

**HISTORIC ARCHITECTURAL RESOURCES
SURVEY REPORT**

Final Identification and Evaluation

**Replace Bridge No. 316 on US 70 Business over
Campus Drive**

Durham County, North Carolina

TIP No. B-3638

State Project No. 8.1352201

Federal Aid No. BRSTP-70B(2)



**North Carolina Department of Transportation
Report Prepared by Heather Fearnbach**

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North Carolina Department of Transportation Report
Prepared by Heather Fearnbach

November 2000

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11-28-2000

Date

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11-28-2000

Date

**Replace Bridge No. 316 on US 70 Business over Campus Drive
Durham County, North Carolina
TIP No. B-3638**

PROJECT DESCRIPTION

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 316 on US 70 Business in Durham County with a new structure (Figure 1). Bridge No. 316 is a four-lane reinforced concrete deck girder structure built in 1950 and has a sufficiency rating of 28.7 out of 100.

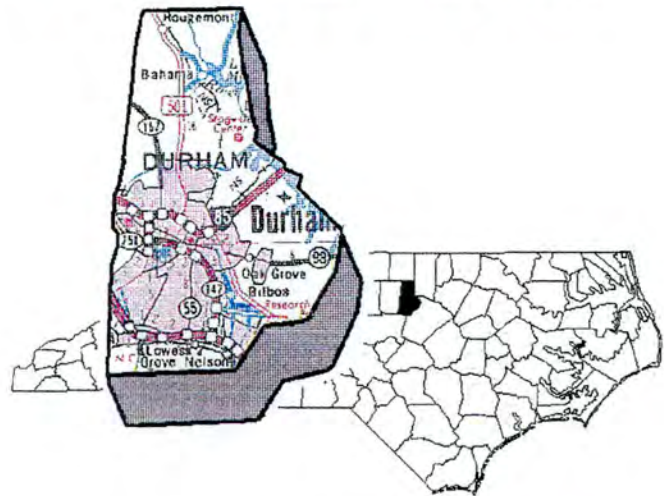
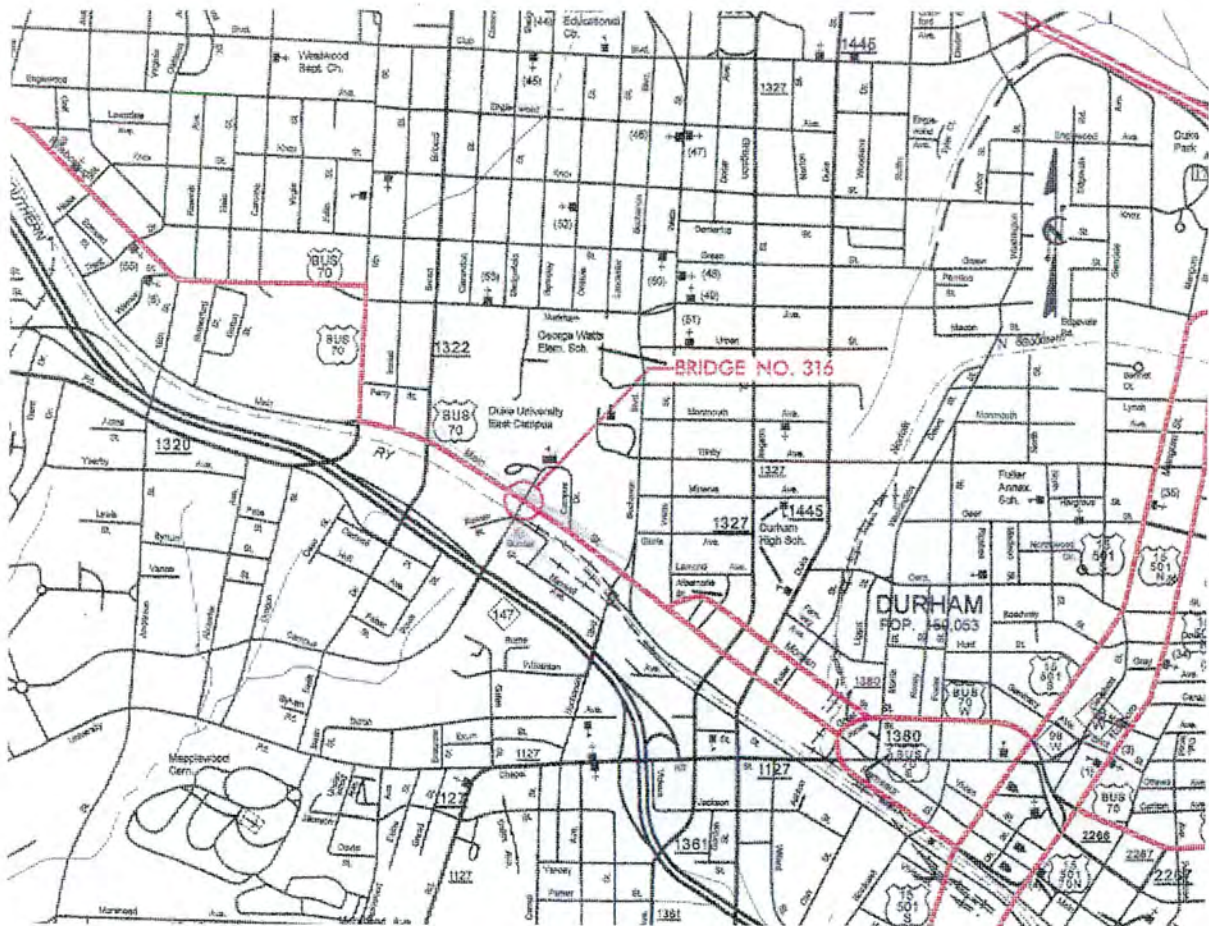
One alternative is being evaluated for replacing Bridge No. 316. It is replacing the bridge in kind in the same location using staged construction.

PURPOSE OF SURVEY AND REPORT

NCDOT conducted a survey and compiled this report in order to identify historic architectural resources located within the Area of Potential Effects (APE) as part of the environmental studies performed by NCDOT and documented by a Categorical Exclusion (CE). This report is prepared as a technical appendix to the CE and as part of the documentation of compliance with the National Environmental Policy Act (NEPA) of 1969 and the National Historic Preservation Act (NHPA) of 1966, as amended. Section 106 of the NHPA requires that if a federally funded, licensed or permitted project has an effect on a property listed in or eligible for the National Register of Historic Places, the Advisory Council on Historic Preservation be given an opportunity to comment. This report is on file at NCDOT and available for review by the public.

METHODOLOGY

NCDOT conducted the survey and prepared this report in accordance with the provisions of the Federal Highway Administration (FHWA) Technical Advisory T 6640.8A (Guidance for Preparing and Processing Environmental and Section 4(f) Documents); the Secretary of the Interior's Standards and Guidelines for Archaeological and Historic Preservation (48 FR 44716); 36 CFR Part 60; and Survey Procedures and Report Guidelines for Historic Architectural Resources by NCDOT. This survey and report meet the guidelines of NCDOT and the National Park Service. In addition, this report conforms to the expanded requirements for architectural survey reports developed by NCDOT and the North Carolina State Historic Preservation Office (SHPO) dated February 2, 1996.



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Project
**Replace Bridge No. 316 on US 70
 Business over Campus Drive**

Sheet Title
Vicinity Map

Drawn By:
Fearnbach
 Issue Date:
 11-21-00

TIP No.
B-3638

Scale **NTS**

Figure No.
1

NCDOT conducted an intensive survey with the following goals: (1) to determine the Area of Potential Effects (APE), defined as the geographic area or areas within which a project may cause changes in the character or use of historic properties, if any such properties exist; (2) to identify all significant resources within the APE; and (3) to evaluate these resources according to the National Register of Historic Places criteria.

The APE for historic architectural resources was delineated by a NCDOT staff architectural historian and reviewed in the field. The APE boundary is shown on the attached map (Figure 2).

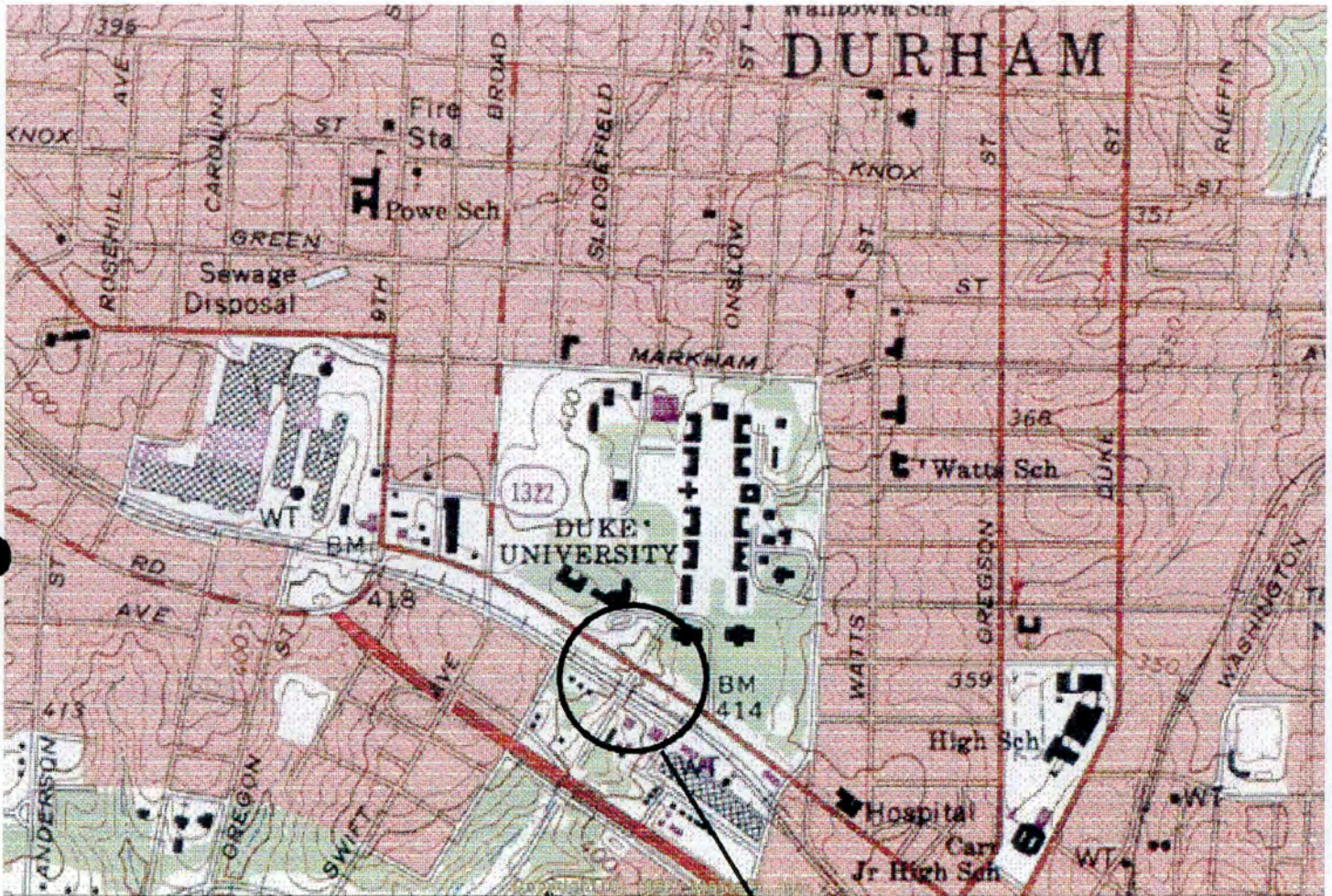
The survey methodology consisted of a field survey and background research on the project area. A NCDOT staff architectural historian conducted a field survey on November 1, 2000. All structures over fifty years of age in the APE were photographed and keyed to an area map.

Background research was conducted at the SHPO in Raleigh, the North Carolina State Library and Archives in Raleigh, and the Duke University Archives in Durham.

SUMMARY OF SURVEY FINDINGS

The bridge under consideration spans Campus Drive, the major artery connecting the East and West Campuses of Duke University, on US 70 Business in Durham County. The historic stone wall surrounding East Campus continues across the bridge, forming one side of the railing of Bridge No. 316. The other side of the railing is also stone, and reinforced concrete retaining walls line the underpass and extend along Campus Drive on either side of the bridge (Figure 3). A pedestrian walkway under the bridge allows for foot and bicycle traffic between campuses. There are two other bridges in close proximity to Bridge No. 316, including a railroad bridge and the Pettigrew Street Bridge (Figure 4), a reinforced concrete parapet design. The Highway 147 (Durham Freeway) bridge also spans Campus Drive.

Trinity College/East Campus of Duke University was added to the North Carolina Study List in 1984 but was never listed in the National Register of Historic Places although a draft National Register nomination was completed. The East Campus Central Heating Plant, located just outside of the Study List boundaries, is eligible for listing in the National Register. As a result of this survey an expansion of the Study List boundary to include the Central Heating Plant is recommended. The existing Study List boundaries and the proposed boundary expansion are shown in Figure 5.



Area of Potential Effects



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**Replace Bridge No. 316 on US 70
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Area of Potential Effects

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Scale **NTS**

Figure No.
2

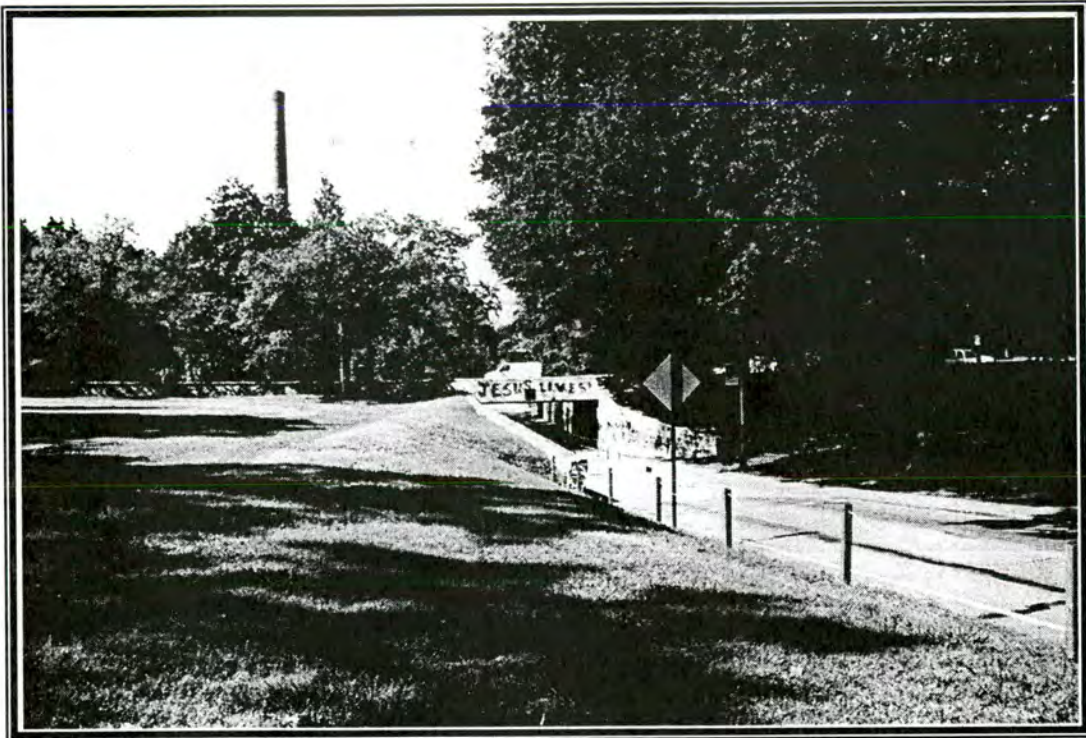


Figure 3 - Bridge No. 316

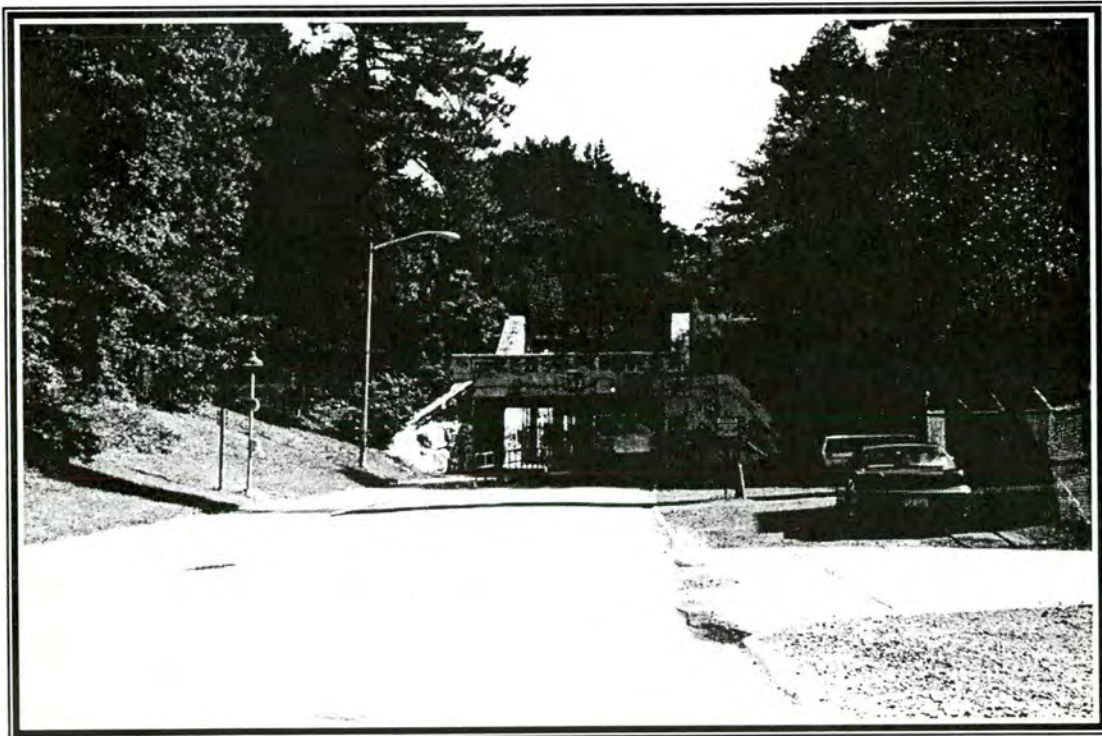
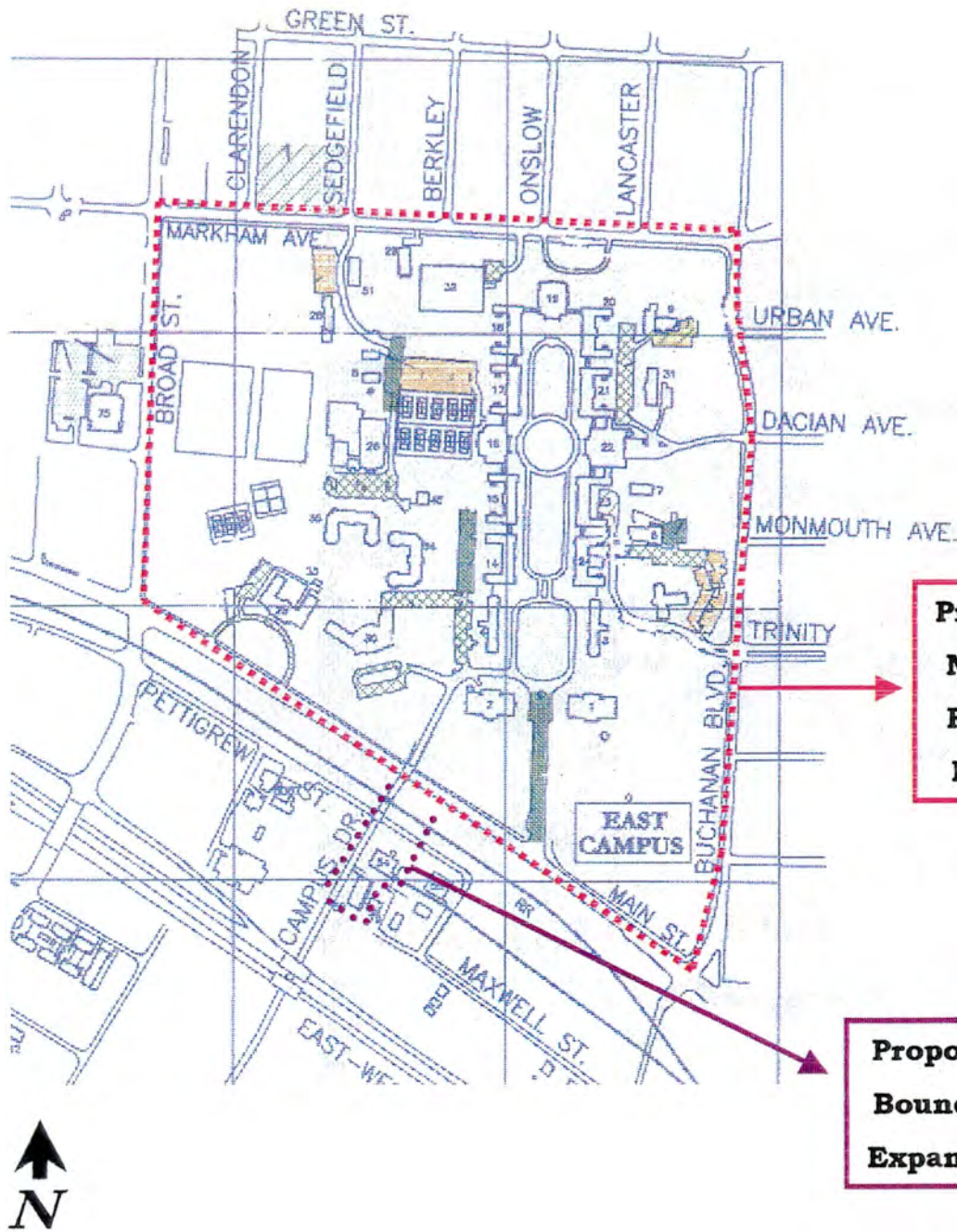


Figure 4 - Pettigrew Street Bridge (foreground) and Railroad Bridge



**Proposed
 National
 Register
 District**

**Proposed
 Boundary
 Expansion**



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Project
**Replace Bridge No. 316 on US 70
 Business over Campus Drive**

Sheet Title
**Proposed National Register Boundary
 and Expansion - Trinity College/ East
 Campus of Duke University**

Drawn By:
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11-21-00

TIP No.
B-3638
 Scale **NTS**
 Figure No.
5

Properties Listed on the North Carolina Study List
Trinity College/East Campus of Duke University

Properties Evaluated and Considered Eligible for the National Register
East Campus Central Heating Plant

PROPERTY INVENTORY AND EVALUATIONS

Properties Listed on the North Carolina Study List
Trinity College/East Campus of Duke University

Location

The following excerpt from the draft National Register nomination (1984) delineates the location of the proposed historic district:

Trinity College/East Campus of Duke University is a 107.8-acre tract located approximately one-half mile from the west edge of Durham's Central Business District. The boundaries of the campus form a regular four-sided polygon. The east and west boundaries of N. Buchanan Blvd. and Broad Street, respectively, which run due north-south, intersect W. Markham Ave. at the north edge of the campus at ninety-degree angles; W. Main St. runs along the South side of campus on a diagonal to the northwest. The Trinity Historic District, composed of the major portions of two early streetcar suburbs- Trinity Heights to the north and Trinity Park to the east- adjoins the campus. West Durham, which evolved as the Erwin Cotton Mills' large mill village, lies directly beyond Broad Street.¹

Description

The following excerpts from the draft National Register nomination (1984) describe the proposed historic district (Figures 6-8):

The [thirty-one] primary campus buildings are concentrated in the eastern portion of the park-like grounds, which are fairly level and characterized by well-tended lawns and mature trees. Mature shrubbery and trees also surround most of the buildings. On West Main Street, the main entrance to the campus is marked by random-coursed granite posts at Campus Road, a wide, tree-lined boulevard flanked by tree-covered lawns. A bronze life-sized figure of a farmer sowing seed, a fountain with surrounding garden, and an octagonal stone pavilion grace the east lawn. Campus Road [turns to the left] at a small grassed island containing a seated bronze statue of Washington Duke. Immediately east and west of the Duke statue are the Neoclassical Revival-style East Duke and West Duke Buildings which face West Main Street. The principal campus buildings extend from East Duke and West Duke in

¹ Claudia R. Brown. "Trinity College/East Campus of Duke University," Section 7. Description. Draft National Register Nomination, SHPO files, Raleigh, North Carolina Department of Cultural Resources, 1984.



**Figure 6 -
East Campus
Baldwin
Auditorium**



**Figure 7 -
East Campus
Union**

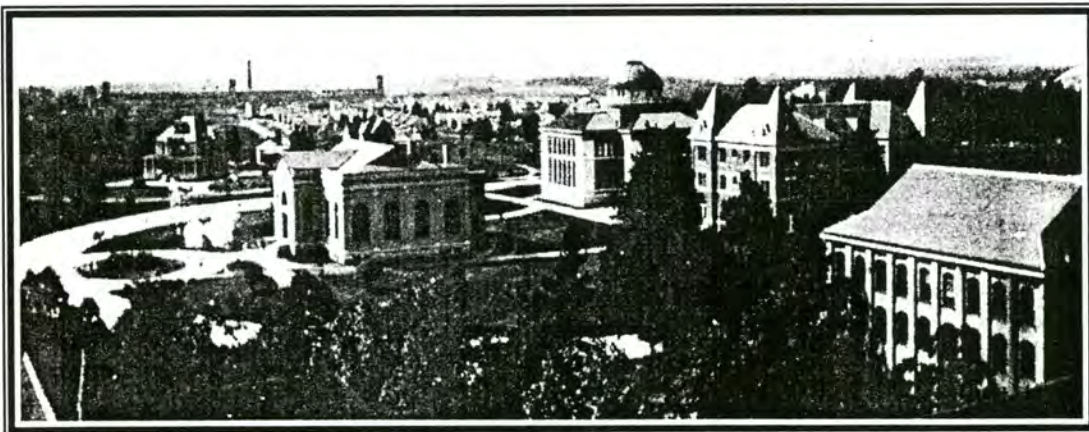


Figure 8 - Circa 1905 view of Trinity College

two lines due north almost to Markham Avenue. Immediately north of East Duke and West Duke there are two buildings designed with vague allusions to the classical which contrast to the academic Georgian Revival style of the other five buildings in each line. The domed Baldwin Auditorium closes the formal arrangement at the north end. In front of the eleven Georgian Revival Buildings, narrow paved roads traverse the treeless lawns of the quadrangle in a long oval broken in the middle by a circular drive accenting a minor cross axis. The long oval follows the course of the racetrack that occupied the site prior to its donation for the campus in 1890.

The rest of the campus buildings are an eclectic blend of late Victorian and period revival styles arranged in clusters east and west of the quadrangle; each of these buildings is connected to N. Buchanan Blvd., W. Markham Ave. or W. Main St. by picturesque narrow winding driveways. The oldest buildings are located to the east, while six buildings with construction dates ranging from the turn of the century to 1973 are situated west of the north end of the quadrangle. A sizable area at the west end of the campus, approximately one-quarter of the entire tract, is devoted to athletic fields.²

The historic stone wall surrounding East Campus has been in place since 1915. Benjamin N. Duke donated the money for the 1.7 mile, thirty-six-inch tall wall constructed by the Charlotte firm of Porter and Boyd (Figures 9 and 10).

Statement of Significance

The following excerpt from the draft National Register nomination (1984) provides a succinct discussion of the evolution of Trinity College/East Campus of Duke University historic district:

Along with the tobacco and textile industries, one of the three major building blocks of Durham is Duke University. Established in the 1830s as a subscription school in rural Randolph County, the institution was transformed under the direction of Braxton Craven into a liberal arts college by 1859. When John Franklin Crowell became president of Trinity in 1887, he devoted himself to the school's expansion, which he believed would occur successfully only in an urban environment. When Durham's leaders learned that the college wished to move into a city, Washington Duke and Julian S. Carr attracted the school to Durham in 1890 with offers of substantial funding and a 62-acre site. With the leadership of college presidents Crowell, John C. Kilgo and William P. Few, as well as continued financial support from the Dukes, Trinity College developed as a highly respected institution known for its fostering of academic freedom. Now the East Campus of Duke University, the site donated in 1890 contains thirty buildings representing the school's three principal phases of development in Durham prior to 1940. Although only three buildings survive from the initial building campaign of the 1890s, expansion throughout the first two decades of the twentieth century is well represented, primarily with the work of Charlotte architect C.C.

² Ibid.

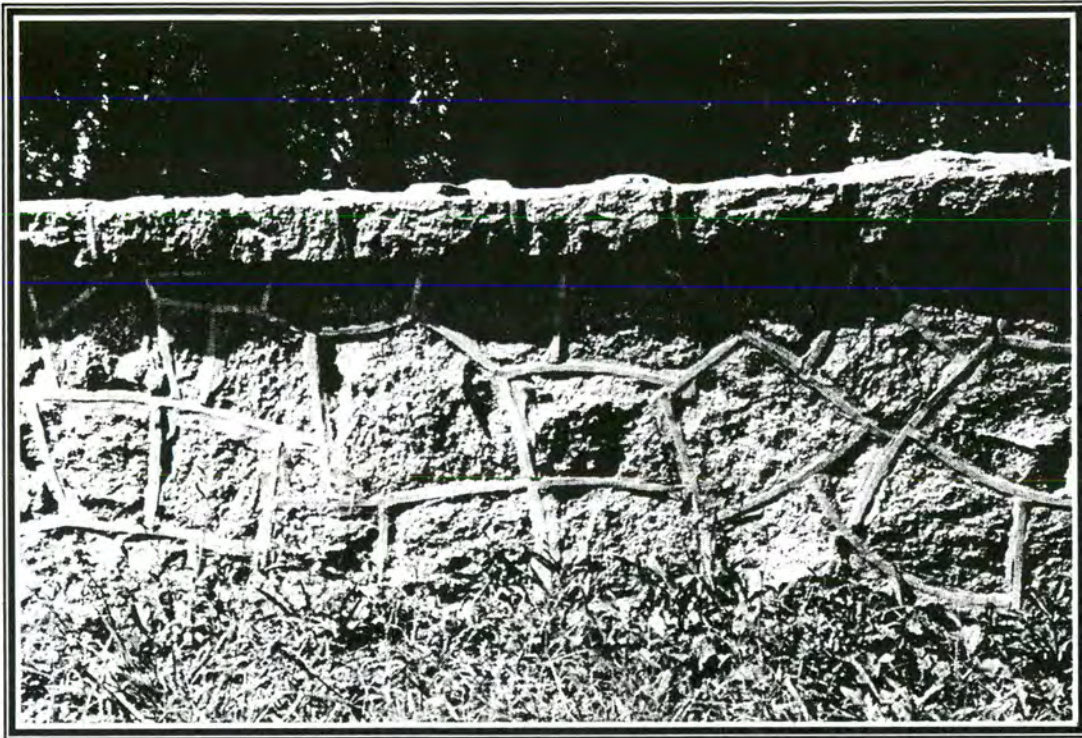


Figure 9 - Detail of 1915 stone wall surrounding East Campus



Figure 10 - View of stone wall forming one side of bridge railing

Hook. The centerpiece of the campus is the quadrangle defined by Horace Trumbauer's eleven Georgian Revival-style buildings commissioned when Trinity College became Duke University. The sophisticated architecture of the campus is an appropriate reflection of the academic and cultural breadth the school has contributed to Durham and North Carolina.³

Evaluation

Trinity College/East Campus of Duke University is **eligible** for the National Register under Criterion A (event) for its role in the development of Durham and higher education in North Carolina. *To be eligible under Criterion A the property must retain integrity and must be associated with a specific event marking an important moment in American History or a pattern of events or historic trend that made a significant contribution to the development of a community. Furthermore, the property must have existed at the time and be documented to be associated with the events. Finally, the property's specific association must be important as well.*⁴

"Trinity College/East Campus of Duke University represents the school's development as a highly respected institution known for its fostering of academic freedom. It also represents the efforts of Durham's leaders who attracted the school to Durham and supported it financially to provide the cultural amenities necessary for their community's continued development as a progressive city."⁵

Trinity College/East Campus of Duke University is **eligible** for the National Register under Criterion B (person) for its association with Trinity College presidents John Franklin Crowell, John C. Kilgo and William P. Few and prominent Durham leaders such as the Duke family.⁶ *For a property to be eligible for significance under Criterion B, it must retain integrity and 1) be associated with the lives of persons significant in our past, i.e., individuals whose activities are demonstrably important within a local, state or national historic context; 2) be normally associated with a person's productive life, reflecting the time period when he/she achieved significance; and 3) should be compared to other associated properties to identify those that best represent the person's historic contributions. Furthermore, a property is not eligible if its only justification*

³ Ibid., Section 8, Significance.

⁴ National Park Service. *National Register Bulletin 15* (Washington, D.C.: Department of the Interior, 1991), 12.

⁵ Claudia R. Brown. "Trinity College/East Campus of Duke University." Section 8, Significance. Draft National Register Nomination.

⁶ Ibid.

for significance is that it was owned or used by a person who is or was a member of an identifiable profession, class or social or ethnic group.⁷

Trinity College/East Campus of Duke University is **eligible** for the National Register under Criterion C (design/construction) for its architectural significance. *For a property to be eligible under this criterion, it must retain integrity and either 1) embody distinctive characteristics of a type, period, or method of construction; 2) represent the work of a master; 3) possess high artistic value; or 4) represent a significant and distinguishable entity whose components lack individual distinction.*⁸ “The Trinity College/East Campus of Duke University contains some of the foremost examples of the work of noted architects C.C. Hook and Horace Trumbauer.”⁹

Trinity College/East Campus of Duke University is **not eligible** for the National Register under Criterion D (potential to yield information). *For a property to be eligible under Criterion D, it must meet two requirements: 1) the property must have, or have had, information to contribute to our understanding of human history or prehistory, and 2) the information must be considered important.*¹⁰

Boundary Description

The boundaries of Trinity College/East Campus of Duke University National Register district as proposed in the draft National Register Nomination are outlined in Figure 5.

Boundary Justification

The boundaries of Trinity College/East Campus of Duke University include the block bounded by Broad Street, Main Street, Buchanan Boulevard, and Markham Avenue historically owned by Duke University.

⁷ National Park Service, *National Register Bulletin 15*, 15.

⁸ Ibid.

⁹ Claudia R. Brown, “Trinity College/East Campus of Duke University.” Section 8, Significance. Draft National Register Nomination.

¹⁰ National Park Service, *National Register Bulletin 15*.

Properties Evaluated and Considered Eligible for the National Register
East Campus Central Heating Plant

Location

The East Campus Central Heating Plant is located at 1117 West Pettigrew Street. The complex is adjacent to, but not visible from the main structures of East Campus. An extensive tunnel system connects the heating plant to other East Campus buildings.

Description

The East Campus Central Heating Plant was completed in 1926 at a cost of almost \$440,000.00. Horace Trumbauer designed this rather elaborate complex of brick industrial buildings, which is in keeping with the tradition of ornate tobacco factories and warehouses commissioned by the Duke family in Durham during the late-nineteenth century. Like some of these earlier industrial buildings, the heating plant features decorative brickwork including machicolation at the cornices and decorative corbelling. The use of Flemish bond brickwork, unusual in industrial buildings, connects the heating plant complex to the rest of the East Campus buildings.¹¹

The heating plant complex consists of a boiler and pump building with an adjacent smokestack and a detached shop (Figure 11). The two-story boiler and pump building features the most elaborate ornamental brickwork, including a belt course visually supported by denticulated, stepped corbelling. Recessed brick medallions with decorative brickwork surrounding inset square concrete panels emphasize the wall space between the arched windows and doors and the belt course. Two-story, arched windows with embossed metal panels at the story separation characterize the southeastern corner of the building. A corrugated tin train shed that historically provided train access for coal deliveries sits on top of the boiler and pump building (Figure 12). The adjacent smokestack is 175 feet tall, with a corbelled stack that looms far above the rest of the heating plant (Figure 13). The detached shop is a one-story, rectangular building with an ornamental corbelled cornice and simplified metal sash windows and doors (Figure 14).

¹¹ Margo Rettig. "The Physical Description and Critical Assessment of the East Campus Central Heating Plant at Duke University." East Campus Central Heating Plant files. Duke University Archives. Perkins Library. Duke University. Durham, NC.

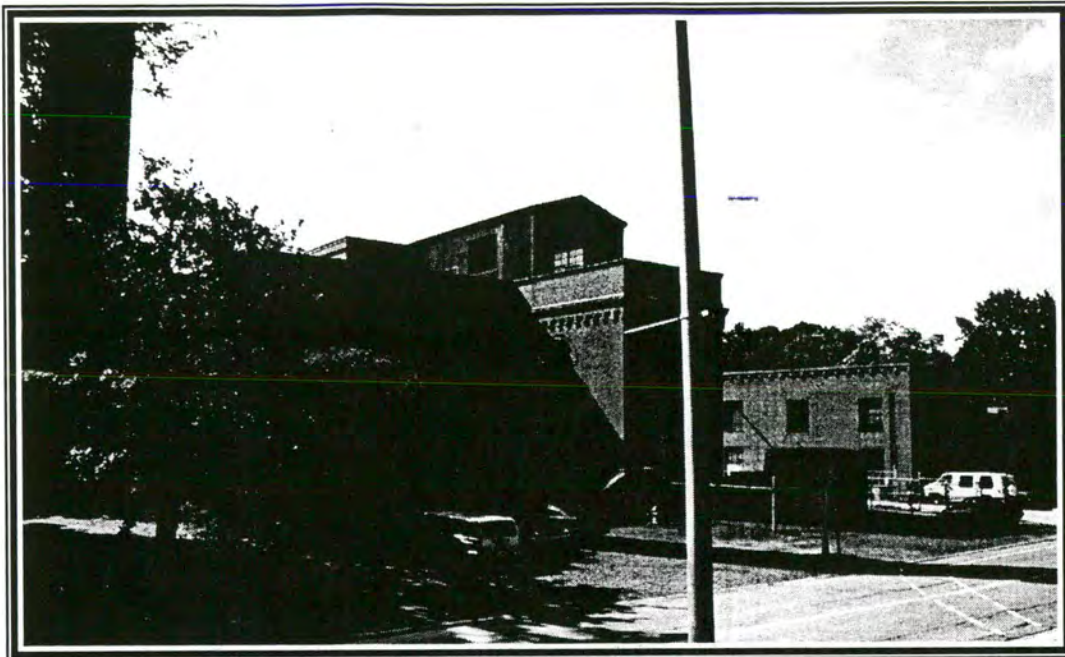


Figure 11 - East Campus Central Heating Plant Complex

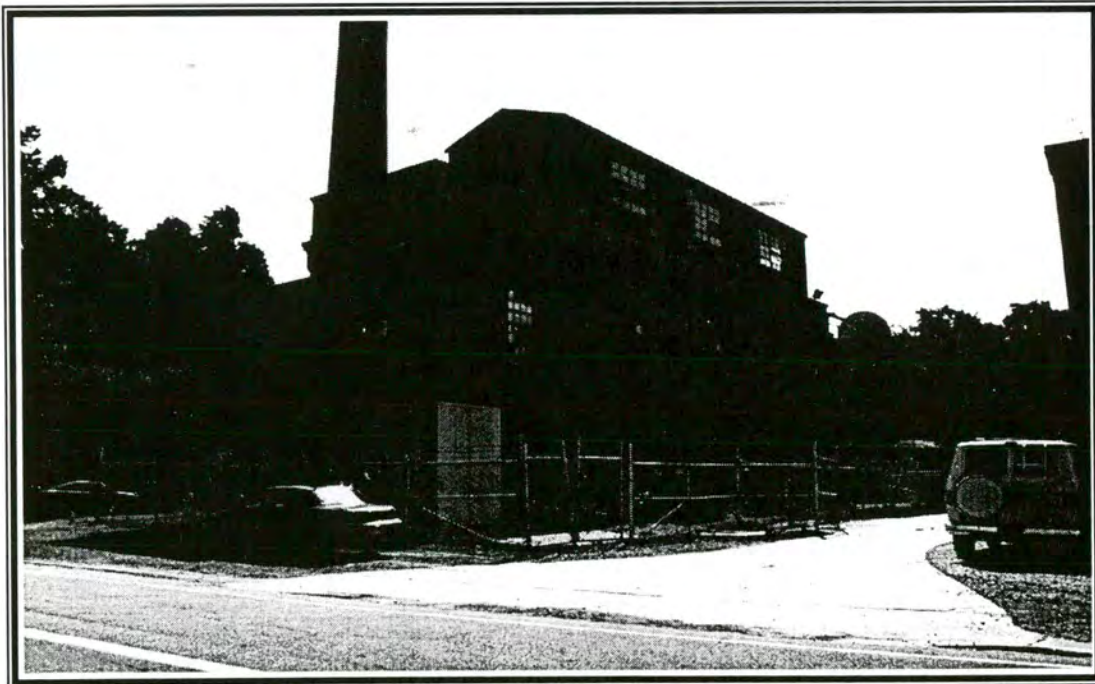
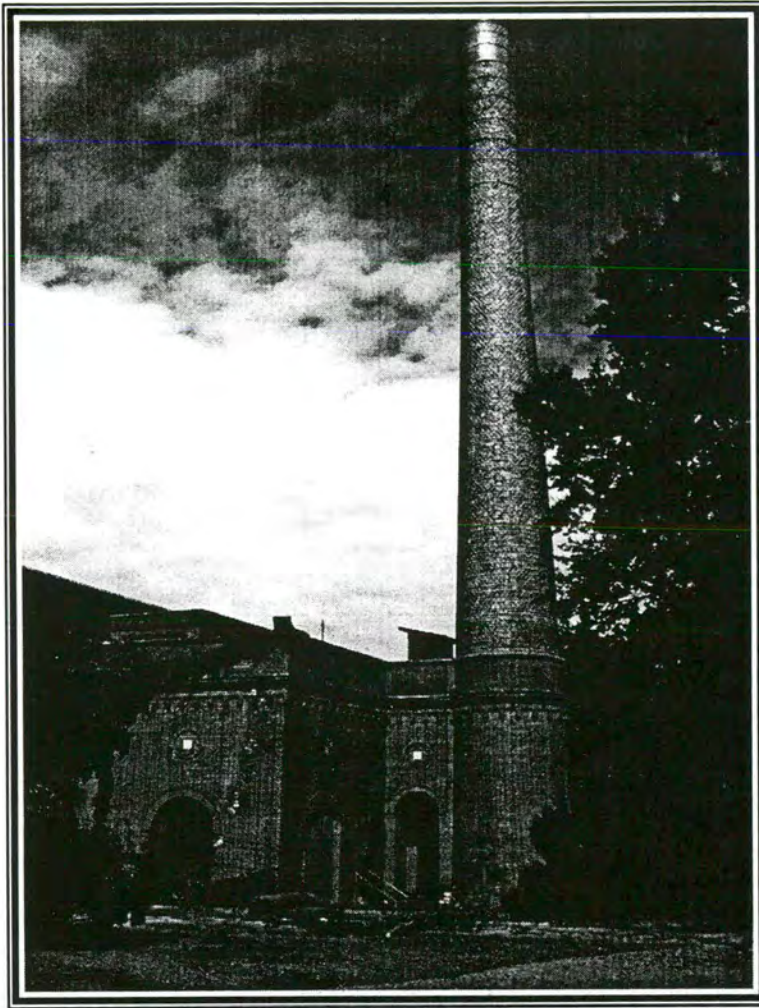


Figure 12 - Central Heating Plant- Boiler and Pump Building



**Figure 13 -
Central
Heating Plant
Smokestack**

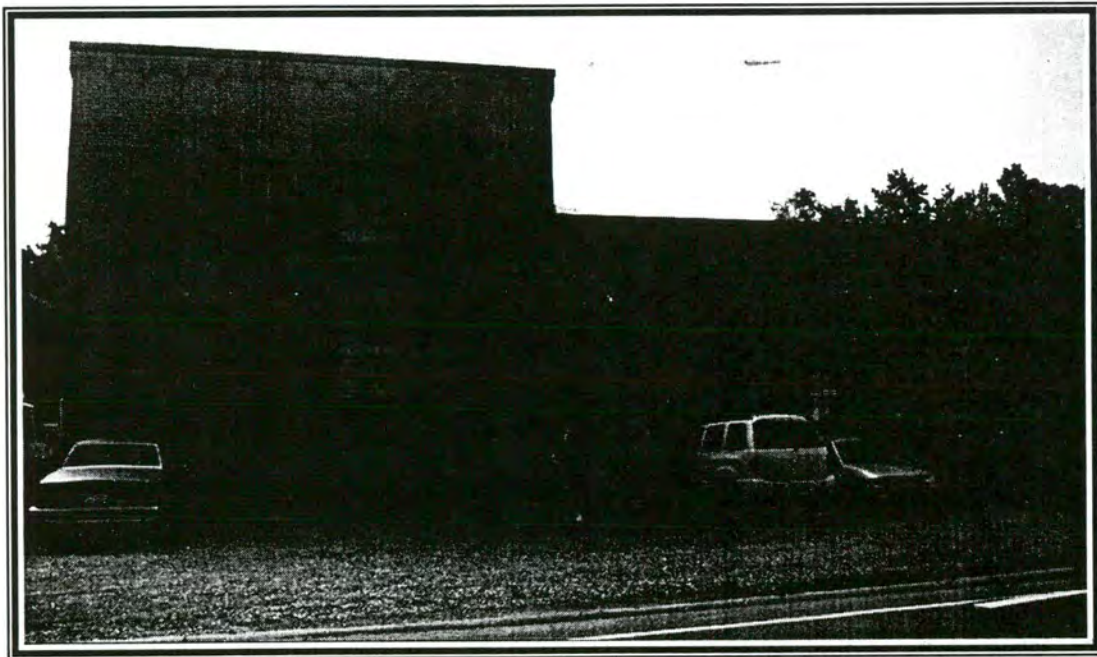


Figure 14 - Central Heating Plant- Detached Shop

Statement of Significance

The Central Campus Heating Plant, funded by the Duke Endowment, and the adjacent Campus Drive underpass were the first manifestations of an impressive building campaign as Trinity College expanded to become the East Campus of Duke University. The heating plant served all eleven of the East Campus buildings also designed by Horace Trumbauer, providing heat until 1978, when the coal furnaces were replaced with an electric system emanating from the main power plant on West Campus. The heating plant (and associated system of tunnels) was considered to be the most technologically advanced option available at the time of its completion in 1926, and Trumbauer won an AIA award for the Central Campus Heating Plant complex in 1925. The Southern Power Company (which became Duke Power) engineered the logistical operation of the plant, including the transportation of coal by rail to the roof of the boiler and pump building and the lowering of the coal (using gravity) to the furnace below.¹²

Evaluation

The East Campus Central Heating Plant is **eligible** for the National Register under Criterion A (event) for its role in the development of the East Campus of Duke University. *To be eligible under Criterion A the property must retain integrity and must be associated with a specific event marking an important moment in American History or a pattern of events or historic trend that made a significant contribution to the development of a community. Furthermore, the property must have existed at the time and be documented to be associated with the events. Finally, the property's specific association must be important as well.*¹³ The construction of the East Campus Central Heating Plant marked the revival of the old Trinity College campus as the East Campus of Duke University in 1924.

The East Campus Central Heating Plant is **not eligible** for the National Register under Criterion B (person). *For a property to be eligible for significance under Criterion B, it must retain integrity and 1) be associated with the lives of persons significant in our past, i.e., individuals whose activities are demonstrably important within a local, state or national historic context; 2) be normally associated with a person's productive life, reflecting the time period when he/she achieved significance; and 3) should be compared to other associated properties to identify those that best represent the person's historic contributions. Furthermore, a property is not eligible if its only justification for significance is that it was owned or*

¹² "Duke University News Service Scrapbook No. 12, 1926." Duke University Archives, Perkins Library, Duke University, Durham, NC.

¹³ National Park Service. *National Register Bulletin 15*, 12.

*used by a person who is or was a member of an identifiable profession, class or social or ethnic group.*¹⁴

The East Campus Central Heating Plant is **eligible** for the National Register under Criterion C (design/construction) for its architectural significance and innovative engineering. *For a property to be eligible under this criterion, it must retain integrity and either 1) embody distinctive characteristics of a type, period, or method of construction; 2) represent the work of a master; 3) possess high artistic value; or 4) represent a significant and distinguishable entity whose components lack individual distinction.*¹⁵ Horace Trumbauer designed the East Campus Central Heating Plant and won an AIA award for the building in 1925. The Southern Power Company engineered the heating plant, which reflected not only technological innovation, but also a concern for the comfort and safety of the workers manifested in the automatic gravitational loading of coal into the furnace, large windows and finely finished interior spaces.¹⁶

East Campus Central Heating Plant is **not eligible** for the National Register under Criterion D (potential to yield information). *For a property to be eligible under Criterion D, it must meet two requirements: 1) the property must have, or have had, information to contribute to our understanding of human history or prehistory, and 2) the information must be considered important.*¹⁷

Boundary Description

The East Campus Central Heating Plant boundary should be drawn as an expansion of the Trinity College/East Campus of Duke University proposed National Register district boundary (Figure 5).

Boundary Justification

The East Campus Central Heating Plant complex, located adjacent to Campus Drive, is a natural expansion of the Trinity College/East Campus of Duke University proposed National Register district to include some of the earliest structures designed by Horace Trumbauer and constructed on East Campus. The complex is a significant contributing resource to the Trinity College/East Campus Historic District.

¹⁴ Ibid., 15.

¹⁵ Ibid.

¹⁶ Margo Rettig, "The Physical Description and Critical Assessment of the East Campus Central Heating Plant at Duke University," 2.

¹⁷ *National Register Bulletin 15*, 15.

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