CHARLOTTE WATER WORKS - VEST STATION

This report was composed on September 25, 1990

1. Name and location of the property: The property known as the Charlotte Water Works/Vest Station is located at corner of Beatties Ford Road and Patton Avenue in Charlotte, North Carolina.

2. Name, address and telelphone number of the present owner of the property: The owner of the property is:

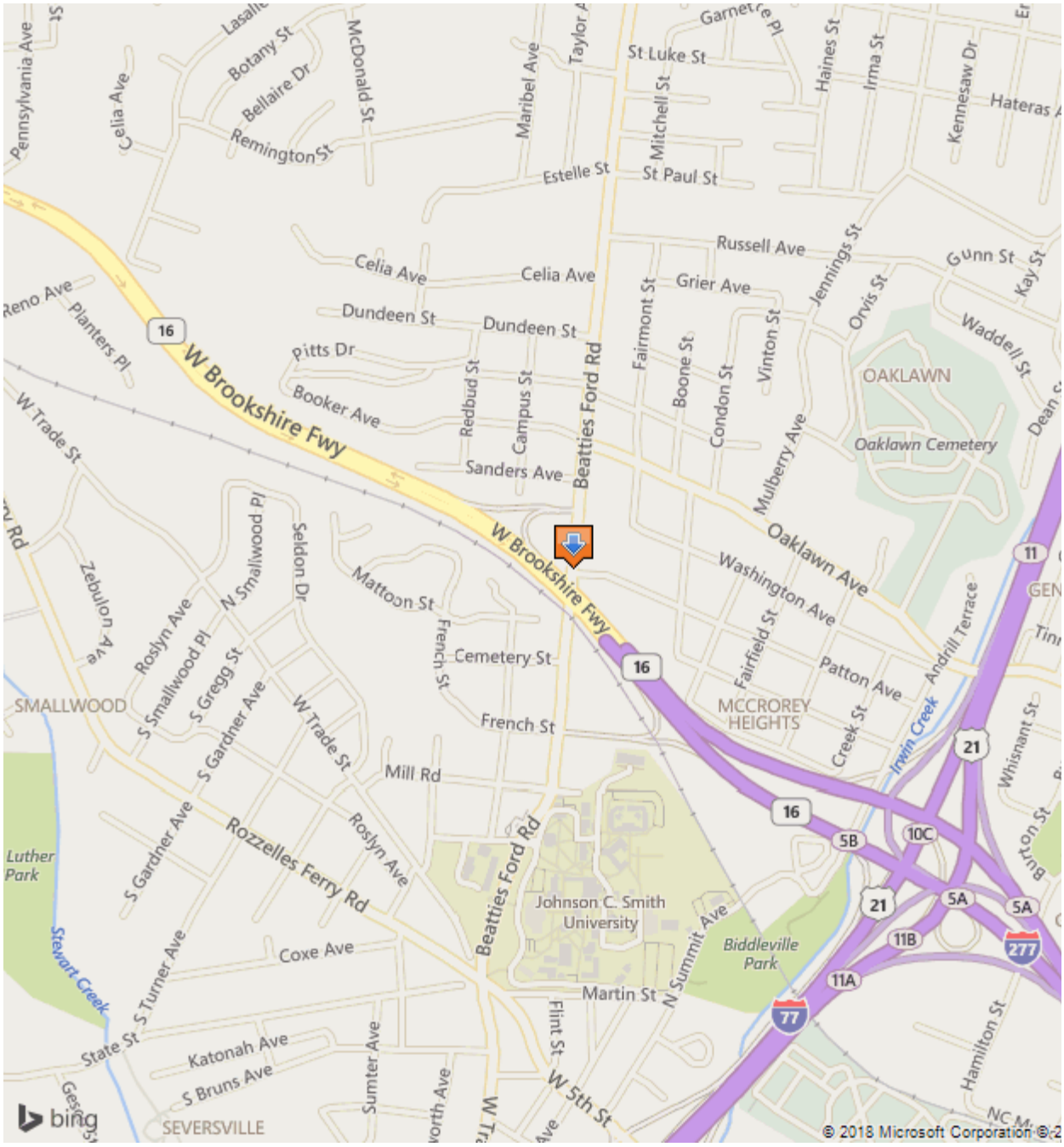
City of Charlotte
CMGC, 600 East Fourth Street
Charlotte, North Carolina 28202

Telephone: (704) 336-2241

Tax Parcel Number: 078-41-501

3. Representative photographs of the property: This report contains representative photographs of the property.

4. A map depicting, the location of the property: This report contains maps which depict the location of the property.



5. Current Deed Book Reference to the property: The City of Charlotte has owned the Property for many years; neither the Mecklenburg County Tax Office nor the City of Charlotte Real Estate Office lists a deed book reference. The Tax Parcel Number of the property is 078-41-501.

6. A brief historical sketch of the property: This report contains a brief historical sketch of the property submitted by Mr. Joe Stowe, Jr. Director, C-MUD; it was researched and written by Ms. Lorraine Loken.

7. A brief architectural description of the property: This report contains a brief architectural description of the property prepared by Ms. Nora M. Black.

8. Documentation of why and in what ways the property meets criteria for designation set forth in N.C.G.S. 160A-400.5:

a. Special significance in terms of its history, architecture, and/or cultural importance: The Commission judges that the property known as the Charlotte Water Works/Vest Station does possess special significance in terms of Charlotte-Mecklenburg. The Commission bases its judgment on the following considerations:
1) The Charlotte Water Works was designed in 1922 Wm. M. Piatt, a well-known Durham engineer;
2) when completed in 1924, it was the largest and best equipped treatment plant in the state;
3) an addition designed in 1937 B. Atwood Skinner and T. S. Simpson, Jr. (architects) and George S. Rawlins (engineer) doubled the capacity of the plant and made it a "state of the art" water treatment plant;
4) the building was named Vest Station in honor of W. E. Vest, General Superintendent of the Charlotte Water Department for more than 30 years;
5) in 1949, Charlotte became the first city in the Southeast United States to use flouridation in the water at Vest Station;
6) the Moderne style of the building is an excellent example of the civic and commercial architecture of 1920-1940; and
7) Charlotte Water Works/ Vest Station provides a stable element in the changing Beatties Ford Road corridor.

b. Integrity of design, setting, workmanship, materials, feeling, and/or association: The Commission contents that the architectural description by Ms. Nora M. Black which is included in this report demonstrates that the Charlotte Water Works/Vest Station meets this criterion.

9. Ad Valorem Tax Appraisal: The Commission is aware that designation would allow the owner to apply for an automatic deferral of 50% of the Ad Valorem taxes on all or any portion of the property which becomes a designated "historic landmark." The current appraised value of the improvements is $12,549,600. The current appraised value of the 9.3 acres is $546,900. The total appraised value of the property is $13,096,500. The property is zoned I-2.

Date of Presentation of This Report: 25 September 1990

Prepared by: Dr. Dan L. Morrill
in conjunction with
Nora M. Black
Charlotte-Mecklenburg Historic Landmarks Commission
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Historical Overview

Submitted by:
Charlotte Mecklenburg Utility Department
Joe Stowe, Jr., Director

Researched and Written by:
Lorraine V. Loken
September 21, 1990

Why Vest Water Treatment Plant Should Be Considered for "Historic Landmark" Status

Entering the inner city from the northwestern gate, one cannot help but notice the Vest Station Water Treatment Plant and its two towering water tanks. The classic government design gives a sense of balance and power, while the obvious purpose of the plant leaves you with confidence that Charlotte's water needs are being met. In fact, it was this city's ability to provide a pure and plentiful water supply that enabled it to become the largest city in the region. The impact of its existence on the development of Charlotte, its technological leadership in the industry and in the state, its neoclassical Art Deco style architecture, are all reasons why the Vest Station Building should be considered an Historic Landmark. In order to understand Vest Water Treatment Plant's historic significance, one must first look at the impetus that led this once small town to take such a major step in its water producing capabilities.

During the water famine of 1911, Charlotte lived through a desperate situation. Big Sugaw Creek, now called Irwin Creek, was Charlotte's only water supply. The worst drought in 50 years reached its peak in July of that year when the reservoir, then located 3/4 mile east of the future Vest plant site, dried up. Conditions became so severe that authorities were forced to have water shipped in by train from the Catawba River and surrounding cities. [1] So little water was available that it was shut off except at intervals when the flushing of sewers was required. W. E. Vest, Superintendent of the Charlotte Water Works at that time, remembered the nightmare:

Streams of people carrying containers of all kinds constantly visited the three artesian wells in the city at that time. Many citizens will recall the commotion in Charlotte households at certain hours as the inmates hastened to fill up the receptacles of all kinds, bath tubs and etc., at the words, "Hurry up, its almost time to cut the water off." ("Interesting Carolina People," *The Charlotte Observer*, 1935)

Police literally removed water sprinkling systems from citizen's yards. Pipe organs with water furnished motor power could not play on Sundays. Factories and shops were forced to close, causing economic hardship. All of this was minor compared to the basic inconvenience of not being able to bathe when needed and the potential health hazards the city faced. Charlotte citizens had now internalized the true value of water as reported in the following newspaper article:

It has had the effect of bringing to a realization of the public generally the prime necessity of this, the commonest of articles. People have regarded water just about as they do the sunshine and only appreciate it after it has been taken away. ("Water Crisis Nearing Highest State of Intensity by Service Suspension," *Charlotte Daily Observer,* July 29, 1911 p. 3)

If all of this was not enough, city government became concerned about how reports of the disaster would affect their ability to attract business in the future. Negative reports of Charlotte conditions in northern cities began to worry them:

For instance, in Tuesday's *New York Herald* and Tuesday's *Baltimore Sun* there appeared stories which were nothing short of harmful to the municipality, particularly in view of the fact that the city is going to have to float an $815,000 bond issue at an early date and then, too, for the reason that with Charlotte just now on the threshold of a great development, the city must necessarily look to the larger financial centers for assistance. ("Improvement Is Marked," *Charlotte Daily Observer,* August 3, 1911, p. 7)

Regretting they had not heeded the warning and vision of former Superintendent C. H. Campbell to hook up to the Catawba River, City Alderman now moved swiftly [2]. Needless to say, there was little trouble getting Charlotte's citizens to support and fund a piping and pumping system from a pure and plentiful source, the great Catawba River. Survey, estimates and signing of contracts were done quickly and construction went forward rapidly. By April 1912, supply was no longer a threat and Charlotte had made the first step in a two step process that would allow it the lifeline to become the most progressive industrial city in the South. Vest Water Treatment Plant was the second.

By 1918, only six years after the Hoskins Reservoir and Catawba Pump Station were built, the city had already begun to feel its growing pains. The old filtration plant on Big Sugar Creek, put into operation in 1905, was located inconveniently to the Catawba River. It was equipped with wooden tubs which showed definite signs of decay. In addition, Camp Greene, a military base then located in Charlotte, had experienced sanitation problems and was threatening to move if its water needs were not met [3]. In a study of Charlotte's water supply, consultants Anderson and Christie, Inc., talked about continuing the next steps for ensuring a plentiful supply:

... the City has already taken proper steps towards a supply which should be adequate for the needs of the City for the next generation. The steps which have been taken, however, were only the beginning . . . within the period of six years the City has reached the necessity of carrying out the second stage of development of a complete and up-to-date water supply system. ("Report Upon Existing Water Supply Conditions of the City of Charlotte with Recommendations," 1918, p. 1)

The city's population was now 50,000, the largest in the state. For public spirit and business progressiveness, it was excelled by no other city of its size in the South. Step two, a sophisticated, water purification plant, was imminent if Charlotte was to continue the pattern of growth it had developed since its last water crisis.

Construction began in 1922 and was completed in 1924 on a larger, more modern filtration plant fully equipped with up-to-date devices for purifying and handling water. The main structures of this plant included a chemical house with well-equipped laboratory, coagulation basins, filters with a rated capacity of 8,300,000 gallons per day, pumping room, 3,000,000 gallons clear water storage and an elevated 1,000,000 gallon storage tank at the head of the distribution system [4]. Designed by William N. Piatt, Engineer, it was the largest and best equipped treatment plant in the state. It was located in the western part of the county, just outside the city limits, on Beatties Ford Road at the Seaboard Railway - the last stop of the old Charlotte Trolley.

By 1936 the city was having extreme difficulty in meeting the demand, both in supply and purification facilities. A program of expansion was begun to increase facilities in all phases of the water supply, treatment and distribution systems. Additions completed in 1939 doubled the capacity of settling basins and rapid sand filters, added 1.75 million gallons to the finished water ground level storage capacity and 4.75 million gallons finished-water storage. A new 10 million gallons per day, electrically driven pumping unit was installed to provide additional pumping facilities for the distribution system service. All electric units were sized to provide an economical pumping cycle utilizing various combinations of pumping units, adding to the notable efficiency of the plant. Total treated water capacity was now 16.7 million gallons per day. The $1,340,000 expansion program represented a major advancement in Charlotte's development and was recognized by industry leaders as a milestone in the progress of waterworks." B. Atwood Skinner and T. S. Simpson, Jr., were glowingly complimented for their architectural design and George S. Rawlins for his engineering design and construction. A banquet of 400 industry and construction leaders gathered to tour the plant, celebrate and hear the acceptance by Warren Booker of the State Board of Health:

"I feel that you and I have been privileged to look over and to examine into one of the newest and one of the most unique and worthwhile pieces of engineering work yet devised for the use and convenience of man in the state of North Carolina." ("Waterworks System Accepted By City," *The Charlotte Observer*, February 22, 1939)

A special section was printed in *The Charlotte Observer* explaining the addition, renovations and features of the plant, as well as the operation of water purification. [5] Industry comments printed in the section included such compliments as "an example of pioneering leadership" and "this puts Charlotte in the big city class." And rightly so - there was much to be proud of in this truly state-of-the-art water treatment plant. The Building was named the Vest Station in honor of W.E. Vest, who was General Superintendent of the Charlotte Water Department for more than 30 years.

In 1946, immediately after the close of World War II, the rapid growth of the city, combined with the lack of expansion during the war years, created a sudden overload on the existing facilities. An expansion program was completed in 1949. The ground level finished-water storage was increased by 5.75 million gallons, thus providing a total storage at this location of approximately 11.75 million gallons. Additional chemical feeder and chlorination capacity was added to treat properly the full capacity of the plant. Vest Station now had the capacity to settle and filter approximately 25 million gallons per day. [6] Having reached its physical limits, this was and will be the Vest Station's last expansion effort.

It should also be noted, in tribute to the Vest Station, that in 1949 Charlotte was the first city to use fluoridation in the Southeastern United States. Vest Station executed a closely controlled program of feeding and checking quantities of fluoride going into and remaining in the system. As a result, Charlotte was awarded a "Certificate of Recognition" in 1989 by the National Institute of Dental Research for its vanguard role in what has proven to be the "single greatest advancement in dental health history." Although Charlotte-Mecklenburg's water needs have long since surpassed the Vest plant's limited capacity, its high efficiency and economical operation continue to make it a valuable asset to the community's overall water system. The compactness of the original design, together with covered filters (no longer affordable by modern water plants) is unequaled for ease of plant maintenance. Water from the plant continues to meet high standards. All future plans by the Charlotte Mecklenburg Utility Department include operation of the Vest Water Treatment Plant. Its longevity is a tribute to the state-of-the-art in 1924 and 1939. The Vest Station building offers the Charlotte Mecklenburg community more than water purification. It is a picture of the past in classic 1920's government style architecture. The building was designed to express strength and order in a facility expected to meet the city's most basic need - water. Vest Station's solid structure has long stood as a pillar of stability in the Beatties Ford Road community. Its physical placement, perched on a hill, makes it a natural landmark. Inside the building, history reigns with grand arched ceilings, marble control tables, heavy black iron instrumentation, and red clay tiles, all well preserved. The wooden rail elevator, with siding tracks leading from the road remind us of the days when supplies and deliveries came from the railroad.

In 66 years of operation, Vest Water Treatment Plant has contributed significantly to the history and the development of Charlotte-Mecklenburg. The conditions and history which led to it being built, the level of technology invested in it, and the style of architecture reflect a government willing to lay the foundation for becoming a major city. Preservation of this building as an historic landmark would be an opportunity to save and teach a very important part of Charlotte's history in its development as the largest city of the region. It is also an opportunity to further

protect the integrity of the Beatties Ford Road neighborhood and the nearby buildings holding the "Historical Landmark" status.

NOTES

[1] Copies of bills from the Seaboard Railway for water shipment, 1911.

[2] Campbell, C. H., Charlotte Water Works 5th Annual Report, 1904.

[3] Anderson and Christie, Inc., "Report Upon Existing Water Supply Conditions of the City of Charlotte with Recommendations," 1918.

[4] Vest, W. E., "Development of the Charlotte Water Works," N.C. Section *AWWA Journal*, 1924.

[5] "Water Works Section," *The Charlotte Observer*, February, 1939.

[6] Franklin, Walter M., "Growth of a Water System," N.C. Section. *AWWA Journal*, 1958.

Architectural Description

Ms. Nora M. Black

The Charlotte Water Works/Vest Station is located in northwest Charlotte on Beatties Ford Road between Patton Avenue and Oaklawn Avenue. Although the entry facade faces Beatties Ford Road, it is impossible to enter the building from that side. Entry is achieved through a door located on the east facade from a driveway connected to Patton Avenue. The building and the tax parcel on which it is sited are owned by the City of Charlotte according to Mecklenburg County Tax Office records; the water treatment facility is operated by the Charlotte-Mecklenburg Utility Department. Despite the age of the structure, the entire facility is in pristine condition. Much of this can be attributed to the fact that there are few workers stationed in the plant. Since the product - water - moves through the plant with the assistance of pumps and gravity, there is little need for human intervention.

1924 section of the Charlotte Water Works/Vest Station The building can be divided into two sections for purposes of description. One portion is the building constructed to house the Charlotte Water Works. Drawings, dated May 1922 with revisions in May 1923, were supplied

to the Charlotte-Mecklenburg Historic Landmarks Commission by the Charlotte-Mecklenburg Utilities Department. The drawings show a design by the firm of Wm. M. Piatt of Durham, North Carolina, an engineering firm still renowned in the Southeast for work in the field of pumping stations.

The Piatt drawings show a concrete building with flat concrete roofs supported by open-web steel joists. The use of the open-web joists provided the ample span needed to cover the gallery of filters and the large pump room. Additionally, the Piatt drawings show the elevations to have tapestry brick to break the monotony of the long industrial facade. When construction was completed in 1924, the main entry facade was on the east elevation. At first glance, this elevation appears to be strictly symmetrical; however closer inspection reveals that there are five bays to the south and six bays to the north of the center bay containing the main entry. The bays are separated by two-story concrete pilasters. A coping of precast concrete in four-foot lengths surrounded the top of the building. Tapestry brick was used as infill material between the windows of the first and second floor and between the cornice molding and the coping. Early photographs of the building show the contrast between the tapestry brick and the concrete used in the structure. Copper downspouts used to drain the flat roofs provide vertical interest on the concrete pilasters.

Windows are of industrial design with metal frames. Each 6/6 sash consists of an upper section with projecting sash and a lower section of fixed sash. The original lights of Prismatic glass diffuse the sunlight entering the large windows. Replacement lights of clear glass stand out in sharp contrast to the original Prismatic glass.

The original main entry consists of a set of double doors of two panels each with glass in the upper panels. Granite steps lead to the doors. The light above the doors is covered with an open metal grate. Although the grate is formed in the Croix Inscrite pattern, the detail is finished in a simple 'Saint Andrew's Cross and Squares" pattern. The door surround was flanked by electric lights shaped like torches topped with glass globes. These two lights are now missing; however, the Charlotte-Mecklenburg Utility Department might consider replacing them. Above the cornice molding over the door, a limestone plaque with depressed letters announces the name of the building, the "Charlotte Water Works." Although no longer the formal entry to the building, most visitors enter through this portal.

The 1924 section of the building was typical of early 20th Century industrial design. The use of concrete as a structural material was well-established by the 1920's; additionally, the use of brick or stone as a facing material was also quite common. In the case of the Charlotte Water Works, the brick facing between the windows and above the cornice molding would have been typical of utilitarian buildings of the era.

1939 section of the Charlotte Water Works/Vest Station

In 1937, a design for an addition was prepared by B. Atwood Skinner and T. S. Simpson, Jr., architects, and George S. Rawlins, engineer. When completed in 1939, industry comments quoted in *The Charlotte Observer*called the newly expanded plant "an example of pioneering leadership" (see Historical survey, page 6). From the point of view of architectural style, the

extensive renovations that accompanied the addition changed the style of the building from a good example of early 20th Century industrial design to an excellent example of Moderne civic architecture. Additionally, the building was named Vest Station to honor W. E. Vest, a longtime general superintendent of the Charlotte Water Department.

Drawings (from 1937) provided to the Charlotte-Mecklenburg Historic Landmarks Commission by the Charlotte-Mecklenburg Utility Department help explain how such a complete change in style was accomplished. The biggest change involved the tapestry brick of the 1924 section. The drawings specify, "All brick areas to be stuccoed. Where brick and concrete faces are flush, extend stucco over concrete to near corner." Those few words directed the change of the 1924 section from a building with the contrast of dark brick to light concrete. The finish of the 1924 section was changed to match the 1939 section - that of a smooth surface with minimal joints and little change in surface texture.

A new entry was constructed facing Beatties Ford Road (west elevation). The two story height of the entry is in sharp contrast to the long, low proportions of the rest of the building. The use of chevrons and both raised and indented surface ornament suggests Art Deco references; the date of the design combined with the sparseness and simplicity of the surface decoration puts the building in the Moderne era.

The new entry has an almost stage-like appearance enhanced by the fact that it is fenced against intrusion; no entry to the porch of the building is possible. Each of the double doors has a single glass panel. A light aluminum grate with a chevron design decorates each door. The transom light above the door has a similar grate with chevron design. The name plaque announces this is "Vest Station, Charlotte Water Works, Water Purification Plant" in raised bronze letters. The indented date panel is an octagon with raised bronze letters forming "1938" centered high above the double door. Originally, two fish pools flanked the sidewalk leading to the steps of the west elevation entry. The pool area is now covered with grass.

The 1939 section has six bays in its long, low portion and three bays in its two-story entry portion. The bays are separated by pilasters with vertical interest added by line carving and side pieces with quarter-round tops. The windows are similar to those previously described for the 1924 section. Separated by the pilasters, each group of windows contains three separate sash. Each group consists of a 15-light fixed sash on either side of a 25-light sash with a projecting sash of 6 lights. The cornice molding on the 1939 section is in two narrow bands adding to the streamlined horizontally.

The walls of the foyer of the 1939 section have a three-band molding near the ceiling; light fixtures are glass and aluminum suspended cones in the Moderne style. The gracefully curved arches of the enclosed filter gallery exhibit some of the same patterns and carved line details of the exterior of the 1939 section. Terrazzo floors shine in the diffused light. In the laboratory, original cabinets with bronze moldings at the base are still in use.

When viewed from Beatties Ford Road, the entire building (both the 1924 and 1939 sections) appears to be sitting high above ground level on a podium. In actuality, what appears to be the podium is the set of walls that surround the sedimentation basins through which the water passes

before entering the filters within the galleries of the actual building. The covered filters galleries are unique; most operators of water treatment plants consider them too expensive.

More important, Charlotte Water Works/Vest Station is unique in that it still performs the exact function for which it was designed; it performs that function so well that no search for an adaptive reuse is ever anticipated. Its enduring presence serves as a landmark in the changing Beatties Ford Road corridor.