom had been educated as a preacher, but left the ministry to follow a desire for business. In 1902, James Ransom McWane left Lynchburg for Birmingham, Alabama, at the encouragement of The Birmingham Commercial Club, to seek his fortune in the burgeoning iron industry there. McWane later became Vice President of the American Cast Iron Pipe Company, or ACIPCO, in 1907, and became its President in 1914. In 1922, McWane started McWane Cast Iron Pipe, where he pioneered the manufacture of sixteen foot pipe, and held more than seventy-five patents. McWane developed the Pacific States Cast Iron Pipe Company in Provo, Utah, and also served as its president. James Ransom McWane died on June 24, 1933, but his legacy continued; today McWane Incorporated

continues to make cast iron pipe in Birmingham, and also operates other foundries throughout the South and the nation.⁴²

When James Ransom McWane came to Birmingham, he was offered a \$12,000 incentive by the Birmingham Commercial Club to help start his iron business, but he declined the offer. McWane was also encouraged to take over the property and equipment of the bankrupt Hood Machine and Foundry Company at 1421 1st Avenue North.⁴³ The Hood shop, later the site of Ward Baking, was located across First Street from what is the now-closed downtown Sears, Roebuck and Company, at the corner of the Fifteenth Street easement. Hood was what is called a jobbing foundry, a shop that made limited runs of castings for various customers, without a specific product or a dedicated market. On January 20, 1904, McWane and W.T. Adams purchased the Hood property for \$35,000, paying \$2,691.46 in cash, and agreeing to pay the balance of Hood's indebtedness, \$32,308.54, to the First National Bank of Birmingham. The deed included "...all stock on hand, tools, fixtures, material, patterns and supplies of every kind and character..."⁴⁴ On Friday, February 13, 1904, the contract for casting Vulcan was officialy let to the Birmingham Steel and Iron Company. McWane's bid was "probably 25 or 50 percent lower than any other firm would have made the casting."⁴⁵ On February 24, 1904, McWane and Adams took out a \$30,000 mortgage on their property, with the first \$5,000 payment due in January of 1905.⁴⁶ On April 9, it was announced that the Birmingham Steel

and Iron Company was planning major improvements in its physical plant, including a furnace for making steel, no small feat in Birmingham at the time, due to uncooperative high-phosphorus ores, and therefore probably a basic open hearth type furnace. According to the newspaper announcement, "the company accepted the contract to cast Vulcan, and for that reason has been delaying the work of reconstructing the place and building the new furnace."⁴⁷ McWane billed the commercial Club \$10,070 for casting Vulcan--\$2279.91 for machine work, and \$4842.82 for foundry work. The Club consulted with an independent authority regarding the figure, and suggested to Mr. McWane that the price was exorbitant. McWane then offered to reduce the price to \$7500, which included a rebate of \$170.41 for scrap salvage, and a reduction of \$2400, as Vulcan was a "public enterprise".⁴⁸ McWane's generosity made him the second largest financial contributor to Vulcan, but it could not have helped his own financial situation. The Birmingham Steel & Iron Company, like the Hood Machine and Foundry Company before it, lacked a distinctive product line, with a captive clientele, and this was McWane's biggest problem.⁴⁹ Birmingham was an increasingly competitive place to make iron in 1904, and was still a questionable place to try to make steel. Offering a low bid on an unprecedented task, and then further reducing the price was likely the last straw for McWane's business, for the Birmingham Steel and Iron Company failed financially in 1905.⁵⁰

The patterns for the Vulcan castings were so large that a crew of men was put to work excavating a large pit in the floor of the B.I. & S. Co. foundry--hence the term "pit casting" for this type of work. Ordinarily, casting of smaller shapes was performed in a two-piece casting flask, or cope-and-drag assembly, but no such hardware existed for such a large, custom job. Once the pit had been prepared, a negative foundry mold, with core, had to be made from the positive plaster pattern. The foundry molds were not made in one piece, but in multiple segments, or drawbacks. Some of the pieces of the Vulcan mold required as many as forty to fifty drawbacks each, and the head required roughly one hundred and fifty. Numerous drawbacks are typically needed for patterns that involve folds, curls, and complex surfaces with cutbacks. The plaster pattern was placed on a platform, and the drawbacks were built up around the pattern from the ground up. The drawbacks were made by pressing a thin layer of "loam", a cohesive, pasty, black foundry molding sand against the outside of the plaster pattern, and backing the loam up with a layer of refractory brick. The loam conformed exactly to the contours of the pattern. Each drawback was bolted together as a unit, and the precise relationship of one drawback to another was indicated with a system of exterior markings. Once the entire pattern had been molded with drawbacks, the drawbacks were carefully removed and baked in an oven, which hardened the loam, bonded it to the brick, and removed any lingering moisture.

Once the drawbacks were baked and hardened, they were reassembled so that the core could be made. A layer of foundry sand the desired thickness of the casting was applied to the inside surface of the drawback mold. A loam and brick layer was then built up on the exposed inside surface of the layer of sand. When the building of the core was complete, the drawbacks were removed again, the sand was removed from the loam layer of the core, and the core was baked. Once the core was baked, it was placed on the platform, and the drawbacks were assembled around the core, leaving a narrow space of the desired width between the two sides of the mold where the molten iron was poured in. This procedure was essentially similar to that used to make the plaster patterns.

The platform and molds were lowered into the casting pit, and foundry sand was rammed in around the mold drawbacks to contain the pressure of the molten iron inside the mold. Bracing was also provided to prevent the molds from moving inside the casting pit. Passages called gates and vents were made in the sand to insure the proper flow of the molten iron, and the safe release of hot vapors and gases. Pig iron was melted in a coke-fired cupola furnace, and transferred to large ladles for pouring into the molds. Vulcan was exclusively cast from Sloss No.2 Soft Pig Iron, manufactured by the Sloss Sheffield Steel and Iron Company, which operated its merchant pig iron furnaces in Birmingham.⁵¹ Once the iron was set, and still hot, the core was

pulled in order to prevent shrink breakage which can occur during cooling of the metal. When the casting was cool, the drawbacks were removed, the sand and loam were cleaned from the casting, gates and vents were removed, rough spots, mold lines and flashing were ground off, and a coat of dark grey paint was applied to prevent rust.⁵²

The preparation and handling of the patterns and molds, and the actual process of casting were supervised by Giuseppe Moretti and James MacWane. The plant superintendant was Charles L. Ledbetter, and foreman of the foundry was Barney Conlin. Conlin, "one of the great moulders of his time...called together a group of molders...as good as could be found in his country." The Vulcan casting crew consisted of Jack Soresby, Charles Zwald, Henry Stepp, Dave Williams, Charles Cason, Clarence Hancock, Charles Gustin, Ike Swanson, George Rush, Henry Veitch Sr., Nick D. Smith, and Fred Buetticker. Rush was selected especially for his ability as a core maker; Veitch's family foundry had previously made the heaviest casting in Birmingham; Smith was later International Secretary of the Iron Molder's and Foundry Worker's Union; Buetticker was in charge of the Vulcan casting, and was later Superintendant of the foundry and machine shop at Hardie-Tynes.⁵³

On March 10, the first part of Vulcan, the section from the waist to mid-thigh, was cast, consuming 13,000 pounds of iron. On

March 15, the second casting, the chest section was made, consuming 12,000 pounds of iron.⁵⁴ On March 19, the third section of Vulcan, the upper legs, was cast, requiring 10,000 pounds of iron. The fourth casting, the right foot and leg, was made on March 26, and weighed 12,000 pounds. The right leg casting was considered a particular success: "The casting of the right foot and leg of Vulcan ...was probably one of the most successful castings ever made in Birmingham...the iron shell was shown to be almost perfect, and there was not a flaw visible... It was an exceedingly hard casting to make, owing to the peculiar shape of the mold, the amount of metal required, and the size of it. Sculptor Moretti, who is also an expert on castings, said yesterday afternoon that he had never seen a piece of bronze casting which was better than that of the leg of Vulcan."⁵⁵ The casting process used for the iron Vulcan statue was identical to that used for large bronze art castings.

The left leg, weighing 12,000 pounds, was cast on March 30. The chest was cast next, on April 2. The chest was a smaller casting, weighing 8,000 pounds. The foundry turned out a casting approximately every five days, and once enough pieces were cast, the Vulcan statue was erected inside a scaffolding in the foundry yard. It was originally proposed that admission be charged to see the fully-assembled statue, but timing did not allow for this, and the plaster mold was erected instead (figure 6).⁵⁶ The iron statue was assembled in smaller sections in order to check the

appearance and alignment of the joints, rather than strictly as an attraction.⁵⁷ The next casting, performed on April 13, was the shoulders, particularly challenging due to its shape and size. This casting was roughly twenty feet in circumference, and weighed 14,000 pounds. The casting of the smaller sections of the arms, and the accessories occupied the last weeks of the project. The most challenging part of the project remained--the casting of Vulcan's head.

Preparations for the casting of the head had been going on since the arrival of the pattern from New Jersey. The first task was the reconstruction of the pattern of the head which fell from a crane. Several days before the head was due to be cast, a mishap occurred at the foundry: "The modeling of the head was carried out on a sort of mezzanine platform over the soot and smudge of the foundry below. On the day when the head was completed, the rather rheumatic overhead crane rolled over it and hoisted it up and trundled down the shop to a point where the mold was to be made. The lowering had commenced, when an unusually severe twinge ran through the joints of the crane, and the head fell to the floor and resolved into a rubbish of boards, excelsior, and plaster. The writer's limited knowledge of Italian prevents the quotation of Signor Moretti's remarks. At any rate, there was nothing to be done but to rebuild the pattern."⁵⁸ The most damage occurred to the forehead, which had to be rebuilt

from scratch. Numerous lines are visible in Vulcan's head, however they are possibly mold parting lines (figure 7).

The broken pieces of the pattern were fit together, and backed with a thick coat of plaster. The cracks in the outside were filled with plaster, and smoothed over. The construction of the complex drawback molds took almost a month, as the intricate lines of the face were painstakingly difficult to mold. "Bricked up with mud one at a time around the plaster cast were 150 drawback molds. One for an ear, one for an eye; every little part of the body had to have its own drawback."⁵⁹ Fred Beuttiker, foreman of the Vulcan crew, experienced particular difficulties with Vulcan's beard, as the plaster curls broke during the molding process. In order to finish the mold, Beuttiker actually sculpted some of the curls in Vulcan's beard himself, by manipulating the molding sand during the mold making process.⁶⁰ The drawbacks were baked to an extra hardness to insure that they would not break during casting, and two days were spent building up the guards around the mold in the pit. The largest pit yet was dug in the foundry floor to accommodate the mold. The pit measured twelve feet by twelve feet by seven feet deep. Of the core making for the head, it was said: "It represents the most difficult task that the foundrymen have yet attempted, and when it is baked and placed in the pit ready for casting, they consider that they have completed the hardest casting ever made in Birmingham."⁶¹ The

12,000 pound head of was successfully cast on April 16, and was cleaned and finished two days later.

Conditions in the foundry were harsh and hectic. Fred Beuttiker and Nick Smith recalled working sixty hours a week for thirty-five cents an hour. The foundrymen often worked around the clock to keep up with the work, and Fred Beuttiker actually stayed on the job for six weeks without going home during the most demanding part of the project.

The casting process became the talk of the city. Local school groups were brought in to see the work in progress, and the successes and holdups were documented in the newspapers on a daily basis. The finished Vulcan was partially assembled to check for proper fit, and the scaffolding was shrouded to conceal the figure. The public curiosity generated by this spectacle spawned the idea to set up the plaster model and to charge admission toward the Vulcan fund. The public balked, and Vulcan viewing was made free of charge.

Vulcan's feet and thighs left Birmingham, bound for St. Louis on April 18, 1904, the same day that Vulcan's head emerged from its molds. The entire process, from eight foot clay model to fifty-five foot "Iron Man", had taken approximately four months--this, a project which Boston sculptor Cyrus Dallin said would take at least two years. The casting of Vulcan was certainly

rushed, but not just to meet the opening day of the Exposition, April 30. Vulcan had to be in St. Louis by April 22, the day that the railroad tracks at the fairgrounds were to be torn up.

Vulcan is certainly a symbol of Birmingham's iron industry, but it is a literal, physical example of can-do attitude and technical knowledge present in the Birmingham Industrial District at the turn of the Century. On the other hand, an important factor in Vulcan's timely creation that should not be overlooked, according to Mr. James Ransom McWane, grandson of J.R. McWane, who cast Vulcan, is just plain hard work.⁶²

SAINT LOUIS EXPOSITION

The last pieces of Vulcan were due in St. Louis by April 22, and the Fair opened on April 30. Birmingham Steel & Iron shipped the first parts of Vulcan, the feet and thighs, from Birmingham on the 18th of April. Erection of the statue in the Palace of Mines and Metallurgy began as soon as the parts began to arrive, and by April 25, Vulcan was assembled to the waist. By the opening day of the Fair, Vulcan was still incomplete, as the foundry had, in haste, forgotten to cast bolt holes in one of the arm joints. Vulcan was not completed until mid-May, due to the difficulty of drilling new holes in cast iron in midair.⁶³

The Louisiana Purchase Exposition occupied approximately sixty million square feet of land, and incorporated so many exhibits from so many countries and organizations that they can not possibly be enumerated here. The largest structures were devoted to themes which summarize the character of the Exposition--Agriculture, Horticulture, Machinery, Transportation, Electricity and Machinery, Varied Industries, Manufactures, Education and Social Economy, Liberal Arts, and Mining and Metallurgy. The Palace of Mines and Metallurgy was constructed at a cost of \$500,000 and measured 525 x 750 feet. The Palace as constructed differed substantially from the Beaux-Arts neoclassicism of the original design, which was unintentionally included in Fair literature.⁶⁴ Whereas the original Van Brunt and Howe design is derivative of McKim, Mead and Whites' "White City" from the 1893 Chicago Columbian Exposition, the Palace, as constructed, although it draws on ancient motifs, can be considered "modern", even radical for its time. In terms of massing and ornamentation, the Palace strongly resembles the anti-Beaux-Arts style of the Vienna Secession, which was challenging European architectural conventions at the time (figure 8).

The roof of the Palace of Mines and metallurgy projected eighteen feet from the walls. Each of the four main entrances was flanked by two 140-foot obelisks. Between and behind the obelisks, on the roof of the building, was a thirty-foot diameter

globe, supported by twenty-eight foot human figures. The four main entrances to the Palace of Mines and Metallurgy were ornamented with sculpture which symbolized the metals gold, silver, iron, and copper. Sculpture on the other twenty entrances symbolized lesser metals or basic metallurgical processes. Two sides of the Palace of Mines and Metallurgy were constructed as a colonnade, which allowed a quarter-mile of uninterrupted exhibit space. Inside the main exhibit room, forty-six islands with separated by aisles created nine acres of exhibit space, more than had ever been created for an Exposition exhibit of mines and metallurgy.⁶⁵

The organizers of the Exposition desired a new direction for the mining and metallurgical exhibits. In 1901, fair authorities declared: "Processes of manufacture, wherein actual production is shown, will be encouraged, as being of more interest to the people than still exhibits."⁶⁶ Joseph A. Holmes, Chief of the Mines and Metallurgy Department at the Exposition, stated: "The great aim of the Exposition authorities is to show in the great places for exhibits at St. Louis not alone products and results, but the products and stages through which they pass in order that they may become a benefit to mankind."⁶⁷ Exhibits from forty-one U.S. states and twenty-nine nations were divided into five groups, which were further subdivided into fifty-three classes which displayed mining and metallurgical processes and equipment used from preliminary prospecting to finished products.

The response to this opportunity to showcase state-of-the-art mining and metallurgical process and technology was overwhelming, and thirteen acres of additional space was created to accommodate the largest and most elaborate of the displays. The outdoor mining display was called the "Mining Gulch", and contained "practical, working object lessons of the methods and machinery used in the sinking and operation of mines".⁶⁸ The Mining Gulch measured 1,200 feet long by 300 feet wide, and featured reconstructions of several types of ore mines, including Missouri lead and North Dakota gold plants, with operating hoists, crushers, and beneficiating equipment. A working oil well was featured, as well as gem mines, smelters, a cement plant, a pottery, a foundry, a waste rock tramway, and a mine railway. None of these mines were actually extracting the material being processed, except for the coal mine exhibit. A fully-functioning coal mine was constructed to tap into a horizontal coal seam beneath the Exposition grounds, and 2,000 feet of the seam was developed during the Exposition, the production of which was processed in an operating breaker and washer facility.

The displays inside the Palace of Mines and Metallurgy ranged from the operational, process-oriented to the static, finished-product type. Bethlehem Steel, and the Pittsburgh Chamber of Commerce were among the organizations that displayed various finished iron and steel products. Vulcan, and the Alabama exhibit, were given 2,000 square feet of space. It is not

possible to determine Vulcan's exact location in the Palace from photographs, however, in 1903, J.A. Holmes told the Birmingham Commercial Club that he would give Vulcan a space "quite near the main entrance..[Vulcan] will front on one of the main aisles, with an aisle on each side".⁶⁹ The most lengthy, nevertheless vague description of the Alabama exhibit states that: "At each corner on the front line of the space will stand a handsome pavillion constructed of ores and metals in a graceful style of architecture. The front line between these two pavillions extends about fifty feet, with the exhibits covering the space, except in an aisle fifteen feet wide, which extends from the main avenue of the building to the statue of Vulcan. The rear of Vulcan will be on a line with another main avenue which extends 750 feet through the building, and the exit on that side will be between the feet of the statue. The rest of the space will be filled by attractive exhibits covering all the mineral resources of the state so far as is known, and on one side of the aisle extending to the statue will be a booth and office from which literature regarding Alabama and the souvenirs of the Vulcan will be handed out."⁷⁰

The Alabama exhibit fell somewhat short of the program desired by the Exposition. Examples of minerals from twenty Alabama counties, including coal, iron ore, and limestone were shown, and the finished products of the Longview Lime Works, Tennessee Coal and Iron Company, the Republic Iron and Steel Company, and the Sloss Sheffield Steel and Iron Company were

arranged about the feet of Vulcan (figures 9-10). Sloss and TCI originally intended to have their own exhibits, but later opted to join the Birmingham district exhibit.⁷¹ The only feature of the exhibit that met the wishes of the Exposition was the rod mill display of Republic Iron and Steel, although Vulcan certainly stood out in the machinery-filled exhibition hall. On the opening day of the Exposition, the Birmingham Age-Herald ran a story, "Thousands Admire the Great Statue of Vulcan". The following was said of the Alabama exhibit: "It is decidedly different from any other mineral exhibit, and has attracted so much attention on that account. It is not as large and as complete as desired, but it compares well with other exhibits. The exhibit sent by Republic is very complete, showing all the raw materials and the process of evolution from this state until they leave the rod mills a complete rod"⁷² It is apparent that in this context, the author meant the word "complete" to mean thoroughly demonstrative of process, and that the Alabama exhibit did not measure up to the Exposition's requested programming in this respect.

At the Exposition, the Vulcan statue--a classically-derived, symbolic image--was in a sense a dying gasp of Nineteenth-Century sensibilities, surrounded by the symbols of the Twentieth--the machine. Nineteenth century art and literature, particularly in late-century, Victorian times, were dominated by academic values--allegory and symbolism pervaded art

which drew almost exclusively upon biblical and classical imagery. The influence of European movements such as cubism and futurism soon altered this aesthetic paradigm, and the concepts of abstraction inherent in the new styles allowed simple objects to stand for concepts and themes. Vulcan was created a few short years before this revolution began, and there was not yet an avant garde to criticize the statue as anachronistic, especially in interior cities such as Birmingham and St. Louis. Vulcan was not so much an artistic anachronism, however, as this type of imagery persisted in industrial art, but was an example of a type of symbolic representation that was soon to be replaced increasingly by images of machines themselves. In art and advertising, shapes that the modern working man could relate to, such as the blast furnace and the hot metal ladle, replaced rarefied, neoclassical, schoolbook images of Greek and Roman gods as symbols, in this case, of ironmaking. Symbolism and metaphor was incorporated in the architectural detailing of the Palace of Mines and Metallurgy, but the only other geological exhibit to use sculpture was the Louisiana exhibit, which featured a biblical image--a pillar of native salt in the shape of Lot's wife.

Vulcan was, nonetheless, a great attraction, and unique to the Exposition. The newspaper accounts of the day were full of predictable hyperbola--"Vulcan is Attracting more attention than any exhibit at the fair!"--etc. Vulcan, coated in gray paint,

stood on a low platform, with a mineral exhibit designed by Alabama State Geologist Eugene Allen Smith about his feet. Various legends, such as "Vulcan--God of Fire and Metals--Cast at Birmingham, Alabama, and "Iron is King--Its Home, Birmingham, Ala." were painted in gold lettering on the anvil pedestal, and on the sides of the display platform. A smooth path was left so that spectators could walk between his legs, and his upraised right arm reached up into the wooden ceiling trusses. A large bronze plaque on the anvil stand bore "Vulcan's Prophecy", penned by Birmingham Commercial Club Vulcan Committee member John H. Adams. Adams, born in Birmingham, England, came to Birmingham, Alabama in 1880. Adams is credited with the construction of the first basic open hearth steelmaking furnace in the South, and organized the Birmingham Rolling Mill Company, first manufacturer of rolled iron bars in Birmingham.⁷³ Adam's "Prophecy" captured the spirit of Vulcan's symbolism and Birmingham's intent for the exhibit:

Just as my stature towers above the sons of earth so shall the district, from whose breast the ore and coal were torn and fused to give me birth, exceed all others in "Times March" for o'er and o'er, nature hath flung her treasures with a generous hand, and Birmingham sits throned. Both hemispheres can draw on her. The mineral wealth of every land is there allied to rule the world in future years.

From September 1 to September 20, one hundred judges from around the world judged the Exposition exhibits. Many accounts of the awards connected with Vulcan are confused. According to James MacKnight, Both Moretti, and Vulcan were awarded "Exposition Gold Medals" in April of 1904, before Vulcan was completely assembled. According to MacKnight, "The jury in the Mineral Department awarded the Grand Prize of the Exposition to Vulcan. They awarded a silver medal to James R. McWane for casting Vulcan. They awarded a silver medal to me (MacKnight) for originating the idea. They awarded two silver medals to Moretti for sculpting Vulcan, and the heads of Christ and Chief Talladega."⁷⁴ Much is made of these awards in the subsequent Vulcan literature, however, it should be understood that the awarding of prizes at World's Fairs was more of a festive ritual and a congratulatory end-of-fair exercise than a distinction of long-term or far-reaching significance. James MacKnight's role as Alabama's Executive Exposition Commissioner, as well as other apparent, although undefined involvement in the administration of the Exposition should also be taken into account when considering Vulcan's awards.

Vulcan's ultimate significance at the Exposition was as an advertising tool for the raw materials and finished products of the State of Alabama. Estimated attendance figures for the Palace of Mines and Metallurgy range between eighteen and nineteen million people over seven months. Visitors to the Alabama exhibit

were welcome to choose from a group of six pamphlets which James MacKnight developed during late 1903-early 1904 that described Alabama's various resources and economic advantages. Experts on Alabama's natural resources were on hand to answer fairgoer's questions. Vulcan also received national newspaper coverage--an estimated \$150,000 worth. According to MacKnight, "The advertising of Birmingham through the exhibit has proved one of the biggest features, for space in papers will be given which could not be bought for love or money."⁷⁵

It is impossible to directly link the Alabama exhibit at St. Louis to the growth of Birmingham's iron-related industries, or to show any cause and effect relationship between the visibility of Vulcan and awareness of the mineral potential of the Birmingham Industrial District. Regardless, growth certainly did occur. In 1909, Alabama produced 1,763,716 tons of pig iron, worth \$22,222,00. Ten years later, pig iron production had risen to 2,044,937 tons, worth \$53,092,133. Figures for the mining and production of coal, iron ore, stone, clay, and coke all rose at comparable rates.⁷⁶

Vulcan proved so popular, that at the closing of the Exposition, several offers were made to purchase the statue. The city of St. Louis wanted to keep it, and San Francisco wanted to set it up in San Francisco Bay as a West Coast counterpart to the Statue of Liberty. An agreement was made to send Vulcan to the

1905 Louis and Clark Exposition in Portland, Oregon, and a forty-foot pedestal was constructed, but Birmingham ultimately reneged due to a lack of funds.⁷⁷ A proposal to erect the statue in Chesapeake Bay was made, but came to naught. Vulcan lingered at the Exposition grounds until February of 1905, when he was dismantled and returned to Birmingham.

RETURN TO BIRMINGHAM

In 1903, before the St. Louis Exposition began, Exposition Director J.V. Skiff said that he "regarded the proposed colossus of Vulcan as the very best metal exhibit that has been planned for the Expo." According to Skiff, "it would command and receive universal attention...it could then be returned to Birmingham and set up as a monument that would last for centuries...these are features which do not often apply to exhibits sent to World's fairs."⁷⁸

Despite Vulcan's popularity at the St. Louis Exposition, he was the object of controversy and neglect upon his return to Birmingham in February, 1905. No firm plans for his disposition had been made, and several locations were considered or suggested, including the circle at Five Points South, Red Mountain, and perhaps most appropriately, a downtown location between the railroad tracks on Twentieth Street, dedicated to Birmingham industrial magnate Henry DeBardeleben.⁷⁹ A location

in Capitol Park, now Linn Park, in the city center, was considered as early as late 1903, but was ultimately fought by local artists, who considered Vulcan to be ugly and misshapen, and groups which had already erected monuments in Capitol Park, such as the Daughters of the Confederacy. While deliberations proceeded, Vulcan lay in pieces in the weeds next to the Birmingham Mineral Railroad tracks at a location on the side of Red Mountain near Twentieth Street.

Finally, a location at the Alabama State Fairgrounds was negotiated, and Vulcan was erected for the State Fair in October, 1906. During this period, Vulcan suffered physical damage. His right arm was destroyed in rail shipment to Birmingham, and had to be recast from new molds by the H.T. Beggs & Sons foundry.⁸⁰ The workers erecting Vulcan dropped one of his arms, damaging the hand.⁸¹ Vulcan's right forearm was bolted on upside-down, so that he could not grasp his speartip, which remained at his feet, and was eventually lost, as was one of Vulcan's hammers (figure 11). Vulcan's anvil was placed behind his left leg rather than at his side, and as a result, he could not hold his hammer, which was laid on the working face of the anvil. An awkward wooden telegraph pole was placed under his left wrist to support his left arm, and guy wires were installed to help support his upraised right arm. At one point, in the 1920s, Vulcan's right thumb fell off, and he was disassembled for safety reasons, and then reassembled in the early 1930s.

During his three-decade tenure at the State Fairgrounds, Vulcan was incorporated in several advertising campaigns. The hole in his left hand, which previously accommodated the handle of his hammer, variously held an ice cream cone (figure 12), a pickle jar, and a bottle of Coca-Cola, advertising space for which was sold by Fair authorities.⁸² Some writers have described this phenomena as unflattering to Vulcan, and this attitude is warranted considering that Vulcan was once dressed in blue jeans, and his face and hair were painted in a garish, naturalistic scheme.⁸³ Vulcan's role at the Fairgrounds, however, can be considered a significant part of his career from a social perspective. Whereas Vulcan was a dignified emissary of Birmingham at the St. Louis Exposition, he was among familiar company in Birmingham, and presided over the festive atmosphere of the Fairgrounds. A part of the tradition of festivals, carnivals, and parades is often the mimicing, ridicule, or transmogrification of public symbols and figures. In terms of original intent, Vulcan may have suffered indignity at the Fairgrounds, but his as-conceived life was over after the Exposition. Vulcan's utilization as an elaborate billboard was certainly insensitive if he was perceived by the civic authorities of early Twentieth-Century Birmingham as a monument, a symbol, or a work of art, but it is apparent that he was not. Vulcan was not consciously denigrated at the Fairgrounds, instead his role there can be seen as that of a mascot, an informal rallying point or figure for the people of Birmingham, especially

during the years of the Depression, when popular stories about Vulcan were perpetuated. For instance, when his thumb fell off, it supposedly resulted in the injury of a passerby, and Vulcan's hands were host to the nests of honey bees.

More significantly, Vulcan became a popular meeting place (figure 13). A letter written by a Mr. Clark H. Hogan regarding Vulcan at the Fairgrounds states: " I was 12 when we moved to Birmingham in 1917, at which time the statue was at the Fair Grounds, and its location near the main gate on Third Avenue was the favorite meeting place. 'Meet me at the Iron Man' was heard as often as 'Going to the Fair' "⁸⁴ When Vulcan was disassembled in the 1920s, his parts became a popular playground for children. Vulcan's image became the subject of Birmingham Age-Herald cartoons (figure 14), which featured various tales of Vulcan's life in Birmingham, particularly his romantic involvements with Lady Electra, the gilt, Art Deco female personification of electrical power by sculptor Edward Field Samford which graces the roof of the 1925 Alabama Power Company building.⁸⁵

Vulcan was certainly not treated with the respect intended by his creators. Giuseppi Moretti, before his death in 1935, was quoted as saying "I almost wish I had never made him", in response to the movement to relocate Vulcan to Red Mountain, and the treatment of the statue at the Fair Grounds.⁸⁶ Vulcan

remained highly visible, however, and his stint at the fair brought him closer to his constituency, and his role as a fixture of popular culture bolstered his identification with the City of Birmingham.

VULCAN PARK

Serious agitation for the relocation of Vulcan to Red Mountain began in the mid-1930s. In 1933, an anonymous letter to a Birmingham newspaper from a member of the Birmingham Exchange Club suggested moving Vulcan to Red Mountain, to a location owned by the Tennessee Coal and Iron Company. The letter also suggested a landscaped park.⁸⁷ If the Exchange Club, and City Commissioner Lewey Robinson started the movement, however, it was the Birmingham Kiwanis which succeeded in the creation of Vulcan Park. Birmingham is called the "Cradle of Kiwanis" by the organization. During the 1919 Kiwanis International Convention in Birmingham, the Club was purchased from its founder, Allen S. Browne of Detroit. The Birmingham Kiwanis Club is thus credited with the "freeing of Kiwanis".⁸⁸

In 1935 the Kiwanis formed a Vulcan Committee to pursue the matter of relocating Vulcan to Red Mountain, which included J. Mercer Barnett, a former Kiwanis International President; Thomas Joy, an engineer and builder; Erskine Ramsay, a Birmingham industrialist and philanthropist; and W.D. Moore, T.L. Bissel,

W.A. Curry, and Alex Montgomery. Another Birmingham figure, and key player, was Thad Holt. Holt was appointed Director of the State Industrial Development Board early in the Depression, and served as Director of the Alabama Works Progress Administration during the time of Vulcan's move to Red Mountain. Holt served in various capacities for the WPA, and spent one year in Washington as Assistant Director to WPA Director Harry Hopkins. During the Depression, Holt oversaw the expenditure of \$43 million, and 50,000 workers. Holt was also apparently enthusiastic about moving Vulcan to Red Mountain, but needed the popular support of the City of Birmingham before he could proceed.⁸⁹

Tom Joy was given the responsibility for generating the necessary support for the project, and in 1935 the City Commission placed the entire supervision of planning the park and the move of Vulcan in Joy's hands.⁹⁰ Joy initiated a city-wide support campaign. Knight and Kiwanis met with the Birmingham Park Board, and argued that "The Statue of Liberty is worth more to New York City than any of its skyscrapers", and that Vulcan was likewise Birmingham's symbol.⁹¹ The arguments were apparently convincing, for shortly thereafter, Birmingham Park Superintendant Marshall filed a \$42,518.50 proposal with the WPA to move and reerect Vulcan in a new park atop Red Mountain. The proposal called for 662 man-months of employment for six months. The estimates for work were: \$23,000 for the tower, \$3,000 for

rest room facilities, reflecting pool, \$4,000; and \$12,019 for "other", including moving the Vulcan statue.⁹²

An important part of the negotiations for Vulcan Park was the acquisition of the land itself. Largely through the efforts of J. Mercer Barnett, J.L. Perry, President of the Tennessee Coal and Iron Company, which owned vast tracts of ore lands on Red Mountain, authorized the sale of 4.45 acres of T.C.I. lands to the City of Birmingham for five dollars, for the purposes of creating a public park, on December 4, 1935.⁹³ An additional quarter-acre of former Birmingham Mineral Railroad right-of-way was sold to the City in 1951 in order to expand the park. The Mineral Railroad was constructed by the Louisville and Nashville Railroad between the 1880s and 1920s to connect the red ore mining and concentrating facilities along Red Mountain with the blast furnaces and other railroads of the City. The right-of-way runs the length of Red Mountain, and ore trains used to pass under what is now Vulcan Park just to the north, and crossed 20th Street on a wooden trestle.⁹⁴

Red Mountain is so named for the color of the ground at the top of the mountain, before the cap of weathered iron ore was stripped off the top, and underground mining began. Red Mountain was the source of all iron ore mined in Birmingham, and is the geographic symbol of the Birmingham District's geologic wealth. The physical linking of the cast iron god of metals, made from

the ore beneath his feet with the mountain from which those ores outcropped, was an attractive and logical combination. Red Mountain was also appropriate as a location for Vulcan, for he could survey the metallurgical activities of the District that created him. When Vulcan was placed on Red Mountain, a plaque bearing the "Fulfilment of Prophecy", written by John H. Adams, author of the "Vulcan's Prophecy" that appeared on the plaque on Vulcan's anvil stand at St. Louis was placed in the park, opposite the "Prophecy" of 1904. Both plaques are presently located at the base of the tower. The "Fulfilment" sums up the spirit behind Vulcan's move to Red Mountain:

Anchored by links of steel, on Red Mountain's iron vein
Our Vulcan views a city spread over hill and plain,
built like this tower, by men whose work and skill
And Birmingham's best nerve that helped them to fulfil
The prophecy he made in nineteen hundred four;
Our population grown since then to even ten times more
Who plead for art and science new victories to reveal
And build a greater city with the onward march of steel.

Vulcan is made from Sloss pig iron smelted from Red Mountain iron ore, but the ore mines belonging to Sloss Sheffield Steel and Iron Company are far from being "beneath Vulcan's feet", as popular rhetoric often states. Sloss-Sheffield's Sloss and Ruffner mine complexes are several miles to the east and west

of Vulcan, respectively. Next to the Lone Pine mine, the closest mine to Vulcan is the Valley View mine, located approximately one half mile to the west, adjacent to "The Club" nightclub. The ore extracted from this mine was not consumed in Birmingham at all, instead, it was smelted by Central Coal and Iron at Holt, near Tuscaloosa, Alabama.

Much has been made of the fact that there is a mine underneath Vulcan Park, as it certainly serves to reinforce the Vulcan's association with iron. The mine at Vulcan park was called the Lone Pine mine, and shared its namesake with Lone Pine Gap, where Twentieth Street now cuts through Red Mountain. The Lone Pine Mine ceased operation prior to the first World War. From the arrangement of the mine entrance, it appears that a horizontal drift follows the strike of the ore bed for some distance underneath the park. There is obvious subsidence in direct line with the mine opening which affects the arcade which connects the Vulcan tower with the gift shop. A large "cave", likely a collapsed part of the mine, was discovered fifty yards west of the tower during the regrading for the 1970 park renovations, and several hundred cubic yards of concrete were required to fill it in. The iron ore deposits were lean on this part of Red Mountain, and the Lone Pine mine appears to be an early, somewhat disorganized attempt at underground ore mining, and appears to have been of a significantly smaller scale than later mining developments elsewhere.⁹⁵

In January of 1936, the TCI land acquisitions were finalized, and Thad Holt secured \$44,062 for the Vulcan park project, \$38,874 of which was an outright grant, with the balance of the money a loan.⁹⁶ The proposal of Birmingham architectural firm Warren, Knight and Davis (Knight was primarily responsible for the park design) was selected, and ground was broken on the Vulcan Park site during the third week of February. Former Commercial Club president and Vulcan developer Fred M. Jackson turned the first spade of earth. Leila B. McKnight, widow of James McKnight, said in a letter to the Kiwanis Club: "I am sure that all of those still living who cooperated with my husband rejoice as I do that through your foresight and efforts, Vulcan may yet become the magnet which will attract millions of visitors to Birmingham".⁹⁷ Crews worked on the dismantling of Vulcan at the State Fair Grounds during the Summer. Vulcan's arm fell and destroyed the workers' scaffolding at the Fairgrounds, prompting their replacement by members of the local Iron Worker's Union. Several sixty eight foot test borings were made at the pedestall site, and apparently the bedrock at the proposed spot for the pedestall was poor, for the location was moved eight feet south from the location originally intended.⁹⁸ The pedestall foundation was poured in late April of 1936, and construction of the pedestall continued into the Summer.

The Vulcan pedestall as originally constructed was a 123 1/2 foot octagonal tower with a slight taper from bottom to top. The

tower rose from a single story stone structure at the base, to a railed observation deck near the top, to the flat space for the Vulcan statue above. The tower averaged 26 feet in width. All exterior surfaces were laid up with irregularly-coursed, rectangular, quarry-faced, light brown ashlar sandstone blocks, which were obtained from the quarries in Lane Park. This stone was also used for many of the walls and paths at Vulcan Park." Sparing use was also made of a light cement trim, which appeared at the crown of the pedestal, and was used as a capstone on the base structure. Many of the WPA workers who were employed in the quarrying and dressing of the stone were local skilled Italian stonemasons, who are listed on a plaque given by the Italian-American Progressive Association in memory of Guiseppi Moretti.¹⁰⁰

The structure at the base was, in plan, a large octagon, concentric with the tower, with an entrance facing the cascade fountain. The entrance was guarded by an elaborate wrought iron gate, and the legend "Vulcan" was mounted over the doorway in bronze letters in an Art Deco typeface. The base was intended to be used as a museum and exhibit space, and contained niches for display cases on the outside walls. The space was lined with variegated Sylacauga marble, the thin slabs of which were sawn and installed so as to make the striations appear in mirror image. Fluted Doric pilasters separated the display niches. The

floor was made of black and white marble shapes laid in an elaborate geometric pattern.

The shaft of the tower was augmented with four shallow streamlined decorative buttresses, with light stone caps, which rose approximately fifteen feet from the flat roof of the base structure. Located at the center of the shaft is the original alternating spiral-and-landing staircase, lined with Sylacauga marble. The ornate marble landing, with elaborate metal railings was removed when the tower was renovated. The stairwell was illuminated by two sets of narrow vertical windows. Ninety stairs led to the observation proximately twenty five feet from the top of the shaft. The metal railings employed a repeated "v" motif, and the deck was supported by curved metal brackets. The door to the deck, like the tower entrance door, was of coffered metal construction. A fluted square keystone adorned the frame of the observation deck doorframe.

The structural engineering firm for the pedestal was W.H. Armstrong of Atlanta, Georgia. The interior structure of the pedestal (figure 15) was of cast-in-place, vertical reinforced concrete members at the eight points of the octagon, with horizontal connecting floor tiers at regular intervals.¹⁰¹

Stylistically, the Vulcan Park pedestal can be described as a rusticated, restrained streamlined Art Moderne structure.

Previous designs, several of which appeared in Birmingham newspapers in 1935, were wider at the base, with rising setbacks, much like the commercial architecture of the day. These designs appeared squat, and diminished the appearance of Vulcan as drawn. These designs also incorporated streamlined human forms at intervals around the base. These streamlined figures clashed with the classically-derived Vulcan. Apparently Warren, Knight and Davis were sensitive to these issues, as the tower as designed was appropriately slender, and the human figures were condensed into streamlined buttresses. These buttresses, and details such as the observation deck railings, were decidedly Art Moderne, yet they are unobtrusive. The use of the quarry-faced stone added an appropriately rugged texture to the pedestal. In terms of style and design, the Vulcan Park tower withstood the test of time aesthetically. The simple geometric design, with rough-faced stonework, and relative restraint in the use of Art Deco ornamentation was not classically derived, and therefore not the most appropriate choice for Vulcan as portrayed by Moretti, but the design complemented Vulcan, rather than overwhelming him.¹⁰²

While work on the park progressed, the pieces of Vulcan were brought up Red Mountain on the old Birmingham Mineral Railroad tracks, and laid at the foot of the pedestal, where they became a popular photographic prop and playground for children (figure 16). Vulcan received a new paint job while he was disassembled. A coat of aluminum paint was applied, and details

such as his eyes and eyebrows, sandal straps, and apron were painted a darker color. In November of 1936, a hoist was fashioned using a large oak tree, and the right leg of the Vulcan statue was hoisted to the top of the pedestal at 10:00 a.m. on November 12 (figure 17). Assembly of the Vulcan statue was completed in early May of 1937, and the scaffolding was removed. Completion of the grounds and structures at Vulcan Park dragged on through 1937 and 1938, and the job was completed in April of 1939. It is not clear why it took so long to complete the construction of the walls and parklands. Shortages of either labor or money are alluded to, and indeed, sixty of the 130 men working on the park were diverted to the PWA Birmingham industrial water supply project.¹⁰³

When Vulcan Park was completed in 1939, the dedication of the new park was celebrated with a festival of unusual magnitude and proportions. A nine-night festival was planned, to be held from May 8 to May 17. Erskine Ramsay was appointed president of the Vulcan dedication ceremony committee, and numerous other city officials were involved in the organization of the event. A three night theatrical extravaganza was planned, which would present a drama based on the history of Vulcan (who was played by Birmingham Mayor George Seibels), DeSoto's visit to Alabama, and the early history of Birmingham. The committee hired New York theaterical producer William F. Baker to direct the cast of over 1,200 players. Baker, after reviewing the committee's proposal,

said "There is a wonderful opportunity offered to portray the symbolic significance of Vulcan in the wealth of natural resources of the Birmingham District, particularly in the iron and steel industry, and in depicting the actual historic events of the valley, a rich field for dramatic presentation."¹⁰⁴ Outdoor stages and an amphitheater were constructed, and a massive advertising campaign was initiated. Event planners expected fifty thousand people from all fifty states; it is unlikely that these ambitious figures were attained at "The greatest civic and historic event in Birmingham since the semicentennial in 1921."¹⁰⁵

Vulcan was ensconced in his new surroundings for only seven years, when a major change was wrought. In 1946, Paul Moon, the Chairman of the Birmingham Junior Chamber of Commerce "Jaycees" Safety Committee, conceived an area traffic safety campaign which he called the "Light of Life", a beacon which would glow green when the streets of Birmingham were safe, and red for twenty four hours after a traffic fatality. The Birmingham Park & Recreation board reacted favorably to the idea of a temporary installation of the beacon in Vulcan's right hand, and the Alabama Neon Sign Company, supplied with funds raised by the Jaycees, installed the "torch" in Vulcan's right hand (figure 18) The torch consists of sixteen green and sixteen red neon tubes mounted axially on a truncated aluminum cone which rotates to facilitate the replacement of the bulbs. The bulbs were modified to burn yellow

during the Iran hostage crisis and Gulf War. A hole was cut into Vulcan's hand for access to the torch, electrical wires and transformers were installed inside Vulcan's right arm, and safety cables were strung along its top. The "Light of Life" was first lit on October 23, 1946, and ten days later, on November 1, the first traffic fatality was indicated by the red light.

The "Light of Life" campaign, and Vulcan's torch, soon became internationally recognized, as European countries inquired about the torch. The safety symbol became nationally popular, and other American communities installed their own "Light of Life" torches, although none on so impressive a mount as Vulcan. Vulcan's torch hovers 560 feet above Twentieth Street, the main thoroughfare of downtown Birmingham, and is visible from a great distance on a clear night. The popularity of the torch resulted in its permanent installation on Vulcan, despite intermittent electrical problems that impair its operation.¹⁰⁶

The original layout of Vulcan Park is difficult to describe, and to ascertain. The topography is particularly erratic; Birmingham Park Superintendant R.D. Marshall called the property, which has a total change in elevation of ninety seven feet, the "roughest four and a half acres I ever surveyed".¹⁰⁷ As a result, the original paths, where visible, are curved, and many levels are linked by flights of steps. The best

understanding of the original park layout can be had from visual sources, however, a brief description is appropriate.¹⁰⁸

Vulcan Park was originally accessible from Twentieth Street by streetcar and automobile. The streetcar entrance was at the northern tip of the property, where the streetcar line ran along the west side of the street. Passengers would alight at the top of the hill, and climb a set of steps flanked by sandstone piers and walls with capstones, and proceed along a wide, walled patio, which had a view of Birmingham to the north. This patio was on the right-of-way of the Mineral Railroad. Once the end of the patio was reached, parkgoers turned right, and proceeded up another set of steps to a "y" junction, where they could continue up to the left or right. The left hand steps led to the main observation area (figure 19), and the right hand steps past the mine entrance to the rest rooms. The stone walls at the mine are notable for subtle string courses of narrow stones set into the larger ones. At the top of each of these paths was a path that linked the two that went along the edge of the slope, and a path that led to the base of the Vulcan pedastal. A third path, with Red Mountain iron ore walls, led from the main observation area to a set of steps which led to another pedestrian entrance on Twentieth Street, and a walled, terraced picnic area. This path continued south, to the souvenir shop, and a series of looping, wooded trails on a steep slope. Approaching the park by automobile, the visitor would proceed past the streetcar stop to

an abrupt right-hand driveway, flanked by concrete-urn topped sandstone piers with trailing wing walls. The drive swung around to the northwest, and climbed a short but steep hill. At the top of the hill, automobiles passed through a gate with smaller, finial-topped piers, and entered a small parking lot, with the gift shop to the right, and the pedestal directly to the north. The approach to the pedestal was dramatic; the visitor walked up a set of tiered steps that flanked three illuminated, cascading pools to reach the entrance to the tower.

No plans of the original Vulcan Park grounds have come to light, and no landscape architect has yet been connected with the project. Considering that the project was built by the WPA, it is possible that the plans were generated by an uncredited master craftsman familiar with the issues at hand. On the other hand, a known local architectural firm designed the pedestal. The pedestal was, however, both an architectural and an engineering feature, designed to carry a heavy load and accommodate people. It does not appear that Vulcan Park, as opposed to the pedestal, was conceived or executed with the same degree of competence or vision. The construction of Vulcan Park dragged on for two years after the completion of the pedestal, and the project was stalled by labor troubles. Photographs of Vulcan Park in the early years of its existence do not reveal a particularly lush or imaginative planting scheme. The pathways connected the features in a logical manner, and conformed to the

irregular topography. Standard concrete-and-plank park benches appeared here and there, and deciduous trees dotted the lawns (figures 20 -21).

Planting schemes at Vulcan Park appear to have been inconsistent. Originally, much of the park, especially the periphery, was selectively cleared, with many original trees retained. These areas were planted in a naturalistic manner, so as to blend in with the surrounding woodlands, and augmented with plants such as ivy, which was used to complement the rusticated stone walls. These areas, where the natural groundcover was once controlled, have become overgrown. At times, Vulcan Park was intentionally planted using species indigenous to Alabama. Flowering trees and shrubs included azalea, dogwood, and laurel. Park horticulturalists succeeded in grafting pink and white flowering dogwoods, producing a tree that bloomed in both colors, which generated a sensation and many requests for information.

The naturalistic, Olmstedian approach to park landscaping was countered by planting schemes utilized in the open areas at the base of the tower, which was surrounded by lawns. This area was planted out with beds. The Summer flower beds contained mostly annuals, and tulips were particularly popular. Red and yellow were prominent colors, and often the annuals would be planted in decorative patterns on the hillside, such as one design that featured the Confederate and Union flags.¹⁰⁹

Vulcan Park, like Vulcan itself, was perceived early on as a promotional vehicle, and an entity suited to change, rather than an attraction imbued with any sanctity. In the early 1950s, Birmingham Park Commissioner Connor stated that Vulcan Park "could be the prettiest spot on earth". According to the quoted article, Connor believed that since the park belonged to the city, "The city can spend money for anything it desires to put there."¹¹⁰ Unfortunately, this attitude resulted in numerous proposals for Vulcan Park, only some of which became realities. The project that is associated with this quote is the first of many examples of how and why the symbolic message behind Vulcan park has been lost, and how the park became a sort of default location for various schemes, and the main object of local tourism ventures. In 1950, half an acre of land adjacent to the streetcar entrance, directly below the scenic overlook, was purchased from the Tennessee Coal and Iron Company as a location for a World War II memorial sponsored by the United Veterans Organization of Jefferson County. In order to better serve this park, the American Legion built a parking lot adjacent to the memorial, on Twentieth Street. This park, which contained a fountain, and marble benches and tablets, no longer stands.

In 1953, Vulcan, and Vulcan Park, featured in the first major regional tourism venture since the park dedication. The "Vulcan Trail" was a scenic driving tour developed by Birmingham and the Alabama Motorists' Association which featured Vulcan Park

as a stop. The automobile has figured largely in changes to Vulcan Park. In 1953, the original parking lot was expanded to accommodate visitors. This required filling in much of the area where the loop trails were, at the south end of the park. Vehicular access to Vulcan Park was a problem due to overcrowding on the narrow access road, and a reservoir lane was built to accommodate the cars. At one point, the original entrance to Vulcan Park was closed entirely in a land swap with the radio station adjacent to the park.¹¹¹

During the 1950s and 1960s, proposals to maintain Vulcan Park a major regional attraction ranged from the sublime to the ridiculous. A proposal was made to develop the nearby Valley View iron mine into "Vulcan's Iron Wonderland", a subterranean tour that featured a boat ride into the flooded mine workings. Whereas this scheme was at least relevant to Vulcan in terms of the relationship to iron mining, the proposal to display a World War II submarine in Vulcan Park was not. This proposal was thankfully bypassed, although Vulcan Park has been host to a moon rock, a Roman coin bearing Vulcan's likeness, and a dancing fountain with thousands of illuminated jets of water that danced to music. The statue of Brother Bryan, now a landmark at Five Points, in Birmingham's Southside neighborhood, was briefly installed at a location in Vulcan Park which was called Prayer Point. Services were given there for a time, and then the statue was returned to its present location.

By the late 1960s, Vulcan Park was deteriorating physically, and the condition of the park was thought to reflect poorly on Birmingham. In March of 1968, the Birmingham News, in an editorial titled "Taking a Look at Vulcan", used the term "urban blight" to describe the condition of the park.¹¹² As early as 1964, agitation for an elevator appeared, and by the late 1960s, issues of access, grafitti, obsolete restrooms, faded museum displays, and structural cracks were being raised. By 1969, the Birmingham Park Board said that if repairs were not made, Vulcan Park would have to be shut down. Water was leaking into the tower, the steps were rusting, and plaster was falling. The three reflecting pools were cracked, leaking, and receptacles for trash.¹¹³

Vulcan, and the physical integrity of Vulcan Park suffered relatively little compared to the effects of the late 1960s, when Vulcan Park was the object of a new wave of civic boosterism. On the eve of the City's 1971 centennial, Vulcan park was perceived and marketed as a destination for Birmingham tourism. Some of the schemes for Vulcan Park were grandiose, and included features such as a mountaintop hotel, and a personalized rapid transit system which would link the park to the Birmingham Zoo, Botanical Gardens, and other key points in the city. Fortunately, these concepts never came to fruition, but Vulcan Park was nonetheless extensively modified.

As early as 1966, Birmingham Park Superintendant Frank Wagner proposed that the City allocate \$30,000 of a \$300,000 bond issue to the construction of new concessions, a souvenir shop, and restrooms at Vulcan Park.¹¹⁴ In 1969 the City of Birmingham floated a \$1.9 million bond issue, \$1.1 million of which was allocated for the renovation of Vulcan Park. The City approved the designs of the Birmingham architectural firm of Elliot and Bradford in late 1969, and the City entered into a contract with Dunn Construction for the physical work on December 4, 1969. The job ran some 260 days over, due to strikes that affected various building trades. The park was reopened on October 25, 1971, and was officially opened to the public on November 12, 1971, having cost \$1,010,235.74 to renovate.¹¹⁵ Of the new Vulcan Park, Birmingham Mayor George Seibels said "There is nothing in Birmingham I feel more keenly about. In my thirty four years here, this is the most aggressive, imaginative attempt of the Park and Recreation Board to give us a first-class tourist attraction."¹¹⁶

Recent awareness of the history and value of the public works executed by the Works Progress Administration makes Vulcan Park as originally constructed an important part of Vulcan's historical context. Unfortunately, the 1970s "renovation" of Vulcan Park by Elliot and Bradford seriously altered, destroyed or hid most all of the original WPA park features, and quite literally altered the "lay of the land". Except for the tower,

all original structures were destroyed, including the giftshop, restrooms, and cascade fountain. The museum at the base of the tower was removed, and replaced with a new structure. The original tower cannot even be seen, as it was sheathed in white Georgia marble. The marble sheathing was affixed to a metal framework which was attached to the tower with bolts that penetrated the original sandstone blocks and anchored into the concrete frame. Dark, flaring metal roofs cover the structure at the base, and at the enclosed observation area at the top of the tower. The roofs, marble sheathing, and the addition of an external elevator contribute to an inappropriately contemporary environment to the Vulcan statue, which is not visible from the observation deck--the only place from which the statue could be viewed as originally intended, from close up, and from below. The increased width and presence of the pedestal is out of proportion to the statue, which is now visually overwhelmed.

A new gift shop was constructed, with a pavillion connecting it to the pedestal. The new gift shop, new fountain, arcade columns, and other details all share octagons as a motif, the most intrusive octagonal feature being the bunker-like structure which defines the access path. Construction materials include a tan, exposed aggregate wall and pavement material, and white Georgia marble. The wrought iron gates at the arcade entrance to the tower, which were dedicated to Kiwanian J. Mercer Barnett, were discarded (figure 22). The gates were later

retrieved from the site, and are mounted on the wall of the conference room in the Birmingham Kiwanis office.

Unlike the J. Mercer Barnett gates, the present disposition of the George Hutchinson Clark collection of Alabama minerals, which was installed in the museum at the base of the Vulcan Park tower in 1941, is not known. The mineral collection was given to Birmingham as a gift by Clark's family. The product of forty five years of collecting, the Clark collection included samples of every known mineral in the state, weighed literally tons, and was conservatively appraised at \$50,000 value in 1941. The collection was appropriate for Vulcan Park, as it was an excellent way of showcasing the economic geology of Alabama. Tom Joy of the Birmingham Kiwanis appropriated the collection for the space in the tower, which had been designed as an exhibit space, but had been empty since construction was completed. Display cases were built for the marble-lined museum space. Joy believed that the Vulcan Park Alabama mineral exhibit "should be the first step toward a permanent museum for Birmingham". Dr. Russel S. Poor, of Birmingham Southern College prepared, labeled, and installed the exhibit. The Clark collection was said to be "an exceptionally complete collection of Alabama's minerals". Included in the collection were ores and other raw materials used in the production of iron, asphalts, barytes, copper, gold, graphite, pyrite, lead, zinc, tin, manganese, ocher, limestone, marble,

slate, bauxite, cement, and clays, all of which have been found, mined, quarried or manufactured in Alabama at one time.¹¹⁷

The location of this collection is presently under investigation. The collection was said to be stored by the Birmingham Park and Recreation Board, however, inspection of that collection revealed that it was not the Clark collection, but a display of Birmingham-area industrial rocks which had been placed in the "new" Vulcan Park tower museum in the early 1970s by the American Institute of Mining and Metallurgical Engineers. Only one sample, a piece of Red Mountain iron ore, had a label on it, the condition and contents of which indicate that it may have come from the Clark collection. It is not clear when the Clark collection was removed from Vulcan Park, or where it has gone.

The removal of the cascade fountain, and the enlargement of the gift shop and parking area at Vulcan Park required extensive regrading of the area, further altering its original character, and necessitating the removal of WPA stonework.¹¹⁸ The only remaining WPA features are some damaged and deteriorating walls and walkways. At the north side of the park, where the old Vulcan Park streetcar stop was located, the original flat stone pathway with steps, and walls with piers and capstones still extends from 20th Street, south past the mine entrance (now bricked up) to the rear of the new giftshop. The mine entrance, once an integral part of the park's historical theme, was laid up with

cinderblocks as a safety measure in 1964, when part of the Lone Pine mine collapsed and caused a cave-in fifty feet west of the pedestal.¹¹⁹ The mine entrance follows the strike of the stratigraphy and the ground is subsiding under the arcade pillars directly in line with the drift opening. Changes in transportation preference and technology have made the automobile the sole method of visiting Vulcan Park, and this formerly important gateway to the park is now bypassed by park visitors and maintenance staff alike. The path which branched off to the left from the first junction has been demolished, however, a stone bench survives at this location. On the side of the embankment to the west of 20th Street, the walled steps leading from the street up to the park are blocked, and are heavily overgrown, as is the original walled picnic area. The elaborate pillared entrance to this path was demolished, and the present location of the path entrance is obscured. Above this area is the current picnic area, and the original outside wall constructed of large pieces of Red Mountain iron ore is still intact. The capstones, as well as the other retaining walls in the new picnic area date from the later renovation. An original culvert and retaining wall follow the south side of the steep access road, and original stone-lined drainage culverts, one with a head wall, cross the road at its foot. Only the southernmost of the two stone piers which flanked the Twentieth Street entrance road survive. In one of several attempts to improve traffic flow at the park, the intersection of the two streets was recontoured from a

dangerous, perpendicular configuration to a sweeping one, necessitating the demolition of the flanking pier and wall. The surviving south pier and gate wall is now the most obvious and visible original WPA element at the park, as the other walls and paths are overgrown or hard to access. A particularly significant surviving feature is a three-piece cast iron sign on the west side of Twentieth Street that indicates the top and bottom of the Red Mountain iron ore seam. This sign, now overgrown and damaged by sliding rock, was given to the city by Birmingham industrial magnate and philanthropist Erskine Ramsay.

ARTISTIC CONTEXT

Vulcan is an example of what is termed a colossus, "a statue of gigantic size and proportions."¹²⁰ The tradition of the colossus dates to the ancient Egyptian world, where colossal stone figures were erected to honor the pharaohs. The term was first used in the writings of the Greek historian Herodotus, who described the Egyptian colossi erected for Amenhotep III and Ramses II. The most notable ancient colossus was the 105 foot Colossus of Rhodes erected in 290 B.C. by that city to honor Helios the sun god. Created by the sculptor Chares, the statue, considered one of the "seven wonders of the world", was destroyed by an earthquake in 224 B.C. Roman emperors followed the example of the Egyptians, and also created colossal statues to celebrate their own image. Nero had a 106 foot statue of his likeness

erected in Rome, and a thirty foot seated image of the Emperor Constantine was made, of which only the eight foot tall marble head survives.

Colossi reappeared with the neoclassical movement in Nineteenth Century art and architecture, which drew on classical antiquity, particularly from the Roman world. An early example of this is Antonio Canova's eleven foot marble Napoleon as Mars, sculpted 1802-1811. L.M. Schwanthaler created a sixty foot bronze embodiment of Bavaria in Munich, 1837-1850, and Jean M. Bonnassieux constructed a fifty two foot Notre Dame de France in bronze for Le Puy en Vely, France, in 1860. Ernst von Bandel erected an eighty five foot tall statue of Arminius made of copper sheets over an iron frame in 1875. The culmination of the Eighteenth Century colossi, and by far the largest, was Augustus Bartholdi's Liberty Enlightening the World.¹²¹

Liberty Enlightening the World, or the Statue of Liberty as it is popularly called, was conceived as a pledge of Franco-American friendship by French intellectuals in 1865, and was given to America as a gift to celebrate the 1876 Centennial. Liberty, at 151 feet, is approximately three times the height of Vulcan. Liberty is not cast, but is constructed of thin copper sheets attached to a framework of iron beams, the engineering of which was assisted by the French structural engineer Gustave Eiffel.

Vulcan and Liberty were, however, created for very different reasons--Vulcan was a hastily conceived and executed piece of economic boosterism, and Liberty was an intellectually-conceived, international gift. The circumstances of their history and technology differ greatly, yet the two statues do share formal aspects of heroic sculpture that place them in the same league. Both works are heroic by virtue of their colossal scale. Liberty is closer to the heroic ideal, with flowing, expressive drapery and a far more idealized face. Most significantly, the two works share the iconographic feature of the strong, vertically confined pose and upraised right arm. Both works employ hand-held objects in their iconographic schemes; liberty's are more allegorical than Vulcan's. Vulcan and Liberty are quite similar in terms of formal elements; the sex of the figure has been changed, and book and torch have been exchanged for speartip and hammer.

Vulcan's claim as the largest cast iron statue in the world is particularly significant for Birmingham, as it is a city built upon the iron industry. The creation of a work that could challenge the stature of Birmingham's Iron Man was and remains unlikely for reasons other than logistic and financial. Cast Iron has traditionally been a less popular medium for elaborate sculpture in general, and monumental sculpture in particular, as compared to the overwhelmingly popular choice of bronze. Cast iron, although high in silica, is a ferric compound, and is prone

to oxidization, like bronze. Both metals develop a patina, an oxide coating which is protective, only more so in the case of bronze. Cast iron has a relatively low tensile strength, making it more suitable in situations where it supports load by compression, whereas bronze can support its own weight over a longer distance using a thinner section. Cast iron cannot be worked as a solid, only machined and cut, and is not easily welded, as is bronze. Cast iron is a popular material for casting small, ornamental statues or decorative iron work, due to its low cost and ease of casting. Non-load bearing applications such as cast iron store fronts are another common use of the material.

Vulcan was made from iron not just because there was a lot of it about in Birmingham, but because it was what Birmingham was all about--a city and a district built upon the iron industry. Under other circumstances, bronze, or a copper skin over an iron framework probably would have been the medium of choice.¹²² Comparison with the materials used for the eight largest colossi in the world certainly supports the choice of bronze, or iron used as a structural support for a thin metal skin.¹²³

A notable American iron sculpture, and colossal work by Frederic Auguste Bartholdi, is the Bartholdi Fountain, which, like Vulcan, was created for a great fair, in this case, the 1876 Philadelphia Centennial Exhibition. Originally titled Fountain of Light and Water, and intended to symbolize those elements, the

composition of the forty ton, thirty foot fountain includes eleven foot caryatids which, surrounded by sea creatures, hold aloft a large basin originally ringed with gas lamps, now replaced with electric lamps. The iron castings were painted to resemble bronze. Bartholdi believed his fountain to be symbolic of the modern city, and anticipated that many American cities would want purchase one. The only other example, however, was placed in Rheims, France, and no longer survives. After the Philadelphia Exposition, the Capitol Architect purchased the fountain at the urging of landscape architect Fredrick Law Olmsted, and it was placed in the Botanic Gardens in the Capitol, and later relocated to what is now known as Bartholdi Park.¹²⁴

Another American sculpture which combines cast iron with the colossal mode is the Herman monument in New Ulm, Minnesota. Named for a First Century A.D. German tribal warroir, the Herman monument was constructed in 1890 as a symbol of ethnic unity by the Sons of Herman Lodges, a national German-American club. Located in Herman Heights Park, the statue overlooks the Minnesota River Valley, and dominates the city of New Ulm. The monument rests on an eighteen foot octagonal stone base, forty two feet across, which has a public space within. Resting on top of the base, arranged in a circle, are ten twenty five foot hollow cast iron columns. Rising from the center of the room in the stone base, through its domed roof, and through the center of the circle of columns is a seventy foot hollow cast iron column

with an external ornamental iron spiral staircase, which leads to an observation deck at the top of the column. Atop the column is the thirty two foot statue of Herman itself. The statue is constructed of sheet copper riveted to an iron framework, and depicts a warrior with flowing capes. Herman's right arm is extended upward, and holds aloft a sword.¹²⁵

The entire monument, and the Herman statue, were modeled by Alfonz Pelzer, of Salem, Ohio. Pelzer and his brother Hubert ran a sculpture business in New Salem, and Alfonz Pelzer is credited with a number of public statues of Abraham Lincoln. The Pelzer business was purchased by the William H. Mullins Company, who continued to create public sculpture. The Mullins Company also manufactured ornamental statuary, with a line of corrosion-resistant zinc statues. In response to an unidentified demand, William H. Mullins offered, in their 1894 catalog, a nine foot, zinc sheet Vulcan, for the price of \$50.00.¹²⁶

The city of Birmingham itself is worth considering as a context for colossal sculpture, as two other examples of the genre stand out on the city's horizon, both on downtown office buildings. Edward Field Samford's 1925 Lady Electra, atop the Alabama Power Building has already been mentioned for the romantic "relationship" she was said to have with Vulcan. Samford's Electra, like Vulcan, symbolizes a local industry, in this case, a state electrical utility company. Electra's

iconographic scheme includes her shimmering gold skin, and the clusters of lightning bolts, symbolizing electrical energy, which she holds in her hands, and wears in a wreath on her head.

A slightly larger Birmingham colossus is the thirty one foot, 20,000 pound bronze replica of the Statue of Liberty, which was installed on top of the Liberty National Life Insurance building in 1958. Birmingham's Liberty, according to Liberty National, who commissioned the statue, is the largest example of replica statuary in the U.S. In the case of Liberty, the final product was much smaller than the model, the reverse case from the Vulcan project. Regardless, it took the artists four years to complete the molds and cast the statue. For the Liberty, like Vulcan, the creative roadblock was finding a foundry that would accept such a large task. A foundry in France accepted the job, and the molds were shipped from America to the foundry, and the finished bronze sections were shipped back to Birmingham. Birmingham's Liberty was placed on the roof of the Liberty National building on September 13, 1958, having cost \$100,000, roughly five times the cost of Vulcan in 1904.¹²⁷

In addition to the context of heroic or colossal sculpture, Vulcan also fits into another, more unusual context, that of sculpture created to commemorate a specific branch of industry, in this case, metallurgy. Examples are few, as this genre more often takes the form of murals, mosaics, frescoes, and paintings.

Sculptural examples do appear on Art Deco or Moderne skyscrapers of the 1920s and 1930s, particularly buildings with a corporate industrial, transportation, or public utility function. These figures are not always classically derived, and toward the Depression they take on a more geometric, stylized appearance. A local example of this is located far below Birmingham's Lady Electra, where larger-than-life sized sculptural personifications of Power, Light, and Heat stand over the entrance to the Alabama Power Building. Usually this type of sculpture symbolizes a force or process, rather than a city, as does Vulcan. Vulcan is heroic in the classical style, however, and is by far the largest known example of this type of symbolic industrial sculpture.

The industrially-related American sculpture that shares the most similarities to Vulcan is the Henry Clay statue in Pottsville, Pennsylvania. The Henry Clay statue was created after the death of Clay in 1851. Henry Clay was an American financier and diplomat who in 1824 conceived and supported a successful protective tariff on foreign goods such as lead, hemp, glass, wool, cotton, and iron. Clay's tariff helped to spur the growth of the American iron industry, and by extension, the coal mining industry. The Schuylkill River valley in Pennsylvania particularly benefitted, and the iron industry there burgeoned, using locally mined anthracite coal. A movement to honor Clay grew, and at least one iron blast furnace, near Morgantown, West Virginia, was named for him.

The community of Pottsville, in the Schuylkill valley, decided to erect a statue to honor Clay. The sculptor, Herman Wesche, from Munich, Bavaria, created a fifteen foot image of Clay, based on a French portrait of the man. A Robert Wood foundry cast the statue of Clay, using only Schuylkill valley-smelted pig iron. Clay is shown standing, with his right hand extended from the waist, his palm flat, facing up. A sixty seven foot sectional cast iron column for the statue was cast at a Robert Chilson foundry, also using local iron. A fifteen foot square sandstone pedestal was constructed on a cliff at the edge of a hill with a commanding view of Pottsville. The column and statue, measuring eighty two feet when joined, were placed on the pedestal, and a small park was built at its base.¹²⁸ The Henry Clay statue and Vulcan share the distinction of commemorating or symbolizing figures or places important to the iron industry; they are both cast from the iron of their respective industrial locations; they are both examples of colossal statuary; and they were both placed on pedestals in elevated parks overlooking the cities that created them.

In the context of Moretti's work, industrially-related sculpture played a minor role, with Vulcan the exception in terms of size and public exposure. Moretti was first and foremost a creator of monuments. Moretti's industrial works and commissions include a sketch for a symbolic work for Westinghouse Air Brake, a tiny, personal model, Spirit of Aviation, a similar Genius of

Electricity, and a series of safety trophies for Carnegie Steel, National Tube, and the Youngstown Sheet and Tube company. The steel company trophies are unusual, as they combine fluid, heroic cast worker figures with precisely machined technological features such as molten metal ladles. Vulcan was not the only image that Moretti created to symbolize industrial Birmingham. The January 6, 1912 issue of The Survey, a national "Journal of Constructive Philanthropy", was titled simply: "Birmingham", and devoted much space to discussions of the city's growth, industry, and social condition. On the cover, clearly marked G. Moretti, is a medallion in the shape of a spoked gear, with a male youth seated next to an anvil, clad in a loincloth, holding a hammer. There is no caption in the publication to indicate whether Moretti intended this as to be a personification of Birmingham, however, the relationship is implied. This image also appeared in a similar, larger symbolic industrial relief sculpture executed for the city of Pittsburgh.

Moretti's Vulcan can also be examined in the context of Expositions and World's fairs. Previous to the St. Louis Fair, Moretti had been involved in the sculptural program of the 1897 Tennessee Centennial. It is not known what role Moretti played, but his participation was praised by Fair authorities. This experience placed Moretti in an environment where a great quantity of classical and heroic sculpture was being created in a short period of time, which certainly prepared Moretti for the

Vulcan project. One feature of the Tennessee Centennial was a reconstruction of the Acropolis, complete with pediment sculpture. This project was not given to Moretti, but to George J. Zolnay. Inside the east pediment, which historically portrayed the Birth of Athena, Zolnay sculpted a figure of Vulcan, who according to myth, brought Athena forth by striking Zeus on the head with an axe.¹²⁹

The Exposition which had the greatest impact on American architecture and sculpture was the Chicago World's Columbian Exposition in 1893, held to commemorate the 400th anniversary of the European discovery of America. The impact of McKim, Mead, and White's neoclassical "White City" was far-reaching, and essentially put an end to Victorian revival styles and the Richardsonian Romanesque in public architecture. The 1893 Chicago Exposition fomented a renaissance in American sculpture, and launched or bolstered the careers of many great American sculptors, including Daniel Chester French, Augustus Saint Gaudens, Gutzon Borglum, and Cyrus Dallin, all of whom worked in the colossal mode. Participation in a Fair or Exposition, like creating a colossal sculpture, was a valuable career move for a sculptor like Moretti.

The sculpture program at the 1893 World's Columbian Exposition was far too extensive to analyze here, but two works are relevant to Vulcan's context. The first is Daniel Chester

French's sixty five foot, gold-leafed Statue of the Republic, a heroic female colossus that stood on a tall pedestal at the end of a great lagoon, surrounded by the "White City". Although this statue was destroyed at the end of the fair, it briefly held Vulcan's distinction as the second tallest statue in America. An even more unusual Chicago World's Fair precedent for Birmingham's Vulcan is the fifteen foot bronze and copper statue of Tubal-Cain, the biblical blacksmith and equivalent to the mythical Roman Vulcan. Tubal-Cain, like Vulcan at St. Louis, was the metallurgical figure that presided over the Chicago Fair's Mines and Mining Building.¹³⁰

ARTISTIC AND STRUCTURAL EVALUATION

Birmingham's Vulcan is reputedly the largest cast iron sculpture in the world. Vulcan stands fifty-five feet tall from toe to upraised speartip, and weighs sixty tons, or 120,000 pounds. Some accounts claim that Vulcan is shown at the moment of the discovery of iron, or ironmaking, however this is not supported by mythological literature (or the fact that he holds an iron hammer on an iron anvil). Giuseppi Moretti simply depicted Vulcan at work, in the act of creating an object. Vulcan is shown standing by his anvil, hammer in hand, holding aloft a forged speartip to check its straightness, or true. Vulcan stands, his legs slightly apart, with his feet turned slightly outward, a natural, supportive position for a figure engaged in

heavy work. Vulcan's feet are shod with heavy sandals, and his muscled calves are clad in thick, criscrossing sandal straps that end at the kneecaps, with bows at the ties. Beneath his heavy leather blacksmith's apron, equipped with straps and buckles, his torso twists to the left, so that his shoulders are at a slight angle to his feet. The top of his apron is open at the upper left, exposing his upper chest, and his buttocks are likewise exposed. Vulcan's head is raised, and he gazes along his right arm to his hand, in which he delicately holds a freshly-forged triangular spearhead with a short shaft. Directly behind Vulcan's left leg is a square-hewn tree trunk upon which rests his anvil. Vulcan holds his left arm bent, out from his side, and in his hand he grips the handle of his hammer, the head of which rests across the top of the anvil. Vulcan's visage is alert, aggressive and proud. Vulcan's hair is wavy, and cut short over the ears, and his beard and mustache are full and curly. Vulcan's eyes are wide as if intent on his work, and his thick eyebrows are slightly raised, adding to the intensity of his expression. Vulcan appears well-muscled over his whole body, and there is no evidence of any obvious intent to depict Vulcan as disfigured or lame.

Moretti's Vulcan was created in the tradition of classical Greek and Roman heroic sculpture in terms of composition, modelling, and expression.¹³¹ Vulcan resembles heroic or narrative sculpture of the Hellenic phase of Greek sculpture,

which was characterized by exaggerated features and highly developed musculature, and an animated and sometimes even grotesque appearance, the most familiar and powerful example being the marble Laocoon, which depicts a father and his sons fighting a giant snake. Vulcan shares some similarities with this type of work, including mythical content.

Vulcan is much closer in appearance, however, to sculptural images of Roman Emperors or centurions, such as the Hellenic Augustus of Prima Porta, ca. 20 B.C., or the later Roman Augustus Polyclitya. These works are typical of the genre of Hellenic and Roman heroic sculpture, which were intended to imbue their subjects with a sense of authority and power. Usually the pose of the subject is contraposto, with the weight of the body borne by one straight leg, and the other leg slightly bent. A corresponding tilting of the shoulders is usually present. In the case of Imperial works, the figure is usually dressed in impressive battle gear, or a flowing toga, and bears symbols of authority such as a staff or scroll in one hand, and a wreath of olive leaves for a crown. The most important part of the iconography of authority is the raised arm, which is usually shown in an oratory or pontifical configuration. Often there are few or no other images of the subject other than the statue itself, and comparison of various heroic Greek and Roman statues indicates a degree of idealization of both physique and

physiognomy in the genre. Facial expression is minimal, and typically displays an impassive strength.

Vulcan certainly fits into the genre of Hellenistic and Roman heroic sculpture, with some minor differences. Vulcan is not shown in a contraposto pose; instead, he is more solid and flat-footed, and is shown in a pose more anatomically appropriate for one engaged in heavy labor, rather than the more relaxed contraposto of the Imperial sculpture, a choice more in keeping with Vulcan's role as worker-god symbol of an industrial city. Vulcan's musculature is impressive, and his upraised right arm echoes the authoritarian gestures of the statues of the Roman emperors, but again, the theme was adapted to a pose typical of the process of the blacksmith--examining the straightness of the work in the light. Moretti simply exchanged the toga for a leather apron, and the staff for a hammer, in order to equip his figure with the mythical appurtenances appropriate to the new iconography. The body and the face are not of the ideal heroic appearance or proportions. Vulcan's visage is ruggedly handsome, with an expression of confidence and concentration. Vulcan's body is thickset, with short legs and weight concentrated above the hips.

Moretti certainly drew on the Greek and Roman heroic sculptural ideal as a general model for the Vulcan statue, but he also had to draw on more specific sources--literary descriptions,

and previous artistic examples of Vulcan, and Greek predecessor, Hephaestus. The contents of the Vulcan myth have been outlined above, although Vulcan's deformity, or lameness is an important part of the discussion of Moretti's choices for depicting Vulcan. The term lameness implies an infirmity of the legs; it was also said of Vulcan that his arms and chest became powerful through his metallurgical labors.

Surviving classical depictions of Vulcan and the Vulcan myth are unfortunately scarce. The east pediment of the Parthenon on the Acropolis in Athens, Greece, contained an unusual mythological scene carved by Phidias in marble, the birth of Athena, who sprang from Zeus's head after being struck by Vulcan's axe. Most of this scene was destroyed long ago, and reconstructions of the sculptures are based on verbal accounts and a depiction of the event found on a Roman well head in Madrid. This image of Vulcan is unlike Moretti's; the god is a finely muscled, slender figure, bearing an axe, in a contraposto pose. Several other images of Vulcan appear on vase paintings, and share a similar lack of characteristic features.

It is reasonable to assume that as Moretti was classically trained in Italian art centers such as Carrara, and travelled to several European countries, he was in contact with much classical art, and was well-versed in the written documentation of the works of antiquity. Art history had not yet developed as a

discipline. It is not possible to identify the literature that Moretti consulted, or to review it, as it would be in Italian. Likewise, one cannot say with any certainty what, if any books written in English were consulted by Moretti, as his poor English was noted as a handicap when he first came to America. Several turn-of-the-century artists' sourcebooks on Greek and Roman sculpture do, however, mention Vulcan.

The first source, although fairly basic, lays out the characteristic features and appearance of Hephaestus, the Greek precursor to the Roman Vulcan. The source, the 1910 Encyclopedia Brittanica, states that from archaic Greek times, Hephaestus was traditionally depicted with a long curly beard, clothed in a short sleeveless tunic, and a round, close-fitting cap. He is shown with the face of a middle-aged man, with unkempt hair. He is usually used to symbolize a greek craftsman, and is often depicted with a hammer, and sometimes pincers. More significantly, "In art, no attempt was made, as a rule, to indicate the lameness of Hephaestus; but one sculptor, Alcamenes, is said to have suggested the deformity without spoiling the statue."¹¹⁸ Another description of the Alcamenes Vulcan describes it thus: "Standing on both feet, and with the help of the drapery, his lameness was slightly indicated, yet not so as to give the impression of deformity."¹¹⁹ And finally, from an ancient description: "We admire the Hephaestus made by Alcamenes at Athens, in whom, although he is standing upright, and clothed,

lameness is slightly indicated in a manner not unpleasing to the eye."¹²⁰ Considering the ambiguous appearance of Vulcan, it would appear that the Alcamanes Vulcan, or at least a work or works influenced by or similar to it, may have served as a model for Moretti. Indeed, a bronze Vulcan fitting the Alcamanes description appears in the collection at the British Museum in London. The figure is stocky, with unkempt hair and a thick curly beard. The Vulcan statue wears a rough tunic, with one shoulder exposed, and the legs appear too short for the large, powerful upper body.¹²¹

The Birmingham Vulcan's upper body, and his head in particular, appear disproportionately large from many vantage points, and this phenomenon is a possible result of technical and temporal constraints in the modeling and casting process, and/or overcompensation for anticipated perspectival distortion by the sculptor. Although the St. Louis Exposition was a temporary event, the Vulcan commission was important to Giuseppe Moretti, as it was a highly visible showcase for his work, and an opportunity to create a colossus. Considering Moretti's classical training, it is likely that he employed perspective techniques which have been employed in the creation of public statuary since classical times. Classical sculptors developed a sophisticated, subtle method of enlarging the upper portion of their sculptural figures in order to compensate for perspectival distortions which would be experienced by the viewer at close range. Moretti knew

that his sculpture would be viewed indoors, at close range, and it is reasonable to assume that he employed a compensatory enlargement of the upper torso and arms in an effort to create the appearance of a well-proportioned figure to the Exposition viewers, most of whom viewed Vulcan literally at his feet, where visual distortion was most severe. Indeed, an account of the casting of the head states that it was made two and one-half feet larger in all dimensions in order to give "the colossus an appearance of symmetry from the levels from which he will be viewed" However, the account goes on to say, this method was "seldom practiced on such a large model as in this instance."¹²² It is also true that Moretti did not have the time or facilities to properly view the entire, assembled Vulcan figure during the process of making the full-sized molds from the eight-foot plaster model.

Considering Vulcan's questionable proportions, it is possible that Moretti overcompensated for the anticipated distortion. Unlike the large, final cast iron Vulcan, the preparatory plaster model appears well-proportioned from a full, frontal, horizontal view, and is a far more sensitively-modeled figure. The appearance of the preparatory model, which was a plan of intent to show the client what the finished product would look like, is markedly different, however, from the final Vulcan, with its short legs, stocky torso, and enlarged head. It is unlikely that Moretti intended to make Vulcan misshapen all along, and

made a more handsome model to fool his clients; this would have outraged the Commercial Club and risked his career. The more likely possibility is that something went wrong in the pattern-making process, when the components were being scaled up, a process supervised by Moretti.

As a result of possible overcompensation for perspectival distortion, the Vulcan statue straddles a technical, and therefore visual borderline. If Moretti intended to create a ruggedly handsome figure with some adherence to historical precedent, he succeeded admirably. If Moretti intended to make Vulcan's upper body larger for purely technical reasons, it would appear that he made it too large. Considering the degree of distortion, this seems an unlikely, and unfortunate accident for a professional with experience in public statuary such as Moretti. In the surviving photographs of Vulcan at the Exposition, and from some locations on the ground at Vulcan Park, the statue does not appear badly distorted, but at best, Vulcan does appear thickset, or overly muscular in the upper body. At a distance, where the viewing angle is shallower, this ambiguity is more resolved. In photographs and views where Vulcan is seen at a distance, the distortion of the upper body is pronounced, and from certain low angles, even grotesque and dwarf-like. At best, his right arm appears too long, and his head appears unusually large from most common viewing angles, and even from the steep angles afforded at Vulcan Park.

The ambiguous nature of Vulcan's appearance is likely the reason for the varying opinions regarding Moretti's ultimate depiction of Vulcan. Vulcan's alleged disfigurement is often referred to a lameness, which implies an infirmity of the legs. Vulcan's legs are shapely, muscular, and in proportion to each other and his lower body. If anything, Vulcan appears to suffer from dwarfism, a syndrome that affects the proportions of the upper and lower parts of the body, rather than any other more obvious lameness or deformity. This certainly reflects the mythological explanation for Vulcan--he was weak in the legs, and became overdeveloped in his arms and torso. Ultimately, the appearance of the Vulcan statue is ambiguous--it appears ill-proportioned, but not intentionally unattractive, which supports the argument for the handsome, yet historically correct depiction.

Ultimately, the client was satisfied, judging from the statue's reception and the rhetoric of the day. If there were indeed any arguments between Moretti and the Commercial Club over the suitability of an "ugly Vulcan" versus a "handsome Hermes" to accurately symbolize the Birmingham district, Moretti made the best choice, and his clients realized it. The tousled, bearded, stocky, creature was a far more appropriate personification of the young, dirty, brash, industrial city than some other lithe, fleet-footed deity. Fred Jackson, Commercial Club president said of Vulcan's appearance: "Mr. Moretti, who was

a sculptor of renown, did not design this Vulcan to be a statue of artistic beauty, but rather to represent the marvelous mineral resources of our district and to inspire the youth of our land with its possibilities."¹²³ Unfortunately, Birmingham's turn-of-the century art elite considered Vulcan a "monstrosity", and groups such as the Daughters of the Confederacy did not want "indecent" Vulcan, with his exposed derriere, downtown in Capitol Park, compromising the fountains and proper statuary of Victorian Birmingham. Objections such as these contributed to the confusion over the statue's disposition upon its return to Birmingham.¹²⁴

Comparison of Moretti's eight foot tall plaster model of Vulcan with the finished, full-size cast iron version demonstrates the overall success of the final casting. Under Moretti's supervision, skilled foundry pattern makers had to build an enlarged version of the plaster model, in sections small enough to be individually cast. In terms of the translation of the articulation of the various surface textures, particularly the face and beard, the full-size iron casting appears to have been fairly successful. The face is quite similar in appearance and expression. Subtle detail was lost in the scaling up of the figure, and in the casting process, giving the finished Vulcan a slightly cruder appearance. The hair and beard appear noticeably more generalized on the finished casting than on the small, and full-size plaster models. Vulcan's elaborate curly beard could not cast as intended due to the technical difficulty of casting

the cutbacks, or protruding curved details, which would have consumed too much time. The right arm, cast from new molds by the Beggs foundry, appears indistinguishable from the original McWane castings.

To properly balance the statue, and to prevent it from breaking under its own weight, the individual sections were made roughly three or more inches thick at the bottom of the figure, in the legs and waist, and were cast thinner toward the top, in the chest, head, and arms, where the thickness of the casting tapers off to two inches or less. This scheme is not particularly consistent overall, but the average thickness does decrease with elevation. Vulcan was cast with a large round opening at the top of his head in order to conserve weight, as the top of his head is not visible. This opening has been covered with a metal hatchway. Vulcan is described as being cast in seventeen sections, but when the individual fingers and thumb of the right hand are included, the number of separate castings for the body comes to twenty-two, and the hammers, anvil, base, and speartip add another seven components to the original number. The sections were cast with continuous overlapping flanges at the edges of the joints, or "bell and spigot" type joints. These flanged joints are visible in the views of Vulcan when he lay dissassembled on Red Mountain (figure 23). The mating surfaces of the joints were painted a dark shade in order to reduce their visibility, and

grouted with a non-structural material to smooth over the rough joints.

The joint flanges were employed to properly locate the pieces, and to provide lateral, or shear strength, at the joints. In addition to the flanges, bolts were also employed to hold Vulcan's joints together. Holes were variously cast into the flanges, or drilled through them after casting. These bolts, which are backed up by plates or large washers to distribute stress, hold the joints together by compression. The structural supports at the joints on the right and left hands are more elaborate. Protruding tabs or lugs were cast into the inside edges of the wrist joints, and joined with bolts. On the right hand, the cast lugs were substituted with angle iron tabs bolted to the inside of the joint, as the proper holes and lugs were left out in haste during casting. The fingers of the right hand are connected to the hand with internal one inch by four inch steel straps bolted to the cast iron. The hand is connected to the wrist in a similar fashion. Several of the hand and arm joints are misaligned.

The upraised right arm is supported internally by a long, one inch by four inch sectional steel strap that is bolted to the length of the upper inner surface of the arm. The strap system may have been added at a later date, possibly at the time of the Red Mountain installation, to strengthen the arms and to prevent

the loss of digits and limbs which plagued the statue while at the State Fair Grounds. Vulcan was traditionally assembled using a scaffold, and it is likely that with the installation of the straps, the arm was actually supported by a scaffold during assembly, so that it would not support its own weight until the internal straps were bolted in place.

Classical sculptures which were carved from marble, like cast iron, a brittle and homogeneous material, often employed compositional elements such as tree trunks as disguised braces for more technically daring arrangements of the figure's limbs. The brace between Vulcan's left wrist and hip, however, is not original, nor is it a structural foil. As designed by Moretti, the hammer handle supported the weight of the left arm, and the brace was installed later when the anvil block was moved from Vulcan's side to behind his leg so that he would fit on the narrow pedestal. This brace consists of a threaded tensioning rod which is bolted to the opposite cast iron sections, surrounded by a non-load bearing, cosmetic pipe sheath.¹²⁵

PHYSICAL AND HISTORICAL INTEGRITY

The various modifications and reerections of Vulcan have resulted in damage to his physical integrity. Vulcan's greatest environmental enemy is corrosion. Cast iron, with its high silica content, is more rust-resistant than other ferric compounds,

however, Vulcan is exposed to more water than anticipated by his designer. Rain water enters Vulcan through his head, and various holes cut into his body for access to lighting equipment. The lead and fiber caulk in the joints between his various parts has not been maintained, admitting still more water to his interior. Compounding this problem is the manner in which Vulcan was mounted to his pedestal. Both feet, and the anvil stand were drilled and threaded, angle clips were bolted to them, and anchored to the concrete base. Two four and one half inch, ten foot steel reinforcing rods were run through the soles of each of Vulcan's feet and up into the hollow spaces inside his legs. Vulcan was filled with concrete to the center of his chest in order to ballast him, and bond him to the reinforcing rods. The anvil was anchored in a similar manner, resulting in a large hole in the top of the anvil where the concrete was poured. This engineering feature, an unnecessary attempt to ballast the sculpture against high winds, has proven highly detrimental to Vulcan. In the winter, water collects between the cast iron shell and the concrete core. When the water freezes, it expands, causing the cast iron to crack. Cast iron and concrete have differing rates of contraction and expansion, which may also add to the cracking problem, particularly at times of rapid temperature change, such as at sunrise. Drains were installed in the concrete, however, they are inadequate and prone to clogging. The cracks weaken the structure, and white calcium carbonate stains from cement leaching through the cracks have discolored

Vulcan's exterior, and have actually built up in layers several inches thick in places. According to a report by Law Engineering Industrial Services, corrosion has reduced the section thickness of internal supporting features, which requires in situ treatment or replacement of those members, and several of the flanges and bolts that hold the cast sections together are cracked, missing, or weakened by corrosion. Vulcan's exterior, currently in red primer, is in need of stripping, proper surface preparation, and weatherproof painting.¹²⁶

The incorrect assembly of Vulcan's arms is often mentioned as one of the indignities he suffered during his tenure at the State Fairgrounds. When Vulcan was placed atop his pedestal on Red Mountain, however, he was not reassembled as Moretti had originally intended for the St. Louis Exposition. In order to fit Vulcan's anvil on the pedestal, it was swung from its original position at his left side, to a location behind his left leg. In order to make this modification, the handle of Vulcan's hammer had to be attached to his hand at a more acute angle. To facilitate this modification, the hole at the heel of Vulcan's palm had to be cut to a new radius, and the hammer withdrawn from his grip so that the end of the handle no longer protruded from his hand. This modification apparently weakened the statue, for a brace was installed between Vulcan's waist and his wrist.¹²⁷ Vulcan's anvil and stand was turned 180 degrees from its St. Louis configuration in order to hide the bare rectangle where the

"Vulcan's Prophecy" plaque was bolted. The anvil base was also shortened by the elimination of the smooth band that separated the top and bottom halves. This was likely done to reduce the angle between the hammer handle and the anvil. Vulcan's hammer head was installed in a position 180 degrees from its St. Louis configuration, and the second, lost hammer was not incorporated in the Red Mountain design. Vulcan's wrist joint is clearly misaligned due to the changes in the configuration of his left arm.

Vulcan was conceived and created as a temporary spectacle for an inherently transitory event, the Louisiana Purchase Centennial Exposition. Vulcan was the result of a request for an exhibit from a party outside of Alabama, for an event outside of Alabama. Vulcan was intended to be an elaborate advertisement for the products of the Birmingham District, and as a symbol of its growing industrial might. After the Exposition was over, several cities wanted to purchase Vulcan from Birmingham, which declined the offers. This was not an unusual situation, as buying and trading of exhibits after such events was not uncommon. Despite the fact that the Commercial Club could have made a profit on Vulcan, had they sold him, Vulcan was retained, and returned to his place of origin. Although his erection on Red Mountain was discussed at the time of his return, his subsequent history indicates that his location became the object of controversy, and he became somewhat of a "white elephant".

In a sense, Vulcan can be viewed as having been "out of context", and therefore having lost his historical integrity, ever since his departure from St. Louis, after the Exposition, and his checkered career of benign neglect and cycles of questionable attention certainly support this statement. But Vulcan's historical context has continued to evolve with the changes in his physical context, and this evolution must be considered. For example, Vulcan's long tenure at the State Fair Grounds receives little attention in most popular accounts of his career, however, Vulcan served a visible role as a social fixture for Depression-era Birmingham.

Vulcan's eventual erection on Red Mountain was supported by rhetoric which noted the appropriateness of his location atop the ore deposits from which he was made, and his location overlooking his industrial birthplace. The literal and figurative elevation of Vulcan to this spot can be seen as a desirable, natural eventuality. Vulcan has been located on Red Mountain for more than half of his existence, and those who remember him from the Fair Grounds are in the minority. For the majority of people in Birmingham, Vulcan's physical context has always been Vulcan Park, on Red Mountain.

When Vulcan was quite literally "placed on a pedestal", in 1939, his relationship to the viewer, and to the people of Birmingham, changed dramatically. The 55-foot tall Vulcan was

certainly impressive when erected in the Palace of Mines and Metallurgy, as it was the largest object in the room, and towered over all of the other exhibits. Vulcan impressed by his sheer volume inside a closed space, if nothing else. When Vulcan was placed on the ground in the flat, open air of the State Fairgrounds, he was visible from the immediate area due to his height, but his scale and visual impact were greatly altered and diminished by his new surroundings.

The visual aesthetics of the Vulcan statue have been altered by the relocation to the tower on Red Mountain. By extension, the historical integrity of the statue has also been compromised through this move. When the original intent and location for Vulcan are considered, particularly in the light of the distortions cast into the statue, be they intentional, or even overcompensatory, the pedestall location appears a less than optimum one for Vulcan. From an aesthetic viewpoint, Vulcan's relocation to a position where he is highly visible from a shallow angle was unfortunate, as it aggravates the distortion inherent in his upper body when viewed from a distance.

When Vulcan was placed atop the tower on Red Mountain, his psychological relationship to his viewers changed dramatically. Previously, at the Exposition, and more importantly at the Fairgrounds, Vulcan was only visible to a discrete number of viewers at a time. Vulcan was never raised more than a few feet

from the ground. This affected not only the viewer's visual impression of Vulcan; it affected attitude toward him. Once at the Fairgrounds, Vulcan was no longer the bold spokesman for Birmingham industry that he was at the Louisiana Purchase Exhibition. The awkwardly-reassembled Vulcan became a familiar member of the community, and his familiarity did not come without a degree of contempt, as is evidenced by the indignities he suffered at the hands of advertisers, and the circulation of his "escapades" in newspaper cartoons.

Vulcan's relocation to Red Mountain, like his creation for the Louisiana Purchase Exposition, was intended for promotional ends, and was developed by a local civic organization. The goal of the Exchange Club, and Birmingham Kiwanis, was to create an area attraction, and in the process, restore dignity to the Vulcan statue. Once assembled on the mountain, the dynamics of Vulcan's visibility were reversed. He became visible to many thousands of people at a glance, but he was high in the air, no longer a physically accessible character. Once Vulcan's overall visibility was increased, and his dignity apparently restored, the image of Vulcan became more strongly associated with the city of Birmingham, but more as a result of the Jaycees "Light for Life" campaign and torch, than anything else.

Vulcan's physical and historical integrity has been affected by physical modifications to the statue. An ongoing

issue is Vulcan's paint scheme. At the Louisiana Exposition, Vulcan was painted a neutral grey tone. His advertising stint at the Fairgrounds, and the attendant familiarity issues, placed the choice of Vulcan's paint schemes in the public domain. Vulcan has endured solid coats of several colors since he was placed on Red Mountain. Historically, classical sculpture was painted in a bright, naturalistic manner. It is unlikely that the classically-trained Moretti would have preferred a naturalistic scheme for his Vulcan, for his work in marble shared the pure, white finish preferred by nineteenth-century neoclassical sculptors. The closest Vulcan came to a naturalistic paint scheme was his debut on Red Mountain, but his detailed paint scheme was the result of his being painted on the ground, prior to assembly, a task now prohibitive due to the exposed position of the statue.

A dramatic historic and physical compromise to Vulcan was the 1946 installation of the traffic safety torch by the Birmingham Jaycees. The torch was constructed so as to obscure the speartip which Vulcan holds in his hand (figure 24). Vulcan was originally portrayed in the act of checking the straightness of the speartip he was forging, and the torch has obscured this narrative element of the statue. Large holes were cut into the cover at the top of Vulcan's head, his shoulder, and arms to mount nighttime illumination, and external wires and numerous service handrails added visual clutter to Vulcan's appearance. The original square-shanked, arrow-shaped speartip was lost at the

fairgrounds, and replaced with a pyramidal, triangular speartip with a shorter, cylindrical shaft, now obscured by the torch. The replacement speartip was mounted at a new angle, where the shaft was still held between thumb and forefinger, but penetrated the palm, instead of resting along the top of the hand.¹²⁸

The installation of the Jaycees "Light for Life" traffic safety torch was an ironic event, for it thrust Vulcan into national publicity due to the success of the Jaycees traffic safety campaign. It is likely that this event made Vulcan known to far more people than the nineteen million who saw him at the St. Louis Exposition. The historic symbolism of Vulcan was little-known outside the region, and the campaign may have made Vulcan a new destination for tourism, but the torch has had a different effect within the radius of direct visibility. Vulcan's symbolism has been compromised, for he is now seen as a nocturnal torchbearer, warning of life or death on Birmingham's streets according to the color of his torch. At the present time, the red bulbs in the torch do not even operate--the torch itself does not even perform its intended function. The longevity and pervasiveness of the image of the torch is similar to that of the park itself--it is treated as if it has always been there. As often as not, advertising imagery which uses the profile of Vulcan, and even the decals on the doors of City of Birmingham vehicles, will include the torch instead of the speartip in

Vulcan's upraised right hand, looking like an amorphous popsicle (figure 25).

Development along the ridge of Red Mountain in the immediate area of Vulcan Park has further compromised the integrity of the site. Private homes and clubs dot the trees at the top of the ridge, and four tall and two short radio and television transmission towers immediately to the west of Vulcan Park dwarf the statue on its pedestal (figure 26). The impact of the towers on Vulcan is even more dramatic at night. When seen from a distance, the blinking red and white aircraft warning lights on the towers render the low green glow of Vulcan's safety torch insignificant by comparison, further diminishing its meaning and visibility. Vulcan's torch has been in place for so long, that it has become a part of Vulcan's local imagery, and perhaps even a part of its history. Removal of the torch may require far more political than physical effort.

To the city of Birmingham, Vulcan, and Vulcan Park appear to have been considered moveable, mutable elements, perfectly appropriate for alteration to satisfy cycles of civic promotion. In a sense, though, that is just what Vulcan was created for. Sculptor Giuseppe Moretti lamented what he considered Vulcan's fall from grace after the St. Louis Exposition, and many others appear to take Vulcan quite seriously, and agree with this point

of view. It is entirely likely, however, that Messrs. Jackson, MacKnight, and company from the Birmingham Commercial Club have not been turning in their graves over Vulcan's condition, but instead heartily approve of Vulcan's ongoing utility and incorporation in city promotional schemes.

A move is afoot to restore the Vulcan statue, and renovate Vulcan Park. Vulcan Park is also currently under consideration as a visitors center and interpretive facility by the proponents of a Birmingham industrial heritage project--another attempt to place Vulcan at the center of, and make Vulcan Park the site of, regional tourism. Considering the potential for interpreting the economic geography of the district, the view of Birmingham from Vulcan Park makes it an ideal place to understand the dynamics of ^{South} ~~the~~ District. Hopefully the statue can and will be renovated ~~so~~ ~~as~~ to last another ninety years, and hopefully the renovation of the park will sensitively reflect not only historic shapes, colors, textures, and materials, but the visual and physical accessibility, and the history and symbolism of the Vulcan statue, and Vulcan Park, as originally conceived.

1. The claim of largest cast iron sculpture in the world has appeared, unqualified, in many sources. The decision to not repeat this claim here was made after much deliberation. In the research for this narrative, the following three experts were among those consulted regarding this issue: Betsy Fahlman, Professor of Art History, University of Arizona, Tempe, who is an authority on the depiction of industry in Art, and edits the "Industrial Archaeology in Art" column of the Society for Industrial Archeology Newsletter; John Schnorrenberg, Professor of Art History at the University of Alabama-Birmingham; Schnorrenberg's specialty is classical and medieval art, and he has researched Vulcan and the context of other colossi; and Robert M. Vogel, formerly of the Smithsonian Institution, who

possesses an extensive knowledge of American industrial history, particularly as it relates to iron. All three authorities know of no other cast iron sculpture that approaches Vulcan in size--to the best of their knowledge, Vulcan is the largest cast iron sculpture in the world. The national survey work performed to date by the Save Outdoor Sculpture program of the National Museum of Art, and the Inventory of American Sculpture, compiled by the same museum, lists no sculpture, cast iron or otherwise, of Vulcan's height in the U.S., except of ~~course~~ the Statue of Liberty. The "S.O.S." survey is incomplete, although it is unlikely that any sculpture of the dimensions and medium in question has escaped attention, Vulcan, however, is not yet on their list. An exhaustive, or even comprehensive cataloging of U.S. or world colossi, particularly those made of iron, or with industrial connotations, or that overlook cities from landscaped parks is ~~obviously~~ beyond the scope of this report. Therefore, the author has chosen to qualify Vulcan's claim to the superlative in question--Vulcan is reputedly the largest cast iron sculpture in the world. It is possible that there is, or was at one time, a comparable or even larger cast iron sculpture of some kind, but the existence of any such work did not come to light during the research for this report.

2. Marjorie Longenecker White, The Birmingham District: An Industrial History and Guide (Birmingham: Birmingham Historical Society, 1981), 39.

3. Martha Carolyn Mitchell Bigelow, Birmingham: Biography of a City of the New South (Birmingham:), 19

4. Leah Rawls Atkins, The Valley and the Hills (

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5. Bigelow, 38.

6. Ibid, 31.

7. Malcom McMillan, Yesterday's Birmingham 78.

8. Ethel Armes, The Story of Iron and Coal in Alabama (Leeds, Alabama: 1987), 466.

9. Bigelow, 46.

10. White, 54.

11. Raymond J. Rowell, Sr. Vulcan in Birmingham (Birmingham: Birmingham Centennial Committee, 1972), 6.

12. South Central Bell Telephone Company Business White Pages (1993), 201-202.

13. City of Birmingham, Records of Incorporation, Vol.E, 311.

14. Ibid, Vol.G, 53.

15. Bigelow, 40.

16. Records of Incorporation, Vol.B, 348.

17. Rowell, 10.

18. Brian Holme, Bulfinch's Mythology: The Greek and Roman Fables Illustrated (New York: Viking Press, 1979), passim.

19. Raymond J. Rowell, Sr., Vulcan in Birmingham (Birmingham: Birmingham Centennial, 1972), 12.

Rowell's book is by far the most exhaustive treatment of Vulcan's history. The author was a journalist and reporter for the Birmingham Age-Herald, who satisfied his interest for area history through years of research in the archives of the Birmingham Public Library ~~archives~~, often on his lunch hour, according to Linn-Henley Research Library Archivist Marvin Whiting. Rowell made use of newspaper accounts almost exclusively, however, he did not footnote, and only occasionally mentioned the dates and sources of his references. This history of Vulcan relies strongly on Rowell's work, and Birmingham newspapers, particularly for the events of 1904-1906, and does not attempt to equal Rowell in length or detail.

20. James Arthur MacKnight, The Executive Commissioners of the Louisiana Purchase Exposition St Louis, Missouri 1904. p.147. Universal Exposition Press, St. Louis, 1904. James MacKnight was chosen by the Commercial Club to lead the Vulcan project, as it was his invention. MacKnight also served as the Club's liason with Exposition authorities, a position which he was well qualified for, as he had been the Administrator of the Alabama State Fair since 1898. MacKnight travelled to St. Louis to make arrangements and to secure a place for Vulcan. Apparently the Exposition authorities tapped some of MacKnight's energy and skills as a journalist, as he authored Exposition documents such as the Executive Commissioners biographies. The newspaper articles sent to Birmingham from St. Louis while MacKnight was there are all similar in their laudatory tone, and are likely the work of MacKnight. It is difficult to identify the true source of undocumented early Vulcan promotional material; likely most of it comes from the key players in the Commercial Club itself: MacKnight, Fred Jackson, and the recurring poetry of J.H. Adams. x

21. F.M. Jackson, "Vulcan", in "Voice of the People", 8-19-35, Birmingham News n.p. This letter to the editor represents the only primary document written by anyone directly involved with the Vulcan project that was not written with promotional intent that was found in the course of research.

22. James MacKnight The Executive Commissioners...

23. "How the Vulcan Idea Started and Developed", Birmingham Age Herald, 2-28-04

X 24. "How the Vulcan Idea Started and Developed", Birmingham Age-Herald, 2-28-04 n.p.

25. "Colossal Vulcan Will Be Made for St. Louis", Birmingham Age-Herald, October 14, 1903.

26. Rowell, 22

27. "Big Corporations to Make Exhibits", Birmingham Age-Herald, October 28, 1903.

28. Birmingham News, Nov. 20, 1903. Editorial.

29. M.V. Joseph, at meeting of Birmingham Commercial Club, Nov. 1903, as quoted in Rowell, p13.

30. Rowell, 14.

31. The earliest, and possibly root source of the "arguments" is found in an undated, anonymous biographical history of Moretti's involvement in the Vulcan commission, likely written by his assistant Geneva Mercer, in the Mercer papers at the Linn Henley Research Library, Birmingham. A similar statement is made in "Iron Man", Time magazine, August 17, 1936.

32. Geneva Mercer papers, Linn-Henley library

33. Pittsburgh Chronicle-Telegram, Sept. 7, 1922.

34. Biographical material on Guiseppi Moretti was found in the Geneva Mercer Collection and Guiseppi Moretti scrapbooks at Special Collections and Archives, Livingston University, Livingston, Alabama, and the Guiseppi Moretti and Geneva Mercer papers at the Archives and Manuscripts Division, Linn-Henley Research Library, Birmingham Public Library. Papers at the Birmingham repository were more thorough. Biographies consulted were undated, unpaginated typewritten manuscripts, either by Geneva Mercer, or no author given.

35. "Vulcan Idea Gets Big Endorsement", Birmingham Age-Herald, Jan. 28, 1904.

36. Birmingham Age-Herald, November 27, 1903.

37. Thomas B. Leonard, "Vulcan Statue", letter in Linn-Henley Vulcan clippings file, Southern Room.

38. Thompson, 7.
39. Birmingham Age-Herald, Thursday, January 14, 1904.
40. Birmingham Age-Herald, October 27, 1903.
41. City of Birmingham Records of Incorporation, Volume "N", page 604. Birmingham Probate Court, Birmingham Court House.
42. Information on the history of the McWane foundry concerns is found in: anon., "James Ransom McWane," The Iron Worker October 1934: 8-9; Marcus J. Elcan, Jr., "And now, a few words as to your future prospects," The Iron Worker Autumn, 1959:20-24; Carolyn Satterfield, "J.R. McWane: Pipe and Progress," The Alabama Review Vol.35, January 1982, No. 1: 30-37, and an interview with James Ransom McWane, July 13, 1993.
43. Rowell, 33.
44. Deed Book 352, Page 87, Birmingham Probate court records.
45. Birmingham Age-Herald, February 13, 1904
46. Mortgage Records, Book 348, page 564, Birmingham Probate Court.
47. "Will Soon Build a Steel Furnace", Birmingham Age-Herald, April 9, 1904.
48. "Vulcan Donated to Birmingham", Birmingham Age-Herald, June 18, 1904; "Ptice for Casting Vulcan Adjusted", October 8, 1904.
49. Conversation with James Ransom McWane, July 13, 1993.
50. The financial woes of the Birmingham Steel and Iron company can be traced through the Probate records at the Jefferson County courthouse, Birmingham. Particularly helpful in tracing events are deed book 212, pages 277 and 372; book 352, pages 87-88, book 383, pages 95-97; book 732, pages 46-49; and mortgage book 348, pages 564-569. The circumstances surrounding the failure of the company were discussed in an interview with Mr. James Ransom McWane on July 13, 1993, and the account as written accurately reflects events, according to Mr. McWane.
51. Pig Iron Rough Notes, "Vulcan, God of Fire and Metals", 1937, p.4.
52. The information on the making of the pattern and the mold was synthesized from several sources: C.W. Ammen, The Metalcaster's Bible, Tab Books, Blue Ridge Summit, Pa. 1980;

George Thompson, "Casting Vulcan", a sidebar in "Vulcan: Birmingham's Man of Iron", Alabama Heritage 20, Spring 1991: 12-13.; "The Casting of the Colossus Vulcan" in American Machinist, July 6, 1905: 17.; John L. Busby, "Vulcan Celebration Attracts Thousands--Iron Man Was Made by Union Molders", in Labor--The News-History Magazine, May 15, 1939.; and "How Cast is Made", in Birmingham Age-Herald, March 22, 1904.

53.53. Information on the personalities involved in the casting came from J.L. Busby, "Vulcan Celebration Attracts Thousands--Iron Man Was Made by Union Molders", Labor--The News-History Magazine, May 15, 1905.; Rowell, p.23.; Erna Oleson Xan, "Vulcan Has a Hole in His Head", Birmingham News, 12-2-62.

The following list of names is cast in the upper arm section of Vulcan's right arm, which was damaged on its return from St. Louis, and entirely recast from new molds by the H.T. Beggs foundry. This list is sometimes referred to as "the men who cast Vulcan"; this is not, however, entirely correct: S. Akin, F. Cahalan, G. Cass, D. Green, (O) Greener, (?) Greener, B. Plant, and (T) Wheeler.

54. Molding chronology and casting weights appeared in daily updates of the Vulcan work in the Birmingham Age-Herald, March 10-April 1904.

55. "Leg of Vulcan Makes Excellent Casting", Birmingham Age-Herald, March 27, 1904

56. "Vulcan Statue is Nearly Completed" Birmingham Age Herald, April 10, 1904.

57. "Fitting of Vulcan Parts Together", Birmingham Age-Herald, April 9, 1904.

58. Thomas B. Leonard, letter, "Vulcan Statue", Vulcan Clippings File, Southern Room, Linn-Henley Library.

59. Erna Oleson Xan, "Vulcan has a Hole in his Head", Birmingham News, 12-2-1962.

60. Ibid.

61. Birmingham Age-Herald, "Marvel of Vulcan Hardly Realized", April 14, 1904.

62. Conversation with James Ransom McWane, July 13, 1993.

63. Rowell, 27.

64. World's Fair Bulletin V3. No. 1 November 1901. St. Louis: World's Fair Publishing Co.

65. Mark Bennitt, ed., History of the Louisiana Purchase Exhibition (St. Louis: Universal Exposition Publishing Co., 1905), 625.
66. Anon. The World's Fair, St. Louis, 1903 (St. Louis: Louisiana Purchase Exposition Commission, 1901), 14.
67. Joseph A. Holmes, "Mining and Metallurgy", in Worlds Fair Bulletin (St. Louis: World's Fair Publishing Co., 1904), 17.
68. Dorothy Daniels Birk, The World Came to St. Louis (St. Louis: Bethany Press, n.d.), 40.
69. Birmingham Age Herald, October 27, 1903. n.p.
70. "Vulcan Soon to be on Exhibition", Birmingham Age-Herald, April 12, 1904. No examples of the brochures or illustrations of souvenirs were encountered.
71. Birmingham Age-Herald, October 28, 1903.
72. Birmingham Age-Herald, May 1, 1904.
73. Vulcan Clippings File, Linn-Henley Research Library.
74. Rowell, 34.
75. Birmingham Age-Herald, March 13, 1904.
76. Jones, Walter B. Bulletin No. 42--History and Work of Geological Surveys and Industrial Development in Alabama. Geological Survey of Alabama--Wetumpka, Alabama: Wetumpka Printing Company, 1935. 36-37.
77. The funding of the Vulcan project is not discussed in the body of this report, as it is rather convoluted. Estimates place the cost of the Vulcan project somewhere between \$22,000 and \$27,000. Most of the money was raised from contributions from: Jefferson County (\$5,000), the City of Birmingham (\$500, not the \$2500 requested), Ensley, Pratt City, and Woodlawn (reneged on their \$500 pledges), the United Mine Workers (\$500), The Birmingham Belt Railway (\$500), the Birmingham High School and Water Works (\$100 each), Sloss-Sheffield Steel and Iron Co. (\$500), the Tennessee Coal and Iron Co. (\$500), the State of Alabama (\$1500/2500?), and France (\$5.00). Other funds were raised through stock subscriptions, sale of Vulcan statuettes (now rare collector's items), concerts (Moretti was an accomplished opera singer and friend of Enrico Caruso's), political debates, art lectures, and \$700 was raised in admission fees for a baseball game between the Birmingham Barons and the New York Giants, featuring former foundryman Joe "Iron Man" McGinty. (McGinty was allowed to assist in the pouring of a piece

of the Vulcan statue). The Louisville and Nashville Railroad donated free transportation to and from St. Louis. The Vulcan project, naturally, went way over budget. Moretti's fee of \$6000 was three times the original estimate. The Commercial Club was able to raise roughly \$15,000, which covered all but the foundry bill, which was reduced by the foundry owner as a civic gesture. The Commercial Club ended up with approximately a \$4000 deficit, which it paid for through Club funds and voluntary membership contributions. (source-Birmingham Age-Herald, various 1903-1906).

78. Birmingham Age-Herald, October 27, 1903.

79. Rowell, 35-38. Rowell explains the complicated events surrounding the decision to locate Vulcan in detail.

80. Rowell, 36.

81. The Birmingham News, 19 October 1906, n.p.

82. Rowell, 42.

83. George Clinton Thompson, "Vulcan-Birmingham's Man of Iron," Alabama Heritage 20 (Spring 1991): 15.

84. Clark H. Hogan, Palmerdale, Al. to a Mrs. Dent, February 28, 1986, photocopy in the collection of the Birmingham Historical Society, Birmingham, Alabama.

85. Cartoon, "The Lighter Side of Vulcan's Life," Birmingham Age Herald, 9 May, 1939. n.p. This cartoon appeared when Vulcan was moved to the completed park on Red Mountain, and captures the spirit of the earlier cartoons through a summary of the high and low points of Vulcan's life, with obvious editorial and political overtones (figure 14).

86. Geneva Mercer, Moretti's lifelong assistant, in a tape recorded interview, 1/16/80. (two cassette tapes) Archives and Manuscripts Division, Linn-Henley Research Library. Other allusions to Moretti's concern for Vulcan and regret at its condition are found in Birmingham Age-Herald, October 31, 1937. Mention of the statue appears in articles about Moretti which were published soon after the St. Louis Fair, but it does not figure in illustrated articles about his work or in lists of his public sculpture prepared by him or Geneva Mercer prepared later in his career. This is possibly an indication that Moretti wished to disassociate himself from his once-important colossi. Moretti refers to the Vulcan statue as "him". This use of the familiar in referring to Vulcan extends to native Birminghamians today, and is utilized in this narrative.

87. Anonymous, Birmingham, to unidentified Birmingham newspaper, 1933. Original in Vulcan clippings file, Linn-Henley Research Library, Birmingham, Alabama. Author is likely La Noue Matta, an Exchange Club member who attempted to raise a \$6,000 subscription fund to move Vulcan in 1935, according to an undocumented newspaper clipping in the George B. Ward scrapbook, microfilm, Archives, Samford University, Birmingham, Alabama.

88. Frank Bromberg, Birmingham Kiwanis past Presidents biographies, J. Mercer Barnett file. Files in the office of the Birmingham Kiwanis Club, Birmingham, Alabama.

It should be note that⁷ the Kiwanis minutes for this critical period are missing from ... 70 ... miss
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89. Rowell, 43.

90. Birmingham Age Herald, Thomas Joy, obituary, May 14, 1944.

91. unidentified Birmingham newspaper, July 28, 1935.

92. unidentified, undated newspaper clipping, LHRL

93. Deed 2694, p.357, Birmingham Probate records.

94. Birmingham Mineral Railroad--Historic Site Survey
Birmingham Historical Society Records.

95. Conversation with Lewis Shannon.

96. Thompson, 15. Newspapers with figures for the overall allocation of funds, and breakdowns of how those funds were to be spent appear in various newspaper clippings in the Vulcan clippings file at the Linn-Henley Research Library. All figures vary slightly.

97. The Kiwanian, Birmingham, February 25, 1936.

98. "Making Ready for Vulcan", an otherwise undocumented newspaper clipping in the George B. Ward scrapbook, Samford University, Birmingham, Alabama.

99. According to a conversation with James R. McWane, 7-13-1993, the quarry in Lane Park also supplied the stone for Birmingham Zoo shelters and the Zookeeper's cottage. An undocumented newspaper article in the George B. Ward scrapbook at Samford University, "Stone Quarried in Lane Park", also states that Birmingham Park Superintendant R.S. Marshall opened up a quarry on a hillside in the northeast corner of the park. The rock was described as a beautiful pink sandstone, with "ore streaks" (color from iron impurities, and now brown from exposure

to air). This stone was used for the Woodward and Ensley bathouses, and the Central Park community center. It also stated that the quarry was to be made into a rock garden, which pinpoints its location.

100. The stonemasons are, in order listed: Gene Bone, Calogero Bordenca, Martino Cantesano, Elviro DiLaura, Francesco Giovino, Salvatore Giombrone, Carmelo Raco, Francesco Mazzara, Nicola Montana, Onofrio Paladino, Pietro Scalia, Alberto Schilleci, Antonio Scozzaro, and Alfonso Arnone. Francesco "Frank" Mazzara was known as a crew foreman, as he had a good command of the English language (Birmingham Historical Society, summary of interview with Vincent Mazzara, 2-26-93.) A letter to the editor (undocumented clipping) in the Vulcan clippings file in the Linn-Henley Research Library from another Vulcan Park stonemason, Anthony A. Danielle, lists Antonio Mures, Louis Levin, Olindo Nativi, George Easter, Carl Bearden, Robert Elgin, Z.B. McGinnis, Sebastain Peirane, Carlo Mazarro, as Vulcan Park stonemasons, and a Mr. Froelich as "the Superintendant".

101. All references to Vulcan Park tower construction details derive from a copy of a set of original Warren, Knight and Davis drawings, 15 sheets, dating variously 1936-1937. Copies from ~~Nimrod Long and Associates, Architects, 2213 Morris Avenue, Birmingham, Al.~~ *Courtesy*
Lands Corp *Blair*

102. Earlier designs for the tower included far more in the way of buttresses and streamlined moderne decoration. The eventual use of restraint is fortuitous. *67*
Van
En
Law

103. Undocumented newspaper article, George B. Ward scrapbook, Samford University, Birmingham.

104. Vulcan clippings file, LHRL

105. Vulcan clippings file, LHRL

106. Rowell, 47-48. Regarding the temporary intent for the torch, Rowell connected Jaycees President Clarence Boggan with a quote: "the torch would be temporarily put in Vulcan's hand, and it would be removed after the Jaycees safety campaign was concluded."

107. George B. Ward scrapbook, Samford University, Birmingham, Alabama.

108. The best sources of visual information on Vulcan Park are photographs in Kiwanis 1938 brochure Birmingham's Vulcan, and 2/29/70 Elliot and Bradford map showing conditions existing in 1969 and proposed alterations, including structures and contour lines. No original drawings or plans for the park have come to

light, and the Birmingham Park and Recreation Board has no original or later park drawings.

109. Park planting information was obtained from an interview with Carl Mattil, former Vulcan Park groundskeeper, now a Birmingham Park and Recreation Board horticulturalist, 7-20-93, and Tom Hill, who was a Vulcan Park groundskeeper from 1946 until the early 1960s, 8-13-93

110. Birmingham News, October 10, 1950 "WW II Memorial to be Located at Base of Vulcan"

111. Birmingham News, January 27, 1972.

112. Birmingham News, "Taking a Look at Vulcan", March 3, 1968. Although this editorial expresses concern for Vulcan Park, it also seriously suggests that Vulcan's exposed derriere be covered in order to put an end to the complaints of Homewood residents. Vulcan's bottom has long been the butt of serious complaints, and more humorous commentary, such as the local radio hit "Moon over Homewood".

113. Birmingham News, "Vulcan's Stairs are barrier to great sight for many", July 23, 1964; "Most famous citizen needs a sprucing up. 1/8/68; untitled, 4/10/69.

114. Birmingham News, 2/28/66.

115. Thompson, research notes for "Vulcan: Birmingham's Man of Iron": Marion Bradford's files.

116. Vulcan Park clippings file, Samford University, Birmingham, Alabama.

117. "Arrangements to put Clark minerals into monument made", and "Vulcan base to house minerals-\$50,000 collection will be installed by park board next month", two otherwise undocumented newspaper articles in Vulcan clippings file, Linn-Henley Research Library. *date?*

118. For references to the Vulcan Park layout and landscaping, refer to a copy of a Vulcan Park plan drawing by Elliot and Bradford, 7/29/70, Birmingham Historical Society Vulcan files, ~~Duncan House~~.

119. Birmingham Age-Herald, 12/15/64

120. Webster's 9th, 1988 p.261

121. John Schnorrenberg, "Vulcan, the Birmingham Colossus" September 1991. photocopy, n.p. Archives, Birmingham Historical Society, Birmingham, Al.

122. Interview with Branco Modenica, sculptor, 7-29-93.
123. George Clinton Thompson, "Vulcan: Birmingham's Man of Iron," Alabama Heritage 20 (Spring 1991): 11.
124. "Bartholdi Fountain", Office of the Capitol Curator, Washington, D.C. October, 1986.
125. United States Department of the Interior--National Park Service-- National Register of Historic Places Inventory-Nomination form for the Herman Monument, Minnesota State Historic Preservation Office.
126. Telephone conversation, Fred Moffet, Professor of Art History, University of Tennessee, Knoxville, 9/13/93.
127. Information on the Libery National Liberty statue was taken from a press release, "Eight Million More to See Miss Liberty at New Location", August 29, 1988; and an information "Backgrounder", "Liberty National Life Insurance Company's 'Miss Liberty' Statue", August 1988. In 1988, only thirty years after the raising of Liberty, forces within Liberty National felt that the growing skyline of Birmingham was obscuring their symbol, and in a case of Vulcanalian deja vu, it was proposed to move Liberty to a nearby busy highway intersection, where the statue would be placed atop a streamlined marble tower in a landscaped park. This never came to pass.
128. Telephone conversation with Leo Ward, Pottsville Pa. author of book on Henry Clay statue, 9/13/93.
129. Conversation with John Schnorrenberg, 9-14-93
130. Riedy, James L. Chicago Sculpture. Urbana, Ill: University of Illinois Press, 1981.
131. Moretti attributed his success, and the popularity of heroic monuments in general, to the impact of World War one. "Before the War, we were forced to make portraits. There was little demand for monuments. Now the heroic spirit pervades everything and the true artists may do their best work without fear of running out of vehicles for its expression." (undocumented newspaper clipping, Moretti papers, Linn-Henley Research Library.)
118. Encyclopedia Brittanica, Eleventh edition, Volume 13, Cambridge: University Press, 1910. p.305.
119. Gardiner, Ernest Arthur. A Handbook of Greek Sculpture, New York: McMillan, 1896. p.309.

120. Jones, H. Stuart Selections from Ancient Writers Illustrating the History of Greek Sculpture, Chicago: Argonaut, 1966 (originally published in 1895) p.102.

121. Encyclopedia Italiana, di Science, Lettere, and Arti, Fondata da Giovanni Treccani, Roma, 1950. p.516

122. "No Hotel for the Iron Man", Birmingham Age-Herald, April 17, 1904.

123. Fred M. Jackson, "Vulcan", in "Voice of the People", Editorial page, Birmingham News, 8-19-35.

124. Rowell, 34-38.

125. Beck, Edward, et al., "Statue of Vulcan--Report of Phase I Studies" (Birmingham, Al: Law Engineering Industrial Services, 1992). unpaginated

This report, (and phase II) were used for the technical details in this section.

126. Law Engineering report. The Law reports are short on history, and long on recommendations. Their value to this report was physical description of internal and other engineering features.

127. Conversation with Branco Modenica, 7/29/93.

128. According to Birmingham News, 3/7/68, "Park Board Eyes Vulcan Park Facelifting", architects Elliot and Bradford had proposed, in a rendering of the new park design, to sheathe the tower in a brown stone, rather than white marble. The firm also proposed that the traffic safety torch be replaced with a gas torch. Although this is no better than the "Light of Life", their proposal to place the red and green beacon with a neon strip at Vulcan's feet is a concept worth reconsidering.

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LIST OF FIGURES

All figures are from the photograph collection, Linn-Henley Research Library, Birmingham Public Library, unless otherwise noted.

1. Giuseppe Moretti, ca. 1904, with small maquette of the Vulcan statue.
2. Eight foot clay and plaster model of Vulcan. Inscription is written on the original photograph, not the actual base. This is the model that appeared in the Birmingham newspapers. It is assumed that this is the model that Moretti showed James MacKnight, and which was displayed in the Birmingham Commercial Club. Other models of Vulcan existed, including a cruder life-size version with a rougher anvil stand, more like the tree trunks from which they were made, and with pincers and hammers leaning on it, another historical iconographic feature.
3. Head of Christ, Guiseppi Moretti, 1904. Sylacauga (Alabama) marble, Life size, Present location, Alabama Department of Archives.
4. Patternmakers posing with Moretti (wearing dark suit, in center) in Passaic, New Jersey church where patterns were made.
5. Passaic; pattern from feet to waist, before cutting into sections.
6. Sectional pattern being erected in Birmingham Steel and Iron Company yard.
7. Vulcan's head before assembly on Red Mountain. Mold lines are clearly visible.
8. Palace of Mines and Metallurgy, St. Louis Centennial Exposition. Photographic Views of the Universal Exposition, Introduction by Walter B. Stephens, St. Louis: N.D. Thompson Publishing Company, 1903.
9. Vulcan at St. Louis, in the Palace of Mines and Metallurgy. Source unknown, but this image appears to be a doctored, and much clearer version of a photograph that also appears in Bennitt, Mark, History of the Louisiana Purchase Exposition, St. Louis: Universal Exposition Publishing Company, 1905. p.343.
10. Vulcan at St. Louis. Source unknown. Note two hammers, "Prophecy" plaque.
11. Vulcan at Alabama State Fairgrounds, Birmingham, Alabama. Note reversed right hand, and anvil to the rer, rather than at the side.
12. Vulcan at the Fairgrounds. Note ice cream cone in left hand.

13. Vulcan at Fairgrounds.
14. A synopsis of the Depression-era Vulcan cartoon series. Birmingham Age-Herald, 1939.
15. Vulcan Park pedestal under construction. Note concrete frame construction at base of pedestal.
16. Vulcan lying in pieces at Vulcan Park, prior to assembly. Note figures for scale.
17. Vulcan's leg and hoisting crew, November 1937. Man in white coat, incorrectly referred to as Moretti in several sources, is former Birmingham Mayor Jimmy Jones.
18. Vulcan atop the pedestal, with 'Light of Life' traffic safety torch.
19. View of Birmingham from Vulcan Park overlook.
20. View of Vulcan Park from adjacent transmission tower, taken with telephoto lens to make downtown Birmingham appear closer than it is. As Vulcan has torch, photo was taken after 1946
21. Aerial photograph from approximately the same position as No. 20, but at an earlier date. Smoky industry in the distance at right is the Sloss City Furnaces, where the pig iron that went into Vulcan was made.
22. Entrance to old Vulcan Park pedestal. Wrought iron gates honor J. Mercer Barnett, Birmingham Kiwanian who assisted with the creation of the park. Gates can be seen at the Birmingham Kiwanis offices, Harbert Center, Fourth Avenue, Birmingham. From Birmingham's Vulcan, a 1938 Vulcan Park Promotional pamphlet published by the Birmingham Kiwanis.
23. Vulcan in pieces on Red Mountain, prior to assembly. Note dark paint on joint surfaces.
24. Vulcan on pedestal soon after installation. Note speartip in right hand.
25. Vulcan copy. Note that the traffic safety torch, and not the original speartip, has been carried over to this copy of Birmingham's iron man.
26. Vulcan and radio towers. The present transmission towers are far higher than those in this pre-1970 view.

13

THE RED GAP BRANCH OF THE BIRMINGHAM MINERAL RAILROAD
(including the portion currently being developed as "The Vulcan Trail" which extends from
Vulcan Park past Valley View Mine to George Ward Park)

AN HISTORICAL REPORT

Prepared by Marjorie L. White, Birmingham Historical Society

January, 1994

DESCRIPTION

The abandoned Birmingham Mineral Railroad right-of-way extends along the northern face of Red Mountain, overlooking Jones Valley and the Birmingham metropolitan area. Eastward from Vulcan Park at 20th Street (the Old Montgomery Highway-US 31), the rail bed passes the former Valley View Mine site, now property of The Club, and proceeds to a point near George Ward Park. This c. one mile route currently serves as a utility corridor and informal hiking and recreational trail.

SIGNIFICANCE

The Red Gap Branch of the Birmingham Mineral Railroad, a 10.2 mile spur line, was constructed in 1889 by the L & N Railroad as part of a 156.22 mile system linking mines and mills in the Birmingham District. The Red Gap Branch transported Red Mountain's red iron ores from mining operations along the mountain to iron-producing furnaces in Jones Valley and across the industrial District. This instant delivery system provided the District a competitive edge which helped it become the nation's premier foundry iron producer from the 1890s through the 1960s.

HISTORICAL OVERVIEW

To access the vast red ore reserves of Red Mountain, from 1884 to 1890, the L.& N. Railroad constructed several segments of the Birmingham Mineral Railroad to connect the mountain's mining operations, which by the early twentieth century, stretched 16 miles from Trussville to Bessemer closely proximate to furnaces and industrial plants. Earliest segments of the Red

Mountain line had been constructed, beginning in 1884, further to the west where the richest ores were located. Construction of the Red Gap Branch, in an area of leaner ore reserves, began in July 1889. At completion, the 156.22 mile loop connected not only the ore, but also nearby coal mines to mills in the Birmingham vicinity. The L.& N. had invested \$6,000,000 in this project. Since each ton of iron required about two tons of ore, construction of the Red Mountain track to serve nascent mining industries, including furnaces at Bessemer, Woodward, Ensley and Thomas with which the L & N had obtained exclusive contracts to transport minerals, is understandable.¹ The flood of raw materials that converged upon the Birmingham District helped double its pig iron production between 1886 and 1888.² The L & N also froze out other competitors and established a regional monopoly in mineral transport.³

The 10.2 mile Red Gap Branch extended from Red Gap Junction, near the current site of Eastwood Mall, to Grace's Gap where it intersected the L.& N. mainline, at the Republic Steel Company's former Spaulding mine, now West Oxmoor. The Red Gap Branch followed the south side of Red Mountain from Red Gap to Hedona (now the site of English Village) to Lone Pine Gap at 20th Street (US Highway 31) where it crossed to the north slope of the mountain. From Lone Pine Gap at Vulcan Park it passed Valley View Mine enroute to Magella at Grace's Gap. At Grace's Gap the line connected to another segment of the Mineral Road which extended north and south branches westward to Bessemer encircling Red Mountain and the richest mines at Ishkooda, Wenonah, Sloss, Woodward and Muscoda.⁴

The Red Gap Branch included the following stations, many of which are located at ore mines operated by relatively small District producers in the early years of the century: Red Gap Jct., 393a, North Arena, 394, Arena, 394a, Hammond 394b, Huron 395, Wilkomont 395a, Dago 396, Helen Bess 397, Kewanee 397a, Hedona 399, South Hedona 399a, Red Mountain Park 399b, Lone Pine 400, Hobson 400a, Valley View 400b, Green Springs No. 1 401, Green Springs No. 2 401a, Graces 404.⁵

The Red Gap Branch crossed Red Mountain at 20th Street, just east of today's Vulcan Park. The 20th Street crossing for vehicle traffic crossing Red Mountain was originally at a very steep grade. In 1910 highway engineers excavated a **72' cut** to reduce the grade and facilitate passage of automobiles and the 39 Edgewood streetcar line. Begun in 1909 to promote residential developments in Shades Valley to the south of Birmingham, this, the first successful "over the mountain" streetcar line reached Edgewood Lake, now Lakeshore Drive near Green Springs Highway, by 1912.⁶ At the Red Mountain pass, a **50 foot long girder bridge** carried elevated rail traffic above the highway grade for the next twenty years. In the early 1930s widening of the road way and enlargement of the cut led to removal of the tracks and the Mineral Railroad overpass.⁷ **Abutments for the bridge remain today on the eastern side of the cut. The railbed on the western side of the cut formed the ballast for northernmost pedestrian staircase/entrance to the WPA era Vulcan Park constructed c. 1937.** Due to diminished mining and freight activity along this segment of the Mineral Railroad, the L & N abandoned the portion of the line extending from Vulcan Park to Graces Gap in 1933.

From 20th Street, the Red Gap Branch proceeded west, past the Valley View Mine, to Grace's Gap and the most intensively mined areas of the mountain which extended from Oxmoor to Bessemer and remained active into the late 1950s and 1960s. From the early 1900s to 1924, Birmingham Coal and Iron Company operated Valley View Mine to supply its furnaces and pipe foundry at Holt, on the Warrior River just north of Tuscaloosa.⁸

The Birmingham Mineral Railroad was an industrial line. It operated passenger service in the Oxmoor and Bessemer area, but not over the Red Gap segment. In 1889, the year in which the railroad was constructed past Vulcan and Valley View mine, a **50-pound rail** was laid to **standard gauge** (4.8 feet wide).⁹

Depots on the Mineral Railroad, at the time of the 1917 valuation project, included several **Type IV frame depots** at Readers, Sloss, Wenonah and Woodlawn and **Type I passenger shelters** at Spaulding Junction. **Boxcar bodies** were also used as makeshift shelters at Graselli, Ruffner, and Trussville. **The Birmingham Mineral Railroad's Woodlawn Depot remains at 6501 First Avenue South.**¹⁰

Cypress water tanks, 24' diameter and 16' high on timber towers with capacities of 50,000 gallons each, were located at three locations along the Mineral Railroad until the removal in the early 1920s and 1933.¹¹

Equipment used to transport ore from Red Mountain to the furnaces, described in an L & N fiscal report for June 30, 1915, included 95 single hopper cars and 1810 double hopper cars. Of the double hopper cars 400 were of steel underframe construction, the remainder being wooden cars, of which 288 were of the old type with capacity of 60,000 and 65,000 pounds. The single hoppers were all of the old type with an 18 foot inside length.¹² A 1900 Republic Steel Company photograph pictures incline mines and a wooden L & N hopper car.

Neither description nor photographs of engines used to haul the ore trains along this, or any, segment of the Mineral Railroad have been located. James H. Wade, a former resident of Tarrant City, who is an authority on historic railroad engines, suggested that the L.& N. extensively used **consolidation type engines, class H23 and H25, of the 900, 1000, 1100 series** in the period 1906 to 1924 when ore was being hauled along the Vulcan to Valley View segment, and possibly also moguls. Historic images of consolidation type engines exist in the local collection of Frank Ardley, who photographed them in the 1940s at the Boyles Yard. No photo documentation of the mogul engines is known as the L.& N. scrapped most of those engines during the late 1920s.

The segment of the Mineral Railroad extending from Grace's Gap to Valley View Mine closed in 1933. Mining at Valley View had stopped in 1924, however as the Birmingham Coal and Iron Company, the company that owned the mine, wanted the option to reopen this mine at some future date, the L & N did not remove the track extending from Valley View eastward to Hedona, at English Village, until 1943.¹³ In 1946 residents of Lanark Road,

distressed with the construction and rail activity in the English Village area, filed suit for noise and dust abatement. L.& N. rail service to that area from Red Gap continued until April 10, 1954 when the last segment of the Red Gap Branch was retired. In the 1960s, a development scheme suggested that this right of way be converted to monorail line that would connect the City's two major visitor attractions, Vulcan Park and the then Jimmy Morgan (now Birmingham) Zoo. Ore mining on Red Mountain phased out in the late 1950s and 1960s. Wholesale abandonment of the Mineral railroad trackage in the Wenonah-Ishkooda area began c. 1974 and informal use by area residents as hiking and motorcycle trails increased.¹⁴

In 1979, the Five Points South neighborhood with the support of the City of Birmingham, commissioned the local landscape firm of Charles W. Greiner & Associates, Inc. to plan a public trail along the abandoned right-of-way extending from Vulcan Park to Greensprings Highway. The trail as envisioned would provide "a unique combination of cultural, educational, and recreational activities and experiences." Opportunities for development included: 1. enlargement of existing Vulcan facilities; 2. the spectacular view of the City of Birmingham and its surroundings; 3. The relatively undisturbed natural areas, with indigenous flora and fauna; and 4. the historic significance of the abandoned mines.

The envisioned "Vulcan Trail" would accommodate pedestrians, bicycles, joggers, wheelchairs, and utility maintenance vehicles. The 14' wide trail, across the 50' right-of-way, would be composed of an 8' lane of asphalt and a 6' lane of crushed, finely compacted

limestone, edged by a 6" concrete curbs. At activity areas (observation platforms, information kiosks, exercise stations) the trail would be bordered by railroad ties. The plan projects acquisition and interpretation of the Valley View Mine site ruins.

This 16-page, four phased plan projected costs for land acquisition and development of 1.2 million.

In 1993, the City of Birmingham submitted this plan to the Alabama State Department of Transportation and received ISTEA funding, which with a City of Birmingham match is financing the current planning efforts under the direction of Nimrod Long & Associates, Landscape Architects, Birmingham, for whom this research report has been prepared. The Historic American Engineering Record-National Park Service historians and architects have proved additional research reports and large-scale interpretive maps of the original WPA Vulcan Park and the Valley View mine site.

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ENDNOTES

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2. Klein, 270.
3. Klein, 270.
4. 1917 Map in R. Lyle Key, Jr., "Birmingham Mineral Railroad's Red Mountain Route," 1988, 5-6.
5. Atkins, 19. The published Red Gap table also lists the clearance length of sidings.
6. Hudson, Alvin and Harold Cox, Streetcar Railways of Birmingham, 127.
7. Hudson and Cox, 129; R. Lyle Key, Jr., 5.
8. Armes, Ethel. The Story of Coal and Iron in Alabama and Birmingham Deluxe, 1910 provide visual images of the early drift mines and later slope mine at Valley View, now located under The Club; Butts and Burchard, U S Geological Survey, 1910, provides description and images of both the early mines and the slope mine.
9. Herr, 52.
10. R. Lyle Key, Jr., 6; Field Visit, 1/24/94.
11. R. Lyle Key, Jr., 7.
12. Typescript courtesy Bob Yuill, Norfolk Southern Steam Restoration, Norris Yards and Mark Brown, HAER historian, summer 1992. L & N Collection, University of Louisville.
13. It was, however, impossible to access the mine from the east as the railroad bridge at 20th Street had been removed due to widening of the roadcut and an entrance to Vulcan Park. Before removal of all trackage accessing Vulcan Park, transportation for the 70-ton iron statue to its current Red Mountain site was necessary along a small portion of the rails. (Rowell,44).
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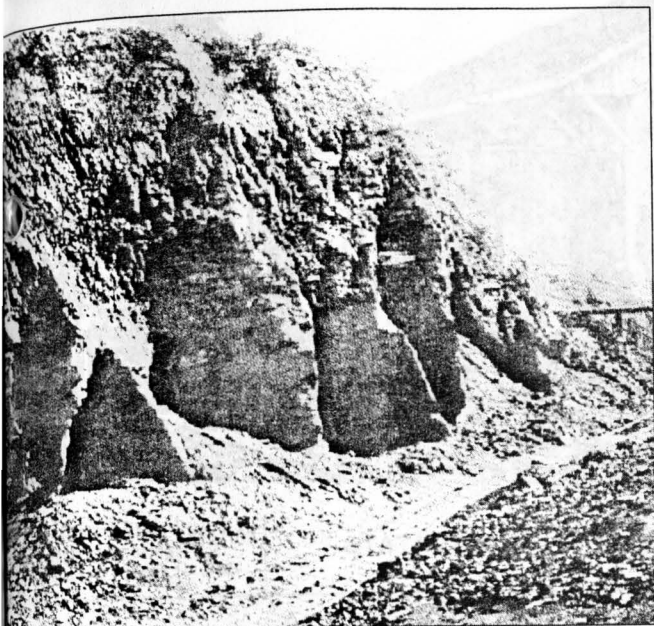
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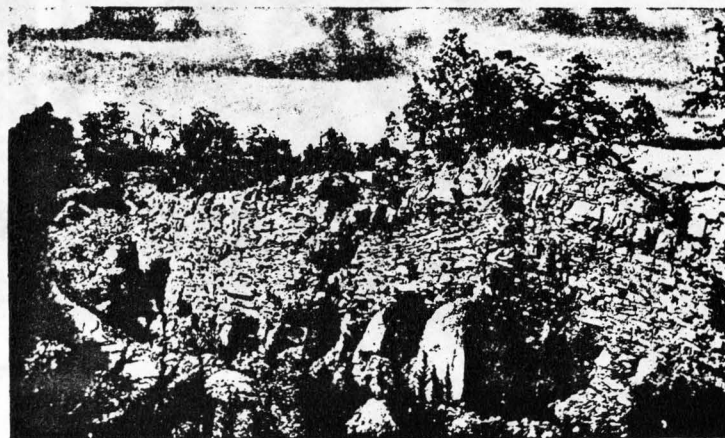
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3. Delivery of ore to L & N, c. 1900, Republic Company Scrapbook.
4. Mining near Eastwood Mall, c. 1900, Department of Archives and Manuscripts, Linn-Henley Library.
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11. North incline at Valley View Mine showing drift headings in open pits, Illustration in Otis Clarke, Birmingham Red Iron Ore.
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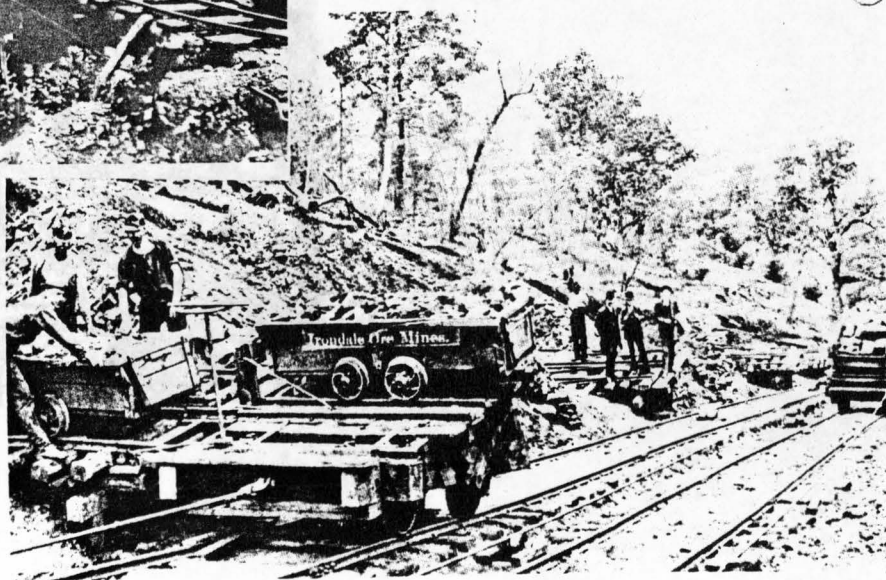
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Iron Ore Is Shipped To City For The First Time In History

BY ROBERT W. KINCEY

News Staff Writer

Birmingham had an entirely new experience today.

For the first time in its history iron ore was brought from without the state to food the hungry blast furnaces of the Tennessee Coal, Iron & Railroad Company at Ensley and Fairfield.

The initial shipment arrived here over the Illinois Central System from Chicago after a boat trip on a Great Lakes steamer.

The approximately 250,000 tons will require 5,000 cars to transport and will mean the movement of around 100 trains from Chicago to Birmingham, officials of the I. C. reported.

Some idea of the value of the cargo and of the urgency of the need is seen in the fact that transportation costs alone will approximate \$750,000.

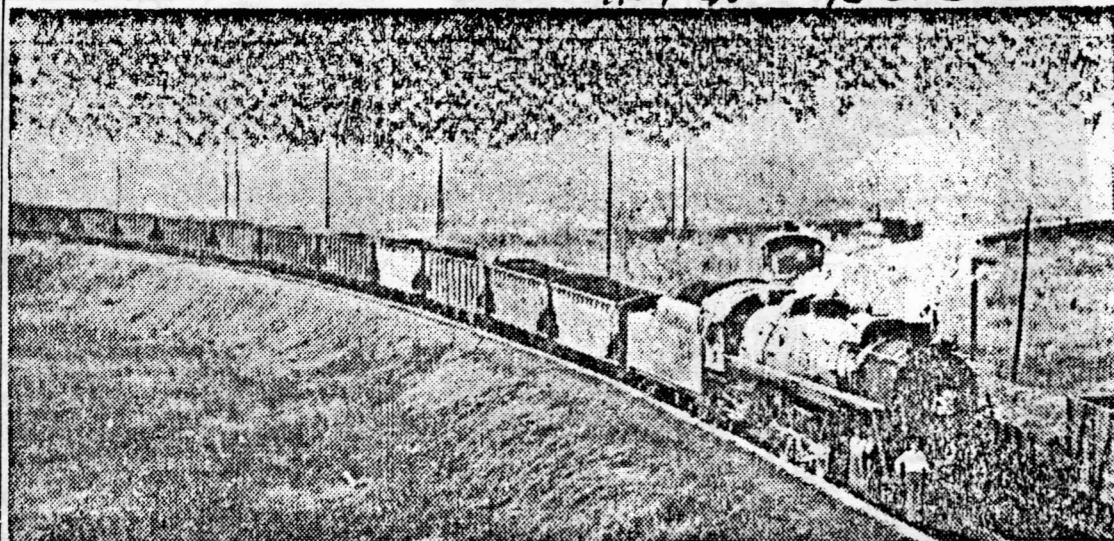
IMPORTATION OF THE MINNESOTA ore was necessitated by an acute labor shortage in the red ore mines of the Tennessee Company which urgently needs not less than 1,300 additional men at once, Robert Gregg, president of the company, said.

"We have ample reserves of ore stored away in Red Mountain and ample facilities for the mining of that ore," Mr. Gregg said, "but we have not been able to recruit sufficient manpower to do the job."

The men at work at the company's red ore mines have done and continue to do an excellent job, company officials declared. Their zeal to make a creditable showing is all that has prevented earlier purchase of ore from outside the state, but there simply is not enough of them.

T. C. I., along with the district's other major industries, are heavily booked on civilian production. Orders in some instances are heavier than they were in the peak of the war emergency.

Tennessee Company's overall manpower requirements will approximate 3,000 men, including the manufacturing and other divisions, while many other industries of the district report inability to obtain workers needed to fill current contracts.



COAL TO NEWCASTLE? HERE'S A NEW VERSION—The first of approximately 100 trainloads of Minnesota iron ore moves into the Pittsburgh of the South.

Smith Sings"

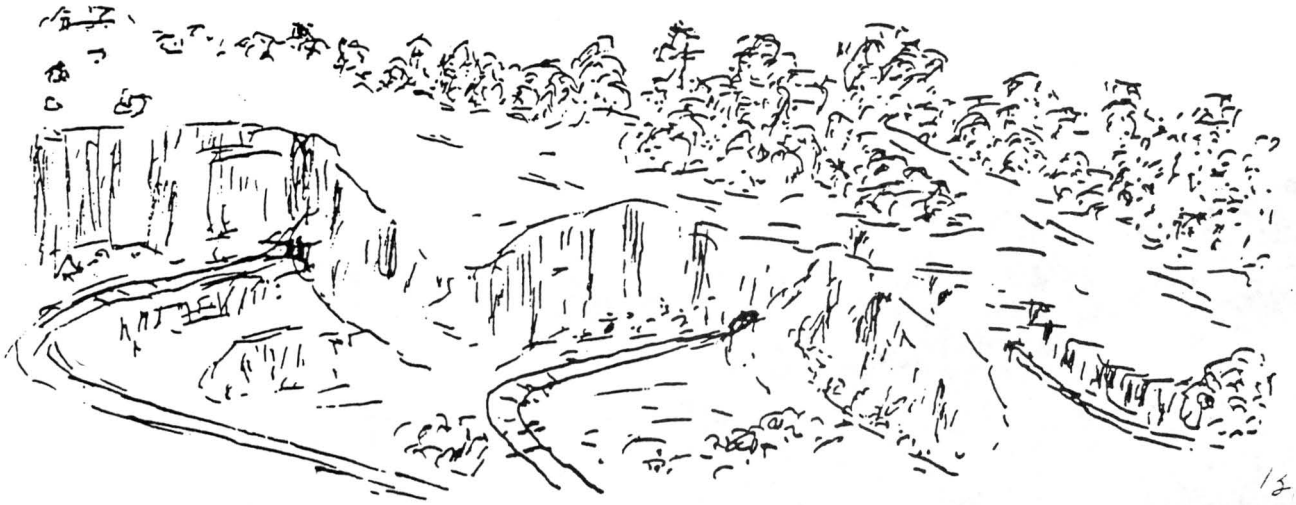


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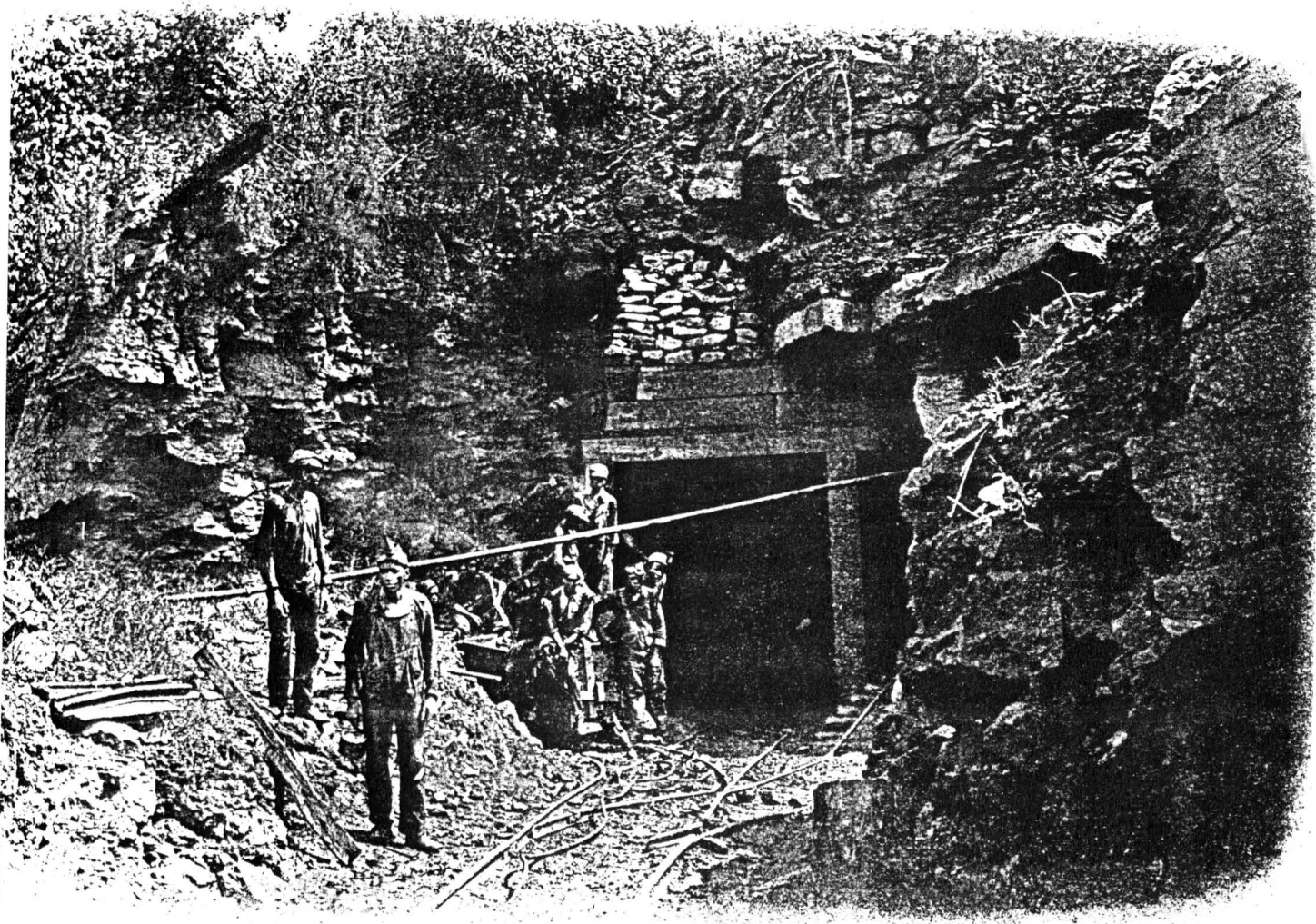


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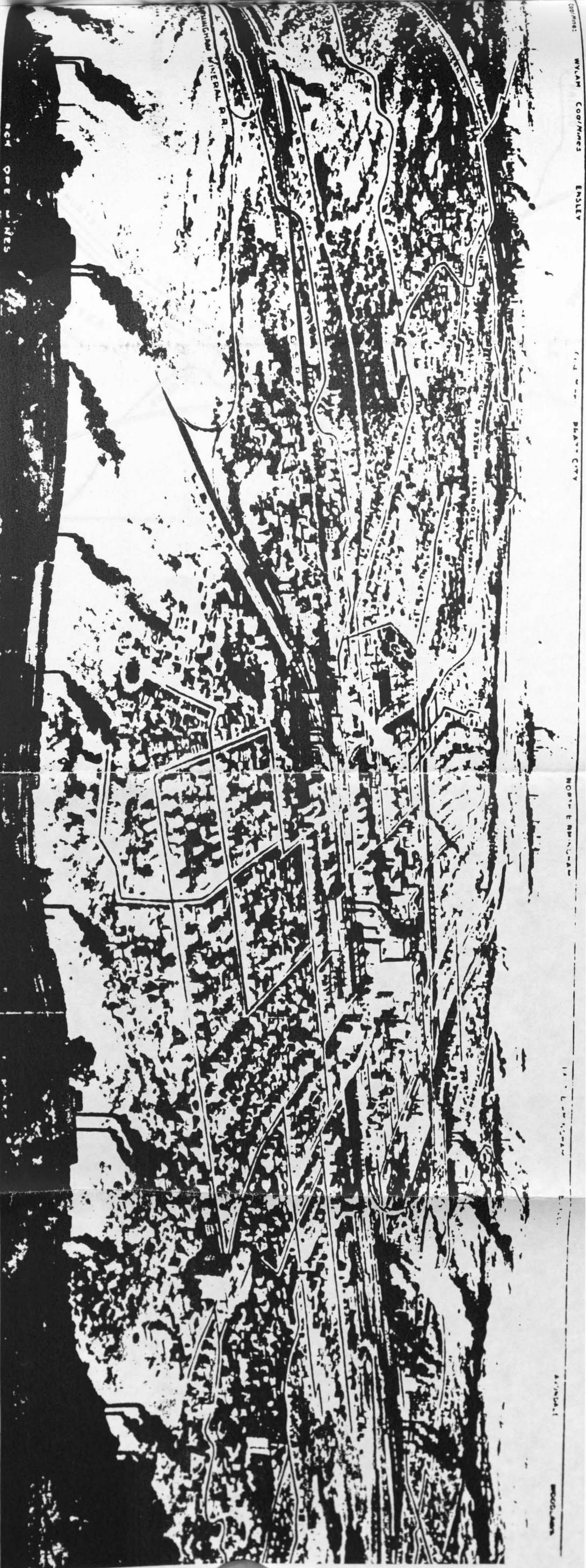


mouth of slope of TCI's Alice Mine, c. 1910. (*United States Geological Survey Bulletin 400*)

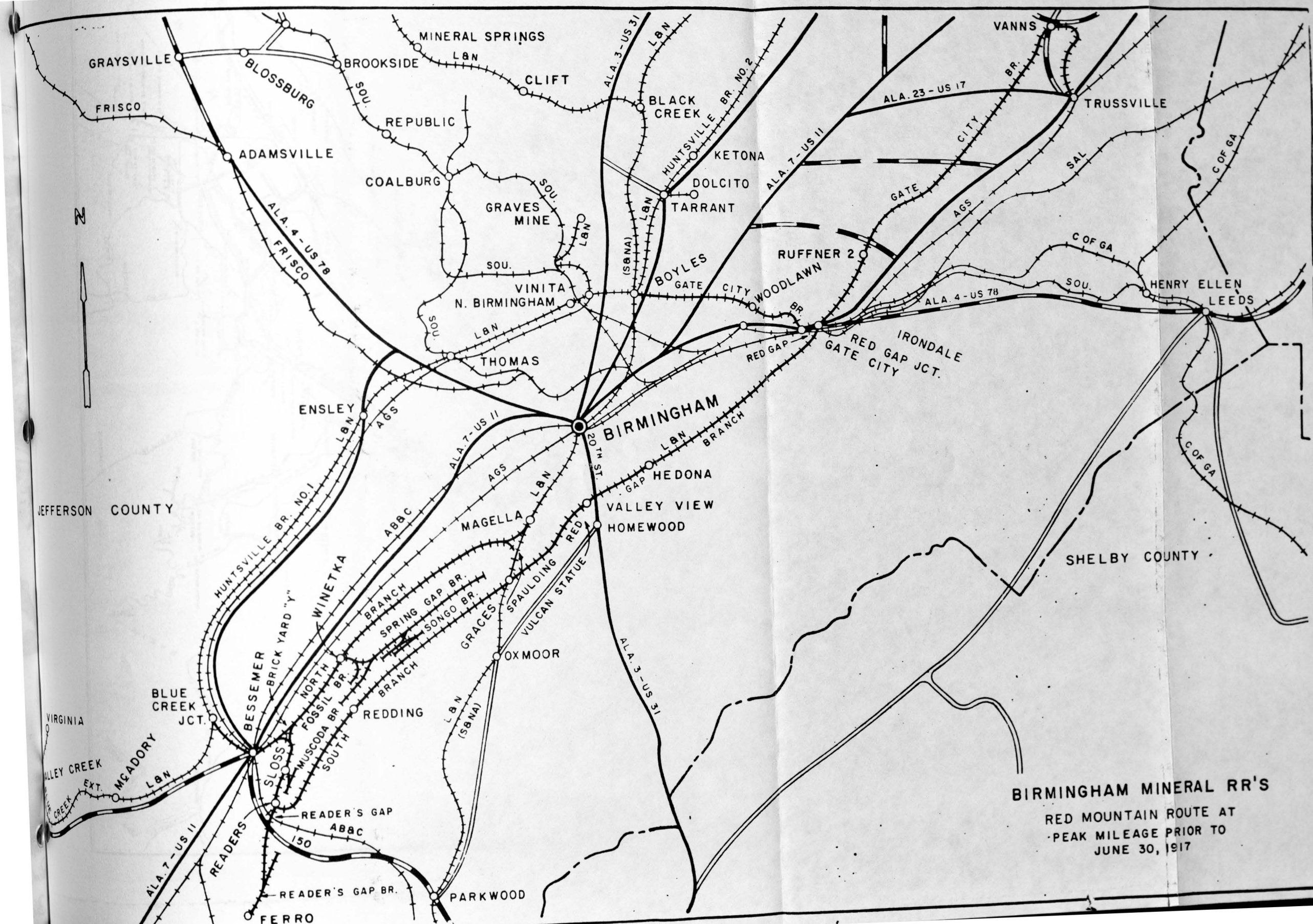


mountain seen from Grasselli, Alabama, showing the four slope mines of TCI's Fossil group, open-cut strippings and location of ore-carrying Mineral Railroad. (*United States Geological Survey Bulletin 400*)

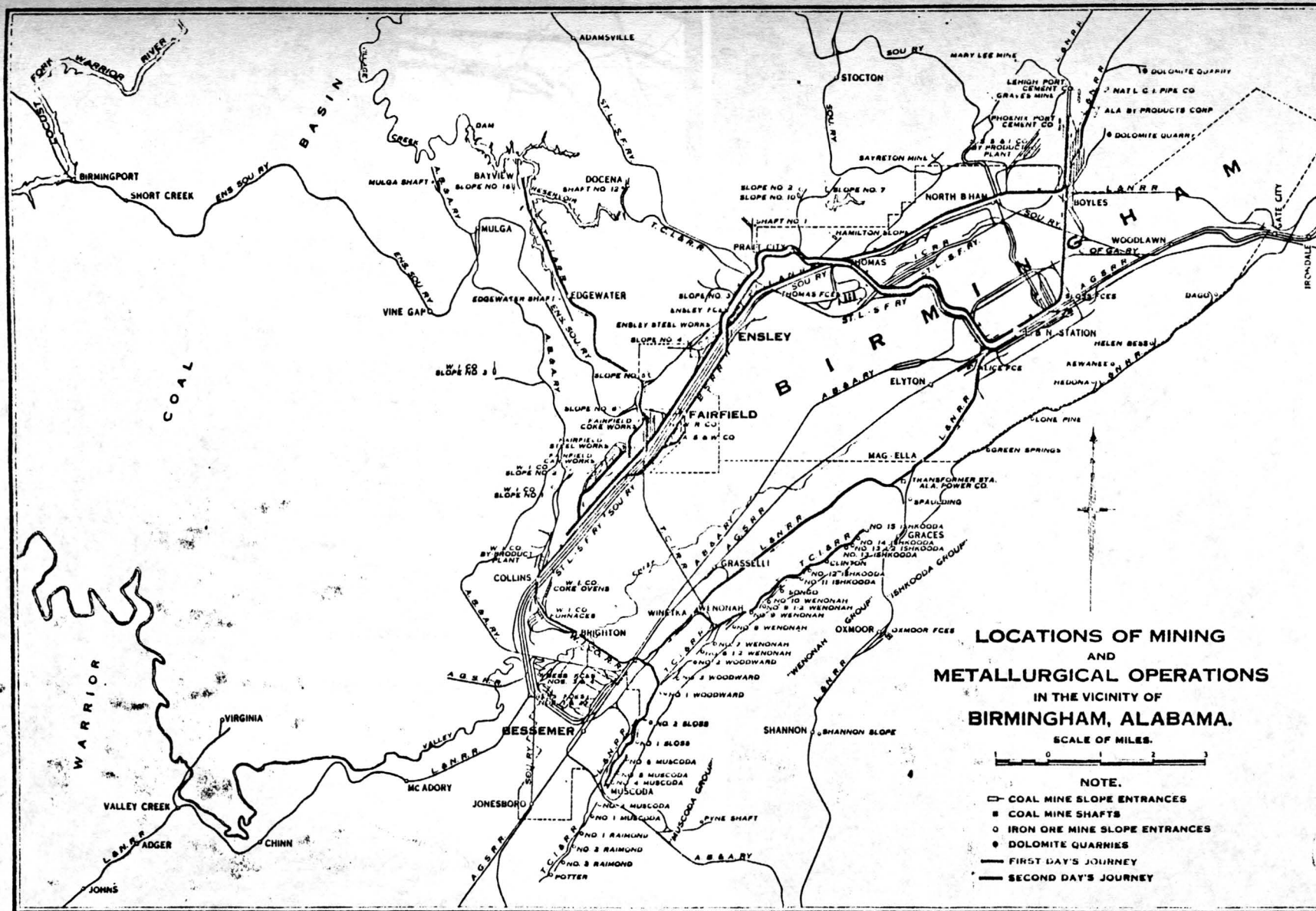
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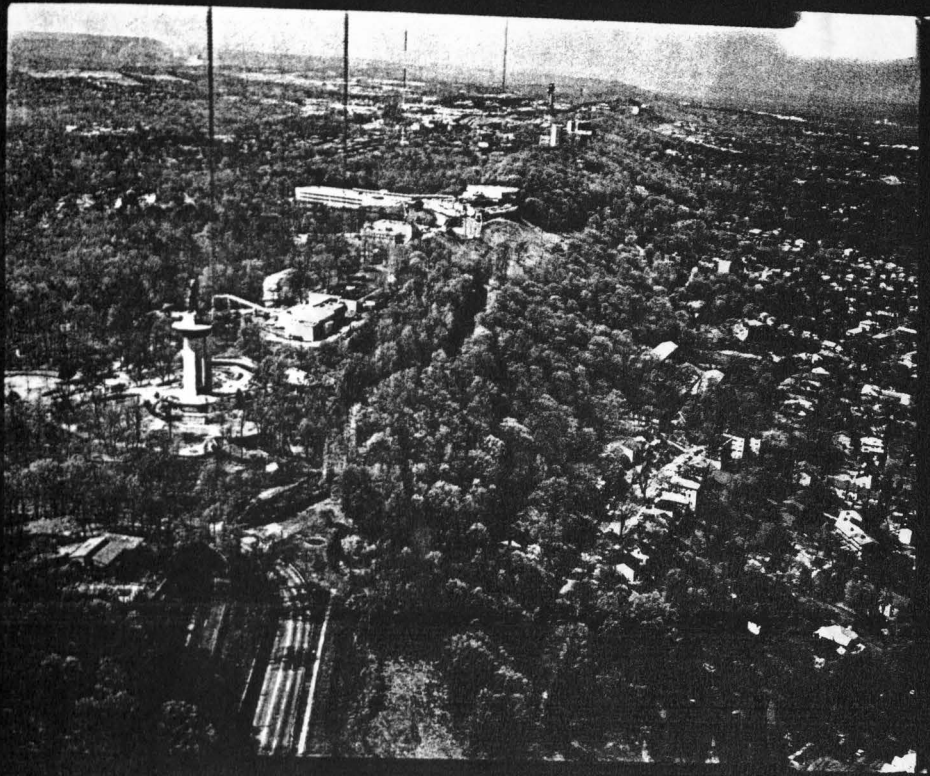


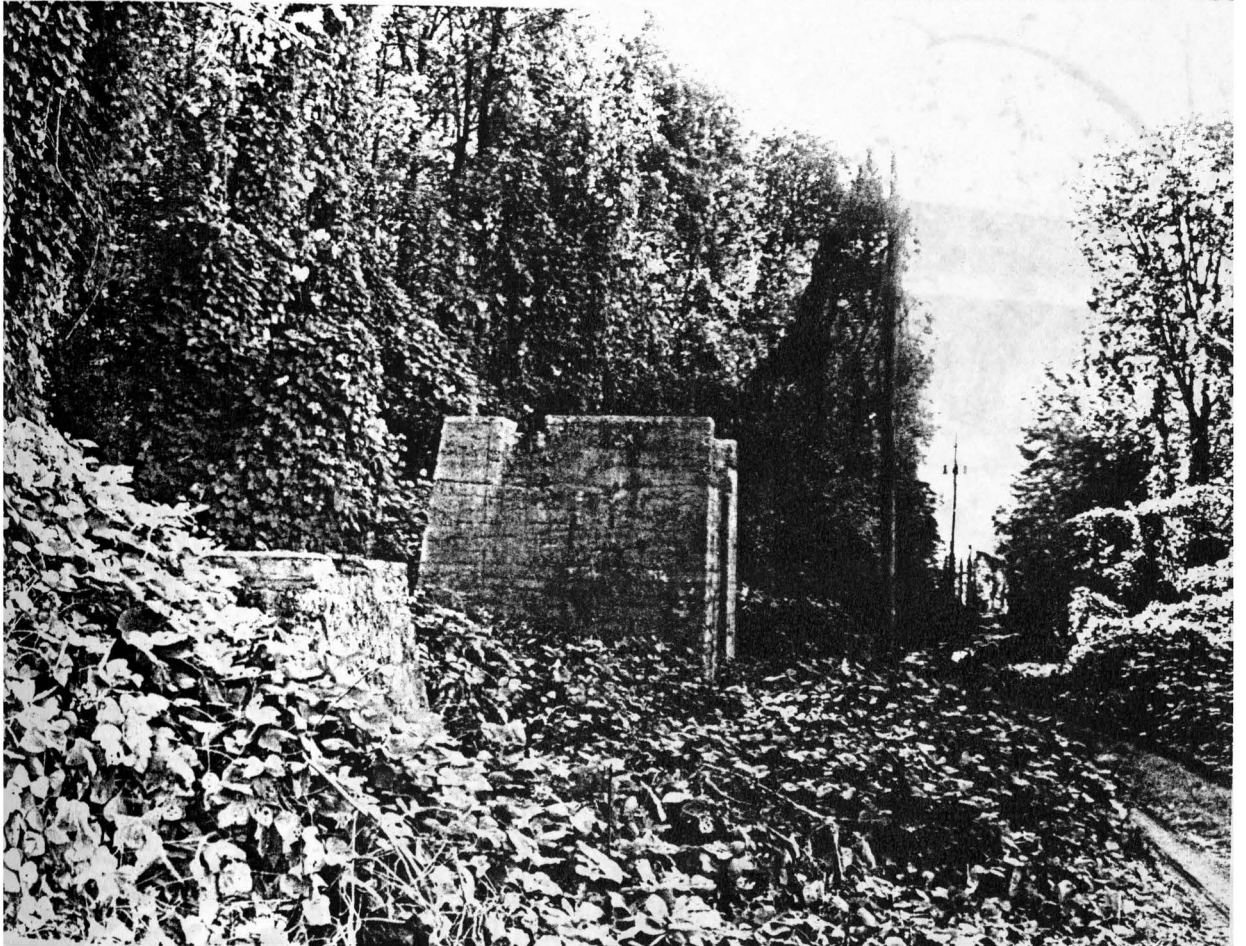
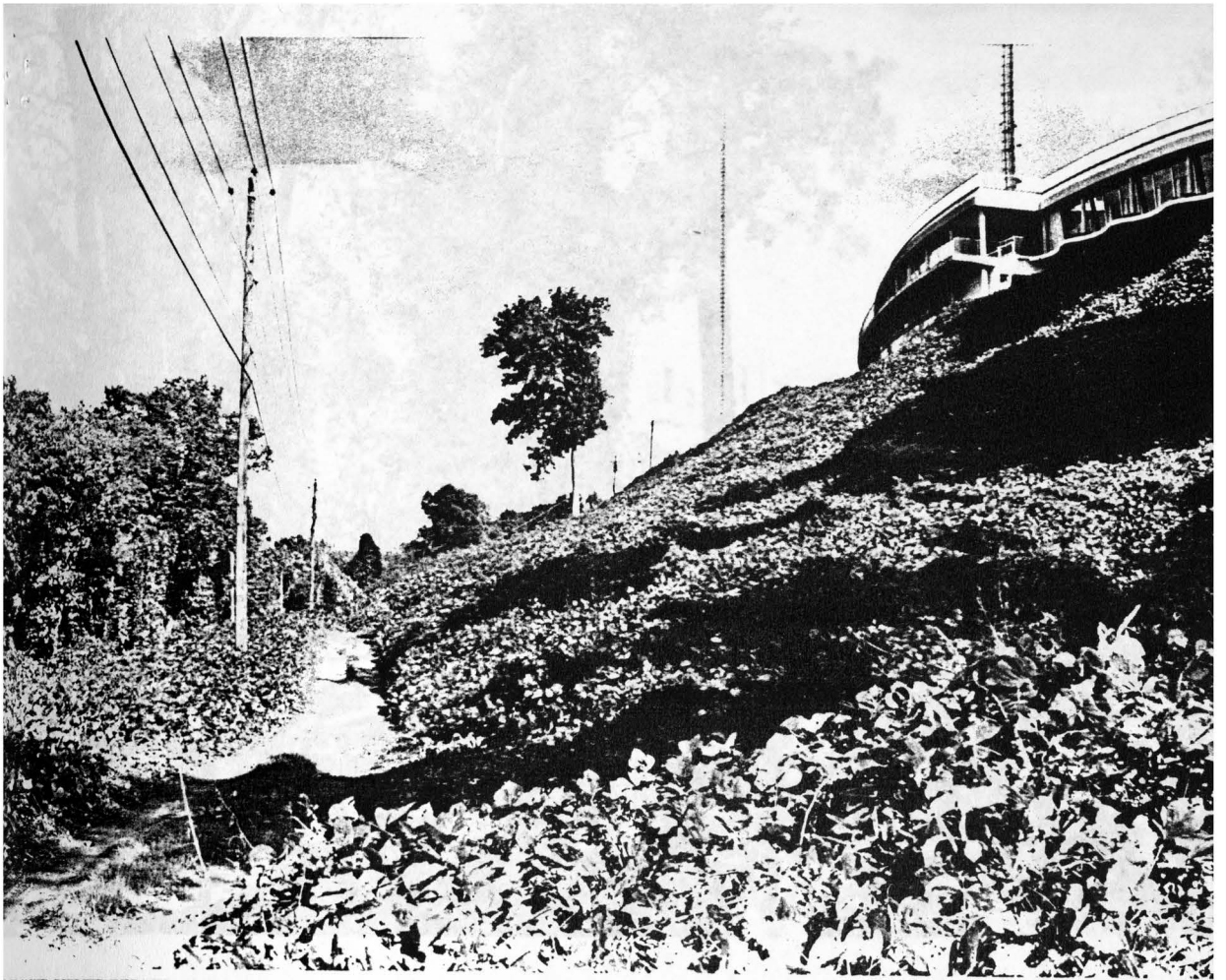
Miss-Northrop
Mid-Eye View of
Birmingham District
1919



BIRMINGHAM MINERAL RR'S
RED MOUNTAIN ROUTE AT
PEAK MILEAGE PRIOR TO
JUNE 30, 1917

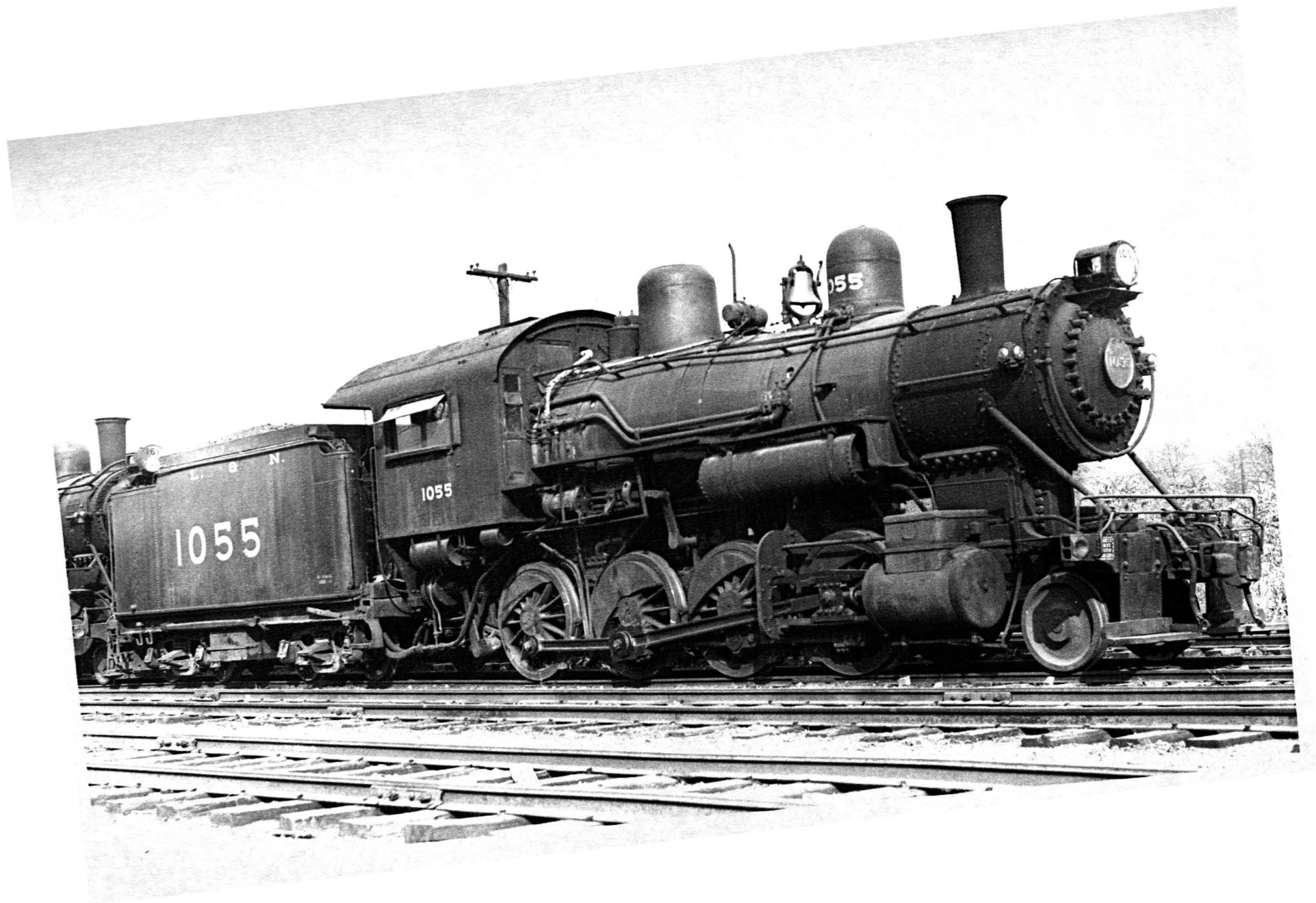












HISTORIC NAME L. & N.-Birmingham Mineral Railroad
CURRENT NAME L. & N.-Birmingham Mineral Railroad Trail
LOCATION Red Mountain
CITY Birmingham, Bessemer
COUNTY Jefferson
ACREAGE
OWNER

TYPE Landscape
DATE OF CONSTRUCTION 1880s-1920s
BUILDER/ARCHITECT/ENGINEER Multiple

DESCRIPTION

The roadbed of the mineral railroad extends from Irondale, at Ruffner Mountain, to Bessemer along the southern and northern flanks of Red Mountain. Certain sections such as the routes through Ruffner Mountain and from Vulcan Park to Green Springs Highway currently serve as trails. The entire roadbed needs further exploration and delineation.

HISTORICAL OVERVIEW

Under the aggressive leadership of Milton Smith, traffic manager and later president, the Louisville & Nashville (L. & N.) Railroad constructed a 156-mile loop encircling the city of Birmingham by 1888 connecting furnaces and industrial plants and sources of raw materials. By 1889, the Red Gap Branch extended 10 miles from Graces Gap at the Eureka-Ishkooda & Spaulding Red Ore Mines to Red Gap Junction at Irondale. With later additions, the loop extended the entire length of Red Mountain from Irondale to Bessemer and also linked mines to furnaces and industrial plants in the valley below.

SOURCES

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Klein, Maury, *History of the Louisville and Nashville Railroad*, McMillan, New York: 1972

DESCRIPTION CONTINUED

Sites along the roadbed of the L.& N.-Birmingham Mineral Railroad:

Ruffner Red Ore Mine No. 1 & No. 2 (1887)

Ruffner Mountain Nature Center

The Ruffner No. 1 ore mine site consists of three visible stone foundations and the remnants of a slope opening. Covering between five and ten acres, the foundations appear to also include a sheave tower, steam hoisting foundation and an ore crusher.

The Ruffner No. 2 site covers perhaps as much as 30 acres and contains an array of widely scattered structures and foundations. The most striking and concentrated

assemblage is located near a remaining ore crusher. Adjacent to the crusher are the remains of an ore handling plant. At another location two small buildings, possibly separate blasting cap and explosives storage facilities, remain. At another location a small hoisting sheave foundation is evident. In addition the slope opening is still visible as well as numerous drift openings which extend up and down area ravines.

Helen Bess Red Ore Mines (c. 1863-1910s)

Timberlane Apartments
Near Timberlane Drive

Red Mountain Cut and Geological Walkway (1969)

1421 22nd Street South

Vulcan Park, including Statue of Vulcan and Red Ore Mine

Atop Red Mountain on Vulcan Road

Vulcan-Louisville & Nashville (L. & N.)-Birmingham Mineral Railroad (1889)

Vulcan-Mineral Railroad Hiking Trail

Extending from Vulcan Park three miles eastward to Green Springs Highway

This three mile former trackage, extends eastward along the crest of Red Mountain passing several former red ore mine openings and overlooking Jones Valley and the greater Birmingham area.

Grace's Gap

Spaulding-Ishkooda Road at Montevallo Road (JC 95)

Spaulding Sintering Plant, Red Ore Mine Site (1887; 1935)

East side intersection of West Oxmoor-Montevallo Road (JC 95) and Spaulding-Ishkooda Road (JC 66)

Eureka Red Ore Mines No. 1 & No. 2-Ishkooda-TCI Nos. 13 and 14 (1862, 1862, 1872, 1872)

U.S.X.-Oxmoor Industrial Park

The original Eureka Red Ore Mines (later Ishkooda Nos. 13 and 14) sites, covering about 20 acres, include a well-preserved portal building with intact basement and extensive foundation work. Concrete pier work is found at both sites.

Ishkooda-TCI Camp (1900s-1920s)

East of Powderly Road (JC 66)

This community of worker housing spreads out through the valley but below the mineral railroad bed.

Woodward Red Ore Mines No. 1 (c. 1883)

Off 3rd Place and Dartmouth Avenue
Bessemer

Woodward No. 1 is located on about a five to ten acre site at a small gap in Red Mountain. Remnants of the slope opening are visible. Other foundation remains extend back from the slope along the bed of a small hollow. These remains include a combination tippie and crusher c. 30 feet high constructed of poured concrete and a timber sheave frame.

Woodward Red Ore Mine No. 3 c. 1883)

On Red Mountain
Bessemer

Woodward Red Ore Mine No. 3 site consists of a concrete and brick foundation remnant located immediately to the fore of a probable slope opening no longer visible. The foundations of other structures are located approximately 100 yards aft of this opening in dense overgrowth.

Wenonah-Fossil Red Ore Mines (est. 1887-)

Wenonah-Ishkooda Road
Wenonah

Wenonah-TCI Superintendents/Foremen/Clerks Houses (1903, 1904, 1905)

1116, 1118, 1120 Wenonah Terrace
Wenonah

Wenonah-TCI Black Quarters (1917-1918)

New Hill Circle, Court and Avenue
Wenonah

High-Line (1925)

Extends from site of TCI-U.S. Steel's Wenonah Sintering Plant on Red Mountain to the Fairfield Works, Fairfield

This historic transportation route originally transported red ore and furnace burden from TCI-U.S. Steel's Red Mountain mining and processing operations to its furnaces at Fairfield.

Wenonah-TCI Sintering Plant (c. 1924)

Wenonah-Ishkooda Road (JC 66)
Wenonah

Originally used for the processing of red ores for furnace burden, this site is currently under demolition for scrap. Concrete crusher operation remains in a state of partial

demolition. Red ore mining closed in 1962 at Wenonah. This facility remained active through the 1980s.

Wenonah-TCI-U.S. Steel Raw Materials Division Office (1938)

Wenonah-Ishkooda Road (JC 66)

Wenonah

A showcase of steel technology, the one-story structure was faced with porcelain-enameled steel panels and had steel-bar roof joists covered with steel-deck insulation material, tar and gravel.

Sloss Red Ore Mine No. 1 & No. 2 (c. 1882)

On Red Mountain

Bessemer

The Sloss Red Ore Mines Nos. 1 and 2 contain fairly extensive remains scattered over about 20 acres. The most striking feature is the portal at No. 2 slope. In front of the portal are wooden trestle remains, concrete piers and the hoist house foundation. Similar, but less well-preserved, remains are found to the front of the No. 1 slope.

Muscoda Red Ore Mining Community (1902-1909, 1917-1918)

At Readers Gap to the east and west of AL 150

Bessemer

The Muscoda community is situated along the crest and slopes of Red Mountain just south of Bessemer and just north of TCI's former red ore mines, the largest in the Birmingham District. The community is composed of several distinctive sections including a row of seven two-story frame superintendent residences along Minnesota Avenue at the crest of the mountain. Along and to the south of Minnesota Avenue and nearest the mine headquarters is a section of 16 mining foremen's residences. To the west across Readers Gap is a section of 115 four-room square top and bungalow style worker houses, originally divided into black and white sections. As mining operations expanded during World War I this area housed white miners and additional company housing for blacks was built on the southern slopes of Red Mountain in geographically separated sections known as "New Camp" and "New (or Borah) Village." New Village includes 69 six-room frame duplexes, known locally as "double three room" houses.

The Muscoda community still includes numerous company-built community facilities, including two schools (one for blacks and one for whites), a teachers' cottage, a Social Science Building now a residence, a church, a doctor's house and a medical dispensary (now a church). Five brick mine headquarters buildings also remain as well as substantial foundation materials at Muscoda mine sites on the southern slope of Red Mountain. A power house and head frame for the mine hoist also remain.

Muscoda-TCI Red Ore Mine Headquarters Buildings (1903-1940)

South of Minnesota Avenue, to east of AL 150
Bessemer

Structures remaining consist of a brick supply house (1903), a brick shop building (1903), a safety hall (1940), an electric shop, and a privy and bath house with entrances for white and black workers. Several industrial enterprises currently occupy the site.

Muscoda-TCI Red Ore Mine No. 5 & 6 (1890s-1971)

Bessemer

The Muscoda sites contain substantial foundation materials scattered over more than 20 acres. Included are hoist foundations at both sites and a boiler stack at what is presumed to have been the No. 5 site. In addition to the large foundation remnants, smaller piers, walls, and other features are scattered about the site.

The Muscoda mines reveal a somewhat typical progression of mining practice in the Red Mountain mining district. The earliest mines removed the soft surface ore from surface trenches. Once these ores had been mined out a slope was opened. Steam-powered hoists evolved to electrical hoists by the 1920s.

Pyne-TCI-Woodward Red Ore Mine

AL 150, 4 miles south of Bessemer

Pyne Mine, one of only two shaft ore mines in the District (the other was Woodward's Songo Mine), is located on an approximately five acre site. The headframe and power house are still standing. Inside the power house, foundations for equipment are still visible although the equipment has been removed. The site is one of the best preserved red ore mining sites in the District.

Raimund Red Ore Mine No. 1 & No. 2 (1896)

Off Eastern Valley Road (JC 18), 8 blocks west of AL 150 on Elrie
Bessemer

The Raimund Red Ore Mines Nos. 1 and 2 are scattered over approximately 20 acres. Structures remaining include a fan house, hoist house, other substantial buildings, a slope, and several concrete piers and crusher foundations. A company schoolhouse, company bathhouse and a concentration of camp housing may also remain.

HISTORICAL REPORT ON THE VALLEY VIEW IRON ORE MINE SITE

by J. Lewis Shannon, Jr.

Historic American Engineering Record-National Park Service

Prepared for the "Vulcan Trail Project"

With the sponsorship of the Birmingham Historical Society

Under contract to Nimrod Long & Associates

With Funding from the City of Birmingham
and the Alabama Department of Transportation

Draft for Review and Comment by the Mayor's Vulcan Task Force
January 29, 1994

LOCATION

The Valley View Iron Ore Mine Site is located in the City of Birmingham, in Jefferson County, Alabama, on the crest and north slope of Red Mountain. It straddles both sides of a north facing ravine, one mile southwest of Lone Pine Gap, the point where U.S. 31 (old Montgomery Highway-20th Street) crosses the ridge just east of Vulcan Park. The mine site is adjacent to and south of the abandoned rail bed of the Birmingham Mineral (L. & N.) Railway's Red Gap Branch. The segment of the rail bed, currently known as "the Vulcan Trail," stretches approximately 2.2 miles from Lone Pine Gap at U.S. 31 to Walker Gap at Green Springs Highway. Under development as a hiking and biking trail, it constitutes the most convenient access to the site. The mine site is currently owned by The Club, Inc., a private dining club, located on the crest of the mountain above the mine site.

DESCRIPTION

The Valley View mine site includes approximately 110 acres on the crest and northern slope of Red Mountain on both sides of an east facing ravine. Here ore was surfaced mine on the top of the ridge and down the flanks of the ravine, then drifts were driven into the ridge on the strike of the seam and later an underground slope extended 700 feet into the mountain's inner recesses and ore extracted from both sides of the slope. The top 10 to 14 feet of the Big Seam were mined over a 20 year period from c. 1904 to 1924. Visible remnants of the former mining activity include the entrance to the slope mine via a concrete portal inscribed "1906 Valley View 1921", the railway alignment, a railway retaining wall, the hoist house foundation, the crusher foundation, crusher motor foundation, possible boiler house site, pump house, possible mine supervisor's house site, sealed mine drifts, and surface subsidence pits. See Richard Anderson, Jr.'s Valley View Mine Map prepared to accompany this report.

The Valley View Mine site can be approached from the abandoned bed of the Birmingham Mineral Railroad. The railbed currently serves as a utility access road and is under development as a public recreational trail. From the rail bed, the foundation of the ore crusher looms high above. Constructed of poured concrete, this massive structure appears to have held a gyratory crusher, possible a Gates or McCully type crusher. At the side of this foundation is a smaller machine mount that may have held the drive motor that powered the crusher. The alignment of the two foundations is consistent with this arrangement. A drive belt would have transferred power. Imbedded in the concrete, both foundations have machine mounting bolts. From these foundations, features of the entire site are aligned in a straight line extending southward up the ridge.

Proceeding directly up the slope from the crusher foundation is the foundation of the hoist house. This rectangular foundation stands at the crest of the mountain, overlooking Birmingham. The northwest side of the foundation is built up with concrete blocks above grade. The floor is a heavy concrete slab. Within this slab are numerous conduit openings and mounting bolts. On the southwest half is a large well for the hoist winding.

Beyond the hoist foundation, the grade for the mine car track is clearly evident. Dug below the natural ground level, this grade appears as a trench running directly down the southeast

face of the mountainside. A high concrete retaining wall defines the southwest side of the trench. Along the northeast side runs a lower stone wall.

This trench leads to the mine portal. The arched entry is surmounted by a rectangular parapet constructed of poured concrete. Cast into the concrete is the name "VALLEY VIEW" and the dates: "1906" and "1921." The mine opening has been sealed with a heavy iron grate, with a door welded shut, beyond which a concrete block wall further seals entry into the mine. To either side of the portal the terrain is steep.

SIGNIFICANCE

Operated as an independent producer by the Birmingham Ore (later the Birmingham Ore & Mining) Companies from 1901 to c. 1924, the mine site holds evidence of the drift and underground mining practice that provided iron ore, the essential ingredient for making iron and steel. Neither one of the largest, nor one of the most productive ore mines in the Birmingham District, the Valley View mine site is well located for interpretation of both drift and underground mining practice at its commanding site now overlooking the mineral railroad and the Birmingham city center.

HISTORY

In the late nineteenth century, American markets for cast iron sanitary pipe and fittings expanded as urban areas boomed. To participate in this new market, a group of investors centered in the northeast bought nine major producers of sanitary pipe and in 1899 formed the Central Foundry Company, a New York firm. Two years later, these investors formed a subsidiary company, the Central Iron and Coal Company, to provide pig iron for company foundries. As three of the company foundries were in Alabama, directors built selected a site at Holt, Alabama, six miles north of Tuscaloosa on the Warrior River, to build blast furnaces and a ~~new~~ soil pipe plant. The first furnace went into blast on August 1, 1903¹. At the Holt site the company completed a pipe foundry and cokeworks. Central Iron and Coal also purchased mineral lands. These included brown hematite ore reserves near Woodstock in Tuscaloosa County which became the company's principal supply of furnace ores. At the Valley View Mine, now overlooking the Birmingham city center, Central Iron contracted with Birmingham Ore and Mining Company to provide supplemental ore.² The Birmingham-based Birmingham Ore (& Mining) Company supplied ore from this mine to other Birmingham furnaces.

How Valley View Was Mined: Stripping the Outcrop

Mining at Valley View followed the general pattern of ore mining in the Birmingham District. The largest seam of ore in the District, known as the "Big Seam" outcropped (came to the surface) at the crest of the mountain and sloped beneath the surface toward the south. ~~In initial mining~~ Miners stripped the soft ore exposed along this outcrop. Having been weathered, with many impurities thereby removed, the ore was rich, easy, and cheap to extract. This supply also quickly depleted. Little evidence of this practice remains at Valley

View. ^{This} ~~Such labor-intensive~~ ^{did leave} surface extraction ~~left~~ open trenches, which erosion, reforestation, and subsequent development have ^{mostly} obscured. [^]

Mining The Drifts

A second level of development opened drift mines located where the ravine cut through the exposed ore seam. At these sites along the southeast flank of the mountain, the seam was exposed so that mine entries could be driven along the strike of the seam. This operation consisted of a series of drift mines, joined at the surface by an inclined tramway which transported the ore after delivery to the mine entrance to a tippie and crusher located on the Birmingham Mineral Railroad. With natural drainage and ventilation, and minimal surface apparatus, these mines were economical to operate. Photographs of this operation appear in the U.S. Geological Survey of Red Mountain mining published in 1910 and in Birmingham Deluxe, a photo essay on the city of that same year.

Drift mining at Valley View was complicated by the fact that the Red Gap Branch of the Mineral Railway, which served the site, was on the north side of the mountain. Rather than deliver the ore downhill to the right-of-way as was the standard procedure in the District, workers at Valley View hauled ore over the crest to reach the tippie. And although the ore outcrop did not extend far past the crest, this condition quickly became unmanageable as the quantity of ore produced grew, and was corrected and an incline put into operation.

A simple, but costly, solution solved the problem: a steam hoist was installed at the crest. This differed from most other drift operations in the District. In locations where ore was to be delivered to the bottom of the hillside, a tram was usually equipped with a counterweight and loaded ore cars guided onto the tram from the drift entries, the additional weight raising a counterweight as the tram was lowered to the tippie. This counterweight then lifted the tram and the empty ore cars back up to the entry. The gravity plane, as it was known, was generally preferred to the engine plane as gravity was free. Also, the apparatus was inexpensively installed.³ Many drift entries, tram grades, and an engine-driven, rather than a gravity-driven, incline, remain from these early drift operations.

Underground Mining

As drift mines driven into the walls of the ravines depleted the ore accessible by that method, a third stage of mining developed. In 1906 a slope mine was driven underground down the dip of the seam. Miners drove parallel headings at either side of the slope at 50 foot intervals following the strike of the seam. This produced an underground version of the inclined plane, with entries opening onto a haulage slope rather than to the surface. Miners underground drilled and blasted the ore, then "mucked," or loaded the loose pieces into mine cars. As the heading moved away from the slope, it was widened by "stopping," or mining ore on the "up dip," or uphill side. At intervals of 150 to 200 feet, openings called "upsets" were made between adjacent headings, improving ventilation and increasing the percentage of ore that was recovered. Mules often hauled ore laden cars to the main slope at Valley View. A stationary hoist equipped with a long steel cable hauled loaded cars to the surface.⁴

In the Birmingham District, many ore mines that made the transition from drift mining to underground mining experienced periods of overlapping practices. Since a hoist was already in use at the Valley View site, this practice began, but with slight delay to inaugurate underground mining. At this mine the two mining practices were integrated. The slope was driven down on the west side of the ravine and the headings off the slope were driven out the surface and into the ravine. Ore cars from drifts in the east side of the ravine were then brought into the slope through these headings and hauled up the slope to the crest.

Mining the drifts at Valley View probably started in 1901. The slope was opened in 1906.⁵ By January 1, 1909, the slope had been extended about 700 feet underground, dipping at an angle of twenty degrees, with three left and eight right headings turned off from the haulage slope. Ore cars were hauled to the crest, then guided across a trestle, probably of timber construction, to a tippie on the northwest flank of Red Mountain. Ore was dumped from the cars into a crusher, which discharged directly into rail cars on a siding. A thickness of about ten feet was mined in the Big Seam, yielding ore that varied from 36 to 45 percent iron.⁶

Closed in 1916, Valley View reopened in 1921 with a new concrete portal at the mine entrance.⁷ The hoist was probably converted from steam to electric power at this time.⁸ By 1923, the surface plant included a barn, a water tank, and a mine camp with twenty-three houses.⁹ The mine closed in 1924.¹⁰ However, as there was a possibility of future mining activity, the L & N was requested not to abandon the Mineral Railroad to the site.¹¹

With mining closed, new plans for the well-located, mountaintop site overlooking the city emerged. In June 1948, investors purchased the site to build a supper club. By 1951 an Art Deco extravaganza, appropriately entitled "The Club," was completed. The building siting changed twice to compensate for the mine workings. Forty support pilings, driven through mine tunnels into bedrock, supported the facility. Architects Warren, Knight and Davis used the 64 degree water in the flooded mine chamber to air condition the dining facilities.

Birmingham entrepreneurs proposed other developments at the mine site. In February 1956, a Chamber of Commerce-backed plan proposed a "skyline cable car" ride from Vulcan Park. Riders would enter the mine where "beautifully lighted" displays and exhibits would tell the Alabama mining story.¹²

While this scheme did not materialize, Robert S. Smith, prime mover and longtime manager of The Club, envisioned opening the abandoned mine to the public. He contacted Birmingham architects Elliot and Bradford, the firm then developing a plan to renovate Vulcan Park. Smith toured one of the architects inside the mine, explaining that he paid for an inspection by mining engineers. He had also developed estimates to clean and reinforce the mine and make it safe for public use. Elliot and Bradford integrated the proposed mine visit into their Vulcan Park plan. Visitors to Vulcan Park would arrive via rail and tour an underground mining museum with an auditorium featuring an historic cyclorama, illuminated waterfall, and subterranean boat ride past "black light" murals.¹³ While modernizations were

completed from 1969 to 1971 at the Vulcan Park site, funding was not obtained for the railroad and mine ride.

Another plan to access Valley View to the public was developed in 1965 by the Vulcan Park Improvement Commission. Chaired by Birmingham architect Fred Hallmark, this proposal included an amphitheater capable of seating 800 persons and a rubber-tired train along the rail bed from Vulcan Park to the mine.¹⁴ This plan was never realized.

Since construction of The Club in the 1950s, the Valley View site has been neglected. Slope and drift entrances have been bricked up to prohibit entry. The site is heavily overgrown. The last known standing mine structure, the brick hoist house, was demolished sometime between 1949 and 1964.¹⁵

FURTHER RESEARCH

This site may prove a better candidate for archeological than archival research. None of the corporate records for Birmingham Ore, Birmingham Ore & Mining Company, or the Central Iron and Coal Company have been located. An extensive search for corporate records of Central Iron and Coal and Central Foundry Companies yielded only rumors. Joyce Lamont, Special Collections Curator at the University of Alabama Library in Tuscaloosa, contacted an accountant who had been involved in recent Central Iron Company bankruptcy proceedings. She was told that following the bankruptcy, company records were burned by order of the courts. However, the foundry site with countless buildings at Holt remains and some of them may contain company records. A title search and additional investigation of the Birmingham entrepreneurs involved in the firms operating the mine might yield additional information.

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ENDNOTES

1. Alabama Blast Furnaces (Woodward, AL: Woodward Iron Co., 1940), 77-78.
2. United States Geological Survey (USGS), Bulletin 400: Iron Ores, Fuels, and Fluxes of the Birmingham District, Alabama, by Ernest F. Burchard and Charles Butts (Washington D.C.: U.S. Department of the Interior, 1910), pp. 62-66.
3. Bureau of Mines, Iron-Ore (Hematite) Mining Practice in the Birmingham District, Ala., by W. R. Crane (Washington, D.C.: U.S. Department of Commerce, 1926) 6-7; United States Geological Survey (USGS), Bulletin 400: Iron Ores, Fuels, and Fluxes of the Birmingham District, Alabama, by Ernest F. Burchard and Charles Butts (Washington D.C.: U.S. Department of the Interior, 1910), 58-62; Alabama Geological Survey, Report on the Valley Regions of Alabama (Paleozoic Strata), Part II: on the Coosa Valley Region, by Henry McCalley (Montgomery, AL: Alabama Geological Survey, 1897) 368-372.
4. Blair, A.J. "Map of Valley View Mine Showing Underground Workings." June 10, 1923.
5. A precise starting date is difficult to establish for the Valley View. A date of 1900 is given by J. R. Theonen and Avery H. Reed, Jr. in The Future of Birmingham Red Iron Ore, Jefferson County, Ala., U.S. Department of Mines, Report of Investigations 4988 (1953), Table 1, 2-3. The Birmingham Ore and Mining Company, which operated the mine, was not incorporated until February 8, 1905. However, other firms owned by the principals running the Birmingham Ore and Mining Company had acquired property, mining contracts, and equipment at the Valley View location as early as 1901, when these first appear in the Birmingham City Directory. The date of 1906 for development of the slope and opening of the underground mine is cast into the concrete portal remaining at the mine site. Woodward cites 1924 as the closing date for the mine. In 1925, Birmingham Ore and Mining is no longer listed in the Birmingham City Directories.
6. USGS, Iron Ores, Fuels, and Fluxes, 62.
7. Bureau of Mines, Future of Birmingham Ore, Table 1, 3-4; Ted Bryant, "Opening of Old Mine to Public Discussed," Birmingham Post-Herald, April 8, 1965.
8. This was a common practice in the United States at that time, and surface remains are consistent with such a conversion.
9. Leah Rawls Atkins, The Club: A History: 1951-1986 (Birmingham: The Club, Inc., 1986), 19. According to Dr. Atkins, this information was found in a mine map dated 1923, currently in private hands.
10. Alabama Blast Furnaces, 79.
11. R. Lyle Key, Jr., "Birmingham Mineral Railroad's Red Mountain Route," 1988.

12. Irving Beiman, "Skyline Cable Car May be Reality Here 'Ere Long," Birmingham News, February 28, 1956.
13. Elliot and Bradford, "Master Plan," 8-10.
14. Ted Bryant, "Opening of Old Mine to Public Discussed," Birmingham Post-Herald, April 8, 1965.
15. Jefferson County Board of Equalization records.

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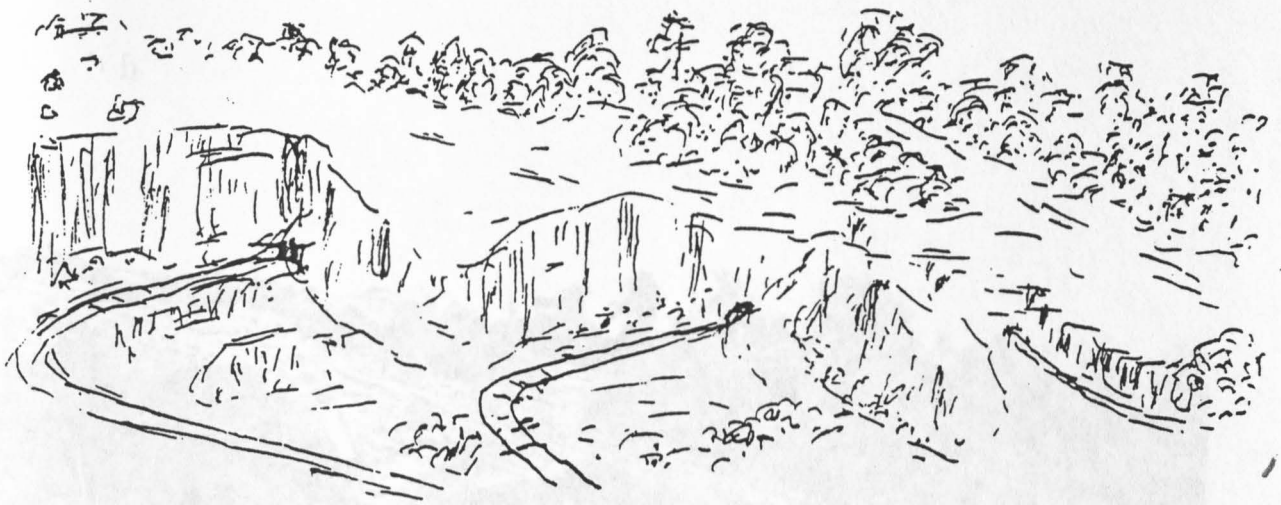
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VALLEY VIEW MINE LIST OF ILLUSTRATIONS

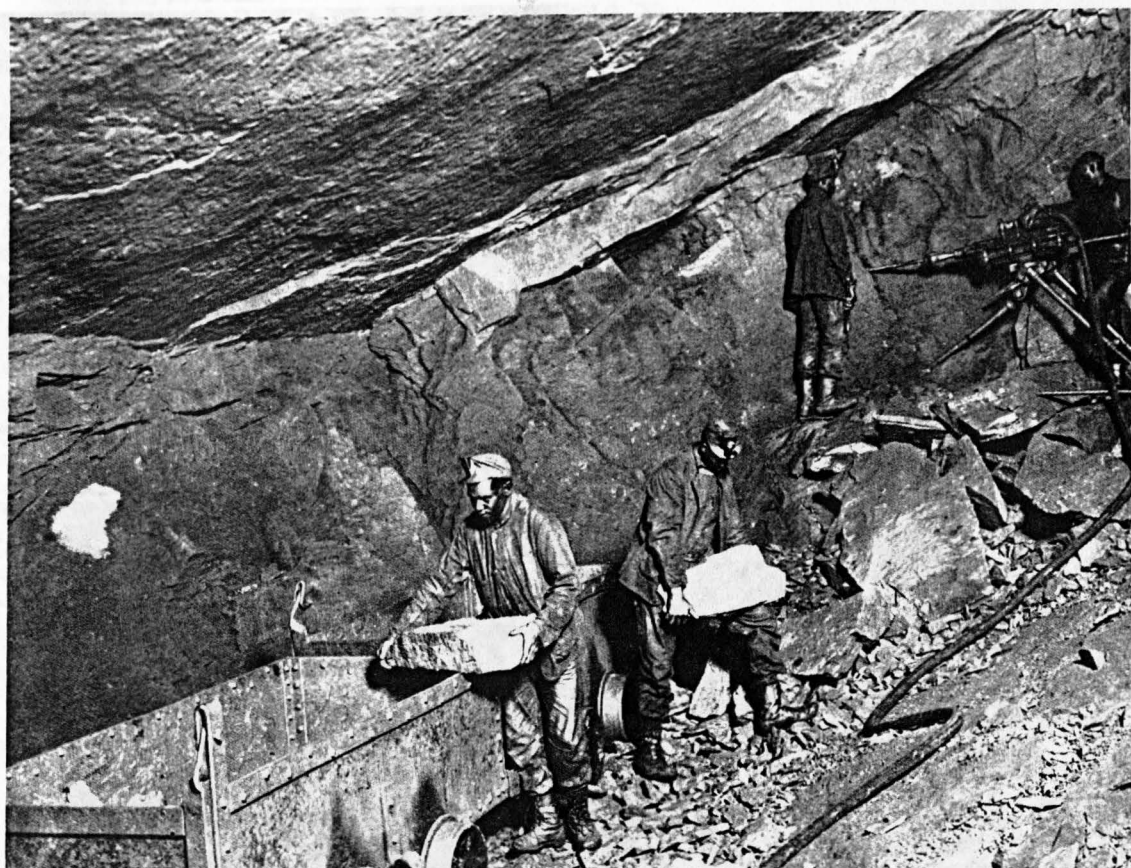
1. North incline at Valley View mine showing drift headings in open pits, Illustration in Otis Clarke, "Birmingham Red Ore," typescript, 1993.
2. Drift mine, Valley View, engraving in Birmingham Deluxe, identified as "Birmingham C. & I. Co., Red Ore Mine, Red Mountain," 1910, also printed in Ethel Armes, The Story of Coal and Iron in Alabama, and identified as "Old Entry in Valley View, Red Mountain."
3. Drift openings, Valley View, c. 1910, in United States Geological Survey Bulletin 400.
4. Drilling and loading red ore underground, c. 1910, in United States Geological Survey Bulletin 400.
5. View looking west of the Mineral Railroad right-of-way beneath "The Club," Marjorie L. White, Birmingham Historical Society, 1993.
6. Crusher and crusher motor foundations along the Mineral Railroad right-of-way, view looking east at the Valley View Mine site, Marjorie L. White, Birmingham Historical Society, 1993.
7. View from the Hoist House Foundation to the Birmingham city center, Marjorie L. White, 1993.
8. Concrete Portal, Valley View Mine inscribed "1906 Valley View 1921," Marjorie L. White, 1993.



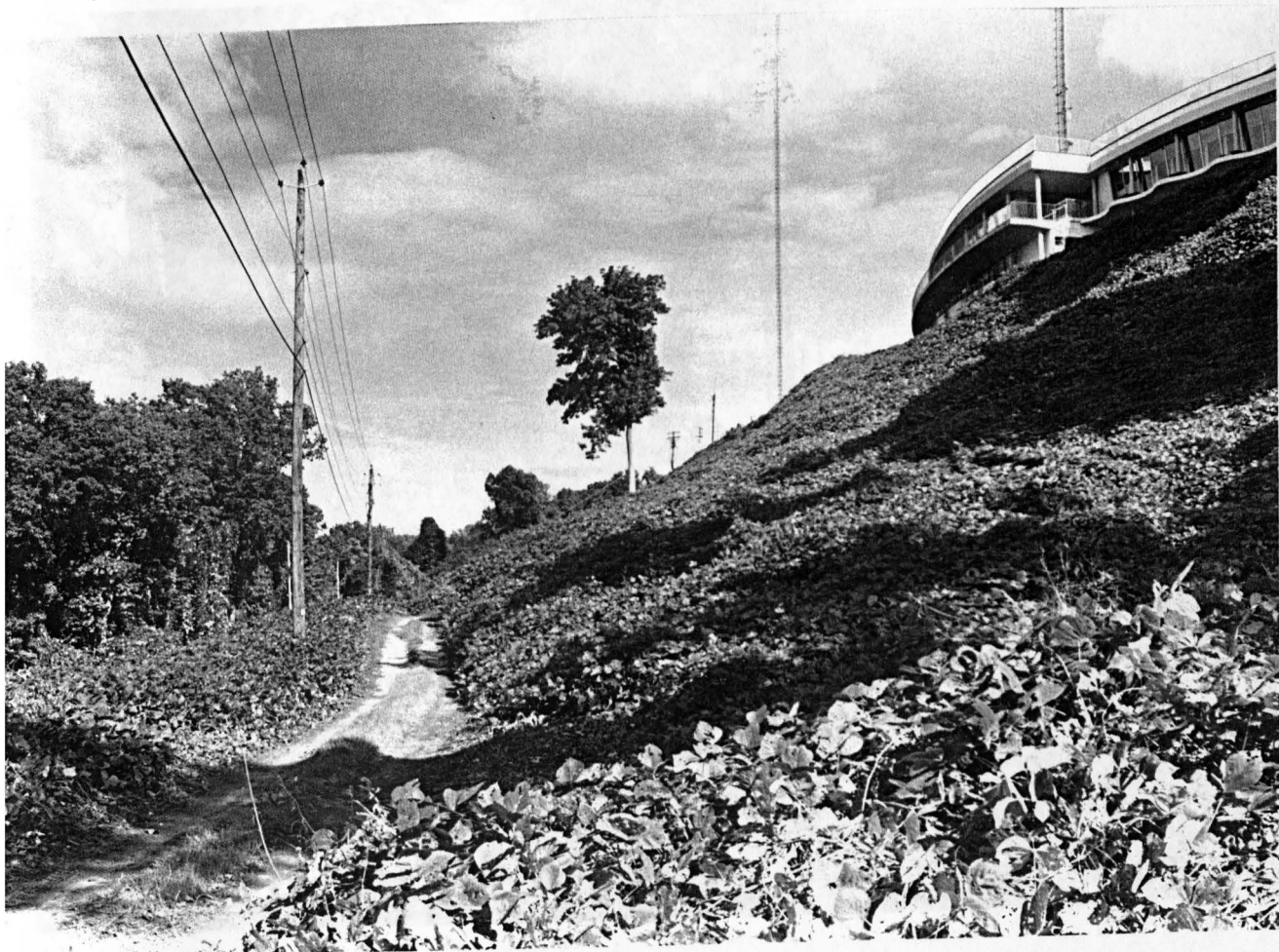
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