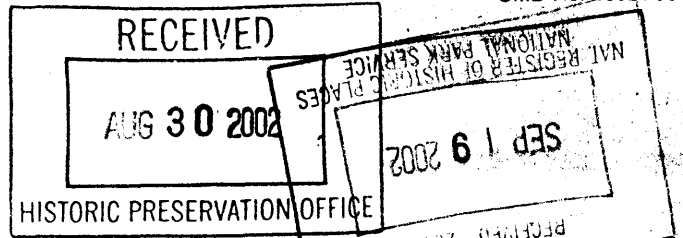


United States Department of the Interior  
National Park Service

National Register of Historic Places  
Registration Form



1253

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Building 17, RCA Victor Company, Camden Plant  
other names/site number Cabinet Factory, RCA Victor Company, Camden Plant; "Nipper Building"

2. Location

street & number 17 Market Street N/A  not for publication  
city or town Camden N/A  vicinity  
state New Jersey code NJ county Camden code 007 zip code 08102

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this  nomination  request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property  meets  does not meet the National Register criteria. I recommend that this property be considered significant  nationally  statewide  locally. ( See continuation sheet for additional comments.)

[Signature] Date 9/18/02  
Signature of certifying official/Title  
Marc A. Matsil, Assistant Commissioner, Natural & Historic Resources/DSHPO  
State of Federal agency and bureau

In my opinion, the property  meets  does not meet the National Register criteria. ( See continuation sheet for additional comments.)

\_\_\_\_\_  
Signature of commenting official/Title Date  
\_\_\_\_\_  
State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

- entered in the National Register.  See continuation sheet.
- determined eligible for the National Register  See continuation sheet.
- determined not eligible for the National Register.
- removed from the National Register.
- other. (explain:)

[Signature] Signature of the Keeper Date of Action 10/4/02  
Edson H. Beall

Name of Property

County and State

5. Classification

Ownership of Property (Check as many boxes as apply)

Category of Property (Check only one box)

Number of Resources within Property (Do not include previously listed resources in the count.)

- private, public-local, public-State, public-Federal

- building(s), district, site, structure, object

Table with 2 columns: Contributing, Noncontributing. Rows for buildings, sites, structures, objects, Total.

Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)

N/A

Number of contributing resources previously listed in the National Register

-0-

6. Function or Use

Historic Functions (Enter categories from instructions)

INDUSTRY/PROCESSING/EXTRACTION / manufacturing facility

Current Functions (Enter categories from instructions)

VACANT/NOT IN USE

7. Description

Architectural Classification (Enter categories from instructions)

LATE 19th AND 20th CENTURY REVIVALS/ Classical Revival

Materials (Enter categories from instructions)

foundation granite, walls brick, concrete, roof synthetic, other limestone (trim)

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Name of Property

County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- X A Property is associated with events that have made a significant contribution to the broad patterns of our history.
B Property is associated with the lives of persons significant in our past.
X C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
D Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance

(Enter categories from instructions)

COMMUNICATIONS

ARCHITECTURE

Period of Significance

1909-1952

Significant Dates

1909 (Original Construction)

1929 (RCA Takeover)

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Ballinger & Perrot

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
B removed from its original location.
C a birthplace or grave.
D a cemetery.
E a reconstructed building, object, or structure.
F a commemorative property.
G less than 50 years of age or achieved significance within the past 50 years.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
previously listed in the National Register
previously determined eligible by the National Register
designated a National Historic Landmark
recorded by Historic American Buildings Survey
recorded by Historic American Engineering Record

Primary location of additional data:

- State Historic Preservation Office
Other State agency
Federal agency
Local government
University
X Other Camden County Historical Society

Name of repository:

Name of Property

County and State

10. Geographical Data

Acreage of Property 3.659

UTM References

(Place additional UTM references on a continuation sheet.)

1 18 489120 4421720
Zone Easting Northing
2

3 Zone Easting Northing
4

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Cynthia Rose Hamilton
organization Powers & Company, Inc. date June 10, 2002
street & number 211 N. 13th Street, Suite 500 telephone 215-636-0192
city or town Philadelphia state PA zip code 19107

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

- A USGS map (7.5 or 15 minute series) indicating the property's location.
A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name The City of Camden Redevelopment Agency
street & number City Hall-13th Floor/6th&Market telephone 856-225-5166
city or town Camden state NJ zip code 08102

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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Building 17, RCA Victor Company, Camden Plant

Camden County, New Jersey

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Building 17, also known as the "Nipper Building" and the "Cabinet Factory," is one of only four remaining buildings from the once expansive RCA Victor Company, Camden Plant (Photos 1, 2 and 5). The building is located on the north side of Market Street between Front Street and Delaware Avenue in the City of Camden, not far from the banks of the Delaware River. The building spans 443 feet along Market Street and has a depth of 270 feet. Building 17 is essentially comprised of five separate buildings constructed around a 38' wide loading courtyard that once housed a railroad siding for the unloading of supplies and for the shipping of finished goods. Buildings 17, 17A, and 17B (Photos 3 and 4) are located north of the courtyard and Buildings 17C (Photo 1) and 17D (Photo 2) are located south of the courtyard. The original section, Building 17 (Photo 4), was constructed in 1909. In 1911, the original section was expanded from four to six stories and was extended 65 feet east with the addition of Building 17A. This building was added to again with the addition of 17B (Photo 3) in 1912, 17C (Photo 2) in 1915, and 17D (including the landmark "Nipper Tower") (Photos 1 and 2) in 1918. The overall organization and details reflect the architect's intention to give the appearance of a unified build with the erection of each individual addition. The collective building is six stories in height with a flat roof and is unified by a common vocabulary of materials; and continuity of massing, rhythm, and detail. The street facades are generally clad in red brick while the courtyard facades contain brick spandrel panels with exposed concrete girders and columns. The building retains the form, features, and characteristics representative of early 20<sup>th</sup> century industrial architecture and thus retains architectural integrity.

The main or south elevation, fronting Market Street, consists of Building 17C (Photo 2) to the east and Building 17D (Photo 1) to the west. This elevation is clad in common bond red brick which with rusticated piers at the 1<sup>st</sup> story (Photos 1, 2, 5 and 6). Unifying features include a granite raised base and limestone lintels, beltcourses and parapet ornaments. The main façade (Photos 1 and 2) is symmetrical in organization with the center Nipper tower flanked by 8-bay wide sections. Each bay on the flanking sections is divided by narrow pilasters that project slightly from the wall plane, emphasizing the verticality of the structure. These pilasters terminate above the cornice line with limestone ornaments that evoke the Art Deco style. The entire cornice is corbelled and the end bays each contain a pediment at the parapet. The ground story windows have been removed and the openings are infilled with brick and stucco (Photos 1 and 2). The windows on the upper stories of the 8-bay wings have also been removed. Historic photographs document that these openings originally contained 15-light industrial steel sash grouped with four units per opening. The 75' high Nipper tower (Photos 1 and 2) is clad in brick on each of the four elevations. It is a notable example of the use of an architectural feature to house the water supply tanks and other utilities. Contemporary industrial complexes typically contained unsightly water supply tanks perched on the rooftops. The tower contains three bays of 30-light industrial steel sash with outer bays of narrow vertically-oriented 4-light sash. Massive projecting limestone balconies are positioned beneath the uppermost window on each facade. The landmark Nipper stained glass round windows are

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Building 17, RCA Victor Company, Camden Plant

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located on each face of the tower near the rooftop. The tower denotes the building's main entrance (Photo 5) which is a wide opening framed in limestone with "Victor" incised across the top and carved company logos to either side. Original ornamental iron gates provide security in lieu of doors (Photos 5 and 6). With the completion of Building 17D, this entrance served as the main pedestrian entrance and also would have allowed for the passage of trucks into the loading courtyard.

The east elevation is comprised of Building 17B to the north and 17C to the south (Photos 2 and 3). This elevation differs from the main elevation in several regards, most notably in its lack of symmetry. The east elevation is 15 bays wide with all but two bays containing groups of windows. The earlier section, 17B, projects slightly toward the street from the later 17C. The two buildings are unified by a raised granite base with molded cap, rusticated brick 1<sup>st</sup> story, limestone belt courses above the 1<sup>st</sup> and 5<sup>th</sup> stories, and a corbelled cornice with limestone pilaster caps that are identical to those on the main elevation. All window openings along the 1<sup>st</sup> story have been boarded-up or infilled. The earlier building, 17B (Photo 3), is seven bays in width and is symmetrical unto itself with five bays of paired, metal clad, 6/6 double-hung sash flanked by the end bays that contain metal clad, 6/6 sash grouped in three. A number of window sash have been removed. The third bay from the north has been infilled with stucco on floors 2-6, evidence of a former five-story bridge to a neighboring building that once existed at this location. An entrance to this section is located in the 4<sup>th</sup> bay from the north end and this entrance contains a limestone surround with decorative keystone. The doors were removed at some point and the entrance is boarded-up.

Building 17C (Photo 2) comprises the southern eight bays of this elevation. The southernmost bay projects slightly toward the street and contains the pediment at the cornice. That bay contains three window openings per floor with a single limestone lintel above. The northern two openings contain 18-light, steel, fixed sash. All windows have been removed from the southernmost openings, however, surviving iron balconette railings suggest that French doors might have been located in these openings. An entrance is located at the south end, however, the doors have been removed and the opening boarded-up. Continuing north, the 2<sup>nd</sup> and 8<sup>th</sup> bays contain a single window per floor with 8/8, clad wood sash. The openings at the 3<sup>rd</sup> bay were infilled with stucco upon removal of the former bridge at this location. The remaining bays contain paired 6/6, clad wood sash, though some window sash have been removed. The 6<sup>th</sup> and 7<sup>th</sup> bays contain a single large opening at the first story that once allowed the train cars to pass in and out of the building. The opening has since been boarded-up.

The north elevation best demonstrates the architect's challenge in attempting to unify the various additions. The earliest section, Building 17 (Photo 4), comprises the eight westernmost bays, and originally stood as a 4-story structure. A lesser concern for aesthetic is evident on this section which contains exposed reinforced concrete framework with brick used only for

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Building 17, RCA Victor Company, Camden Plant

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spandrel panels. The westernmost bay does not contain any brick cladding. That bay is wider than the remaining with 4/4 sash grouped in four. The six bays to the east contain 4/4 sash grouped in three. The easternmost bay is comprised of a projecting exterior fire tower that was a typical provision in industrial and commercial buildings of that period. All 1<sup>st</sup> story windows have been covered over with metal panning. An entrance is located at the base of the fire tower, though the doors have been removed.

Building 17A (Photos 3 and 4), which was constructed two years after Building 17, comprises the five bays to the east. At the time this section was erected, the two upper stories were added to Building 17 and the bracketed cornice with wide eaves was added to unify the two structures. Like the original Building 17, Building 17A contains 4/4, metal clad, double hung sash grouped in three. Many of the windows on both sections have been subsequently removed. An addition was added to the first two stories at some point and that addition projects out from the building considerably. All windows have been removed or boarded-up on the addition.

The north elevation of Building 17B (Photo 3) is comprised of nine bays with grouped windows in each bay. Like the previous buildings, this elevation is constructed of reinforced concrete framework with brick spandrels. A projecting brick tower comprises the westernmost bay and contains washrooms that were added c. 1915. The seven bays to the east contain 4/4 metal clad windows with a lower pivot sash. These windows are grouped in four. The easternmost bay is clad in brick and contains limestone lintels and the pediment that is common to the south and east elevations. This bay contains 6/6, metal clad, double hung sash grouped in three. A 1-story flat roof addition projects from the north elevation and contains no significant architectural features or detailing.

The west elevation is comprised of Building 17 (Photo 4) to the north and Building 17D (Photo 1) to the south. A number of years lapsed between the construction of these sections and there was much more concern for aesthetic at the time Building 17D was erected and thus the two sections clearly read as separate builds on this elevation, with no attempt at unification. Building 17 is comprised of the seven northernmost bays and contains exposed reinforced concrete framework with brick spandrels. The windows are 4/4, metal clad, double hung, sash grouped in three, with the outermost bays containing groups of four. Many of the windows have been removed. The bracketed cornice crowns the west elevation of Building 17 (Photos 14 and 15).

The west elevation of Building 17D (Photo 1) contains the vocabulary of materials established on the main elevation with a raised granite base, limestone beltcourses, and red brick cladding. Dividing the bays are narrow brick pilasters capped with limestone ornaments. A projecting brick tower forms the northernmost bay. Continuing south, the next six bays contain paired

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fixed 20-light steel sash, though a number have been removed. The first story contains the former rail car entrance in the northern two bays, and the next four bays served as loading locks with roll-down metal doors. The southernmost bay contains the pediment at the cornice and rusticated brick at the first story. An entrance with granite steps and limestone surround with columns supporting a carved entablature are located in this bay (Photo 6). Iron gates are located within the opening. None of the windows above the entrance survives, however, metal balconette railings indicate that these openings may have contained French doors.

As evident in the photographs, the courtyard elevations (Photos 7, 8, 9 and 10) contain brick spandrel panels with exposed concrete girders and columns. Portions of the brick have been painted. The windows generally follow the types identified on the exterior elevations as previously described. A number of window openings have been infilled with concrete block. The courtyard is paved in concrete with areas of brick and Belgian block. Sections of the rail lines remain visible in some locations.

All cabinetry for the Victor Company was produced in this building and the interior organization and finishes reflects the utilitarian usage. The interior is largely laid out in an open plan on each floor interrupted only by the regularly spaced exposed concrete columns. Improvements in engineering and concrete technologies are reflected in the column types and spacing as evident in comparing the structural organization of the original Building 17 with the final Building 17D. At the time Building 17 was constructed, reinforced concrete construction was a newly developed technology and as evident in the photographs, the earliest section of the building contains narrow round columns, spaced relatively close with concrete joists (Photo 18). Concrete construction essentially mimicked wood frame construction at that time. By the time 17D was erected in 1918, reinforced concrete technology had vastly progressed and 17D contains wide round columns spaced at 24' distances, with funnel caps and drop panels (Photos 15, 16 and 17). This technology allowed for taller ceilings without the need for joists, and columns spaced at much greater distances. An additional advance was the introduction of hollow columns that allowed for a ventilation system within the building.

The floors and ceilings throughout the building are concrete, and the walls are painted brick and concrete. There is no trimwork and no significant architectural features. Circulation throughout the building is provided by the main ramp in 17C (Photos 11 and 12), which is entirely constructed of reinforced concrete. This was a significant improvement in fire safety technology over the earlier exterior fire towers. The ramp is 11 feet wide and has a pitch of 1 ¾ inch per foot. A brick fire tower is located on the north wall of Building 17 and contains concrete treads and risers and brick walls. Another stair is located in the southwest corner of Building 17D and contains concrete treads and risers and brick walls (Photo 14). This stair wraps around a single passenger elevator, the only passenger elevator in the building (Photo 13). A number of freight elevators service the building and are enclosed in brick shafts. Three bridges, five stories in



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height, cross the courtyard, connecting Buildings 17, 17A and 17B to 17C and 17D (Photos 7 and 8). Washrooms were located on each floor, along the north wall of Building 17A, and contain painted brick walls and concrete floors. Some modern drywall partitioning has been added in areas throughout the building, particularly on the 3<sup>rd</sup> and 4<sup>th</sup> floors, though this is not of great architectural interest.

The collective Building 17 is an intact example of an early 20<sup>th</sup> century industrial facility and reflects evolving technologies in reinforced concrete construction. The building remains in relatively good condition with the retention of the primary features and retains architectural integrity.

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Building 17, RCA Victor Company, Camden Plant

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The RCA Victor Company, Camden Plant, was home to two of the most significant twentieth century pioneers in communications: The Victor Talking Machine Company, who introduced musical entertainment in the home with its "talking machine" and the Radio Corporation of America (RCA) who pioneered telecommunications, radio and broadcasting. The Camden Plant remains the site of the most significant developments in phonograph, radio and television history.

Four buildings survive from the former 58-acre complex that contained thirty-one buildings and stood as the City of Camden's largest employer.<sup>1</sup> These buildings are commonly known as: the Radio Manufacturing Building (only a section survives), Building 2 (the general office building), Building 8 (the metal manufacturing building), and Building 17 (the "Nipper Building" or cabinet factory). Prominently sited near the waterfront, along Cooper and Market Streets, at the crossing of Front Street, these four buildings stand as the sole survivors from the former "City Within a City." Building 17 meets National Register criteria A and C and gains its significance in the area of Communications for its association with the Victor Talking Machine Company, who dominated the phonograph and record industry for nearly thirty years; and the association with the powerful RCA Victor Corporation, one of the most influential corporations in the history of the nation. Building 17 is also significant in the area of architecture as a significant example of early twentieth century industrial architecture and the work of the prominent firm of Ballinger and Perrot. The period of significance begins in 1909 with the construction of the building and ends in 1952 complying with the National Register's fifty-year requirement. The level of significance is national for its association with the evolution and development of the Victor Talking Machine Company and the Radio Corporation of America.

The City of Camden is located between the Delaware and Cooper Rivers, approximately 30 miles south of Trenton and directly across the Delaware River from Philadelphia. Camden was transformed into an industrialized city in the late nineteenth century, largely a result of its proximity to evolving modes of transportation. In addition to its prized water resources, Camden was serviced by the Camden and Amboy Railroad from 1835 and the Camden and Atlantic Railroad from 1852. Following the success of those companies, more than half a dozen railroad companies constructed lines linking Camden to Philadelphia, Trenton, New York, the Atlantic shoreline and points west by the 1880s.<sup>2</sup> Its close proximity to Philadelphia, which at the time had an established industrial base, and its connection to water and rail transportation, contributed to the rise of industries in Camden from an early date. The late nineteenth century represents the most significant period of development in Camden, with industrial expansion that

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<sup>1</sup> Victor counted all additions as individual buildings. There were approximately 20 structures that stood on the site. Square footage of floor space totaled 2.5 million. The complex sprawled over 58 acres, the equivalent of ten city blocks. Frank O. Barnum, "His Master's Voice" in America: Ninety Years of Communications Pioneering and Progress: Victor Talking Machine Company, Radio Corporation of America, General Electric Company (Camden, NJ: General Electric Company, c. 1991), 124.

<sup>2</sup> "History of Camden," Camden, New Jersey's Official Website, <http://www.ci.camden.nj.us/history.html>

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led to an influx of immigrants and resulting urban growth. One of the city's largest companies during the period was Richard Esterbrook's steel pen factory, which was founded at the foot of Cooper Street in 1858.<sup>3</sup> Joseph Wharton established his Camden Metal Works (later known as the American Nickel Works) at about the same date and this was the major supplier of nickel to the United States Mint.<sup>4</sup> In 1869, Joseph Campbell and Archibald Anderson constructed a modest canning factory, which would later become the internationally renowned Campbell Soup Company. Other significant 19<sup>th</sup> century industries included: woolen mills, iron works, and ship building. In the last decade of the 19<sup>th</sup> century, Eldridge Johnson established a talking machine company in a small one-story shop on Front Street in Camden. From its humble beginnings, Eldridge's Victor Talking Machine Company would grow to international prominence in the industry.

### **CHRONOLOGICAL HISTORY OF BUILDING ACTIVITIES AT THE CAMDEN PLANT**

In 1901, the Victor Talking Machine Company was incorporated, with executive and factory offices on Front Street in Camden and the sales office in the Stephen Girard Building in Philadelphia.<sup>5</sup> In the earliest years, the production process involved coordination with several outside suppliers. The talking machines were built in the company's factory on Front Street and were installed in cabinets manufactured by the Sheip Manufacturing Company.<sup>6</sup> Recording and pressing of the discs were initially also undertaken by outside sources. Recognizing the advantages of in-house production for increased efficiency and economy of production, Eldridge began expanding Victor's capabilities gradually eliminating the need for outside vendors. Business rapidly expanded under this new structure and created an immediate need for plant expansion and consolidation.

To accommodate the phenomenal growth, a number of buildings were acquired and constructed to carry out the vast production operation. Old Building 3 (located at the site of present-day 8) was constructed in 1905 to house the sales offices relocated from Philadelphia and for record pressing. Buildings 6 and 7 were acquired the following year for use as a shipping/warehouse facility and a matrix department. In 1906 and 1907, Buildings 4 (power plant) and 15 (recording studio and research laboratory) were constructed, as was a lumberyard and the old Building 8 (site of later Building 10), the first cabinet factory.<sup>7</sup> In the next five years, several of the buildings were enlarged and a number of divisions in the company were moved around to accommodate the growing number of workers. At this same time, significant improvements were made to the power plant to generate the tremendous power required for the extensive

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<sup>3</sup> "History of Camden," Camden, New Jersey's Official Website, <http://www.ci.camden.nj.us/history.html>.

<sup>4</sup> "History of Camden," Camden, New Jersey's Official Website, <http://www.ci.camden.nj.us/history.html>.

<sup>5</sup> Barnum, 23.

<sup>6</sup> Barnum, 23.

<sup>7</sup> The lumberyard was the largest lumberyard in the world handling African mahogany and other cabinet woods. Barnum, 36, 124 and B.L. Aldridge, *The Victor Talking Machine Company*, Frederic Bayh, editor. (RCA Sales Corp., 1964), 104.

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Building 17, RCA Victor Company, Camden Plant

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facilities.<sup>8</sup> In 1909, due to the tremendous demand for Victrolas, a second cabinet factory was added (Building 17). In 1911, the cabinet factory was expanded from four to six stories and was extended 65 feet east by the addition of Building 17A.<sup>9</sup> This building was added to again in three stages: in 1912, 1915 and 1918.<sup>10</sup> The final section, Building 17D, contains the famous 75' high Nipper tower. By 1912, the Camden facility was fully self-sufficient and had grown to twenty-two buildings.<sup>11</sup>

An extraordinary rate of growth continued through 1920 with the construction of Buildings 1, 5, 9, 11, 12, 13, 18, and 24.<sup>12</sup> Approximately half of Victor's entire capital investment was concentrated in the five years spanning from 1912 to 1917.<sup>13</sup> One of the most notable additions to the complex occurred in 1916, with the construction of the 8-story main office building (Building 2). This building is an impressive architectural achievement that was designed as the flagship of the Camden complex.

During World War I, the company's focus was shifted to wartime manufacturing and a massive facility was constructed (Building 53) on State Street and River Avenue for the manufacture of war materials, specifically detonator cases and shell parts.<sup>14</sup> A lumberyard was established during this same period (Building 50) for the storage of lumber for airplane wings.<sup>15</sup>

The final phase of Camden Plant expansion occurred between 1920-1924. Substantial additions to the power plant were made in 1920-21 in anticipation of future growth. The original cabinet factory (Building 8) was demolished in 1923 to allow for the construction of a new record pressing plant (Building 10). Also during this period, the record materials manufacturing building (Building 13) was expanded and joined to the new record pressing plant. This resulted in a streamlined operation for the manufacture and pressing of Victor records.<sup>16</sup> In 1921, the company reached an all-time high of nearly 55 million record sales.<sup>17</sup> The old record pressing plant (old Building 3) was no longer needed and was demolished in 1924 to make way for the ten-story metal manufacturing building (Building 8). Existing Building 8 was completed in 1924 and was the last significant new construction to occur at the Camden plant by Victor. This building was connected to Building 4 (metal manufacturing/record pressing), Building 18 (metal manufacturing), Building 17 (cabinet factory), and the shipping department.<sup>18</sup> With its

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<sup>8</sup> Aldridge, 104.

<sup>9</sup> Barnum, 36.

<sup>10</sup> Aldridge, 104.

<sup>11</sup> Barnum, 36.

<sup>12</sup> Aldridge, 105.

<sup>13</sup> Barnum, 49.

<sup>14</sup> Aldridge, 105 and Barnum, 75.

<sup>15</sup> Barnum, 84, 85.

<sup>16</sup> Barnum, 92.

<sup>17</sup> Barnum, 92.

<sup>18</sup> Barnum, 92.

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Building 17, RCA Victor Company, Camden Plant

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completion, Victor had assembled an efficient metal manufacturing operation housed within a single complex.

Despite the arrival of the Great Depression, the company (having been acquired by RCA and renamed RCA Victor) moved to expand the Camden Plant, allocating large sums of money into new and improved facilities. The first major building initiative was the construction of Building 3, completed in 1930. Steps were also taken to improve the efficiency of operation such as connecting the cabinet factory to the final test area (Building 24) and connecting the radio chassis assembly area (Building 10) to the final test area (Building 24).<sup>19</sup> As a result, radio sets were being produced in record numbers.

In the mid 20<sup>th</sup>-century, a major consolidation and modernization program was again initiated at the Camden Plant. The program was instituted to provide increased efficiency and greater cost effectiveness in the commercial and government communications operations.<sup>20</sup> The first move involved the donation of Buildings 5, 6 and 7 to Rutgers State University. In 1969 the main administration building (Building 2) and the productions facility (Building 3) were extensively renovated. The second phase began in 1971 with renovations to buildings 4, 8, 10, 13, and 17, and the demolition of the remaining structures between 1968-1977 including buildings 1, 11, 15, 16, and 24. In the years that followed, all buildings would be demolished with the exception of Buildings 2, 8, 17, and a portion of 3, the remaining vestiges from the expansive complex that once dominated Camden's waterfront.

During the 1990s, Building 17 was vacated and subsequently vandalized. The building was recently purchased and plans are underway for an upcoming restoration.

### **SIGNIFICANCE IN COMMUNICATIONS**

The history of the RCA Victor, Camden Plant is the history of two great companies led by two influential men: Eldridge R. Johnson, founder of the Victor Talking Machine Company, and David Sarnoff, President of RCA. The merger of these companies in 1929 formed an alliance that would shape the concept of communications in the twentieth century. The technologies that were developed by these companies at the Camden Plant including those associated with the phonograph, radio and television, would bring sweeping changes to daily life for the world's population and would transform all businesses that rely on the dissemination of information.

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<sup>19</sup> Barnum, 162.

<sup>20</sup> Barnum, 325.

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### The Victor Talking Machine Company

Sound reproduction has its origins in the mid-19<sup>th</sup> century with a French scientist named Leon Scott de Martinville, who in 1857 designed the "phonautograph," which traced the wave form of sound on a cylinder.<sup>21</sup> This machine could only record sound and lacked reproduction capabilities. Thomas Edison is credited with the invention of a sound reproduction machine, and in 1878 he applied for a patent for a "Phonograph or Speaking Machine," marking what is universally recognized as the birth of recorded sound.<sup>22</sup> Considering electric lighting to be of greater importance, Edison quickly moved onto that subject.

A decade later, Chichester Bell and Charles Sumner Tainter improved the process by utilizing wax cylinders and their "Graphophone" competed directly with Edison's tin cylinder phonograph.<sup>23</sup> By 1888, Jesse Lippencott acquired the rights for both the Edison Speaking Phonograph and the Bell Graphophone. At around the same time, Emile Berliner developed a disc record that was played on a hand-powered phonograph called the "Gramophone." In 1896, Eldridge Johnson, then owner of the Eldridge R. Johnson Manufacturing Company at 108 N. Front Street in Camden, developed a spring-motor for the gramophone and an improved sound box, which he sold directly to the Berliner Gramophone Company of Philadelphia.<sup>24</sup> Within the first year, the Berliner Gramophone Company ordered 100, and Johnson's shop grew from 2 to 16 men.<sup>25</sup> By the turn of the twentieth century, Johnson had greatly improved the disc record and with the permission of Berliner, he began independently distributing his product, which rapidly gained universal acceptance.<sup>26</sup> By July 1900, Johnson had moved to 120 N. Front Street where he established *The Consolidated Talking Machine Co.*<sup>27</sup> Soon after, he changed the name of the company to Eldridge R. Johnson. Johnson's plant remained in Camden, but the sales offices were headquartered in the Stephen Girard Building on 12<sup>th</sup> Street in Philadelphia. In January 1900, Johnson began production of his first commercial recording using the record label "Improved Gram-O-Phone Record."<sup>28</sup> The first product line of talking machines was emblazoned with the soon to be famous image of the Nipper dog and "His Master's Voice."<sup>29</sup>

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<sup>21</sup> Barnum, 7.

<sup>22</sup> Edison's phonograph was marketed in Britain by the Edison Bell Company. Barnum, 8 and "Birthplace of Recorded Sound," Menlo Park, Edison, NJ, website: <http://www.edisonnj.org/menlopark/museum.asp>.

<sup>23</sup> Bell and Tainter's Graphophone was marketed by the American Graphophone Company. Barnum, 8.

<sup>24</sup> Johnson became partner with Captain Andrew Scull in the Scull Machine Shop and in 1894 Johnson purchased Scull's interest in the firm and renamed the business Eldridge R. Johnson Manufacturing Company. Barnum, 14, Aldridge 103 and 106, and "Berliner and Eldridge Reeves Johnson," Menlo Park, Edison, NJ, website: <http://www.edisonnj.org/menlopark/museum.asp>.

<sup>25</sup> Aldridge, 103.

<sup>26</sup> Aldridge, 106.

<sup>27</sup> Aldridge, 103.

<sup>28</sup> Barnum, 21.

<sup>29</sup> Barnum, 19 and Aldridge, 103.

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The English painter Francis Barraud created the world famous painting of Nipper listening to "His Master's Voice" in the final years of the nineteenth century. Barraud had observed his dog Nipper listening to his Edison phonograph with a puzzled expression as if he was trying to determine the origins of the voice. In the original version, Nipper was listening to an Edison phonograph with a black horn. While attempting to sell the image to local publishers, it was suggested that the horn should be brass. Barraud visited the offices of the Gramophone Company Ltd. of London to request the loan of a brass horn and he then painted a second version of Nipper with a Berliner Gramophone. Recognizing the potential commercial success, the Gramophone Company Ltd. paid Barraud 50 for the painting and 50 for the copyright and began using Nipper in its advertising literature in 1899. Johnson acquired the US rights to "His Master's Voice" from Emile Berliner in 1901. The trademark was passed along with the RCA Victor merger and then to GE following the sale of RCA Records to the successor companies.<sup>30</sup>

In 1901, Johnson reorganized the company, renaming it the Victor Talking Machine Company, with Johnson himself serving as the first president.<sup>31</sup> Considering their relatively small size, Victor's manufacturing structure was organized in a complex arrangement during these early years, dependent on a number of outside suppliers to provide the various components necessary for finished assembly. Victor's executive and factory offices were moved to 114 N. Front Street in Camden while the sales offices remained in Philadelphia.<sup>32</sup> The recording lab was also located in Philadelphia. The talking machines were initially built in Johnson's four-story factory at 120 N. Front Street and were installed in cabinets manufactured by the Sheip Manufacturing Company.<sup>33</sup> Pressing of the discs was carried out by the Duranoid Manufacturing Company of Newark until 1902 when a Camden operation at 23 Market Street was established.<sup>34</sup>

Victor faced intense competition in their first year from rivals such as the Columbia Phonograph Company, who marketed their own disc-playing machine. By the close of their first year in business, Victor's sales were a mere \$500.<sup>35</sup> To counter the rising pressures, Victor developed innovative marketing strategies to promote their products. Having acquired the familiar "His Master's Voice" trademark, Victor launched a widespread advertising campaign, which brought near immediate success.<sup>36</sup> At the same time, recognizing the potential for a larger market, Victor established agreements with distributors throughout the country for the merchandising of their products. Within two years of its incorporation, the Victor Talking Machine Company had

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<sup>30</sup> The story of Nipper and "His Master's Voice" is detailed in Barnum, 1-2.

<sup>31</sup> Barnum, 3 and Aldridge, 104.

<sup>32</sup> Barnum, 23.

<sup>33</sup> Barnum, 23.

<sup>34</sup> Barnum, 25.

<sup>35</sup> Barnum, 25.

<sup>36</sup> Barnum, 25.

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over thirty distributors located in all regions of the nation.<sup>37</sup> By 1903, Victor's net profits had increased to nearly \$500,000.<sup>38</sup>

Victor established its first recording laboratory in 1903 at Carnegie Hall in New York City and began recording opera singers.<sup>39</sup> Italian opera sensation, Enrico Caruso signed his first contract with Victor early in 1904 and made his first recordings for Victor at Carnegie Hall.<sup>40</sup> Within a year, Victor would sign a host of international celebrities and for the first time the sounds of great artists were heard by the masses. Advertisements from the period demonstrate Victor's early success in self-promotion:

"The Living Voices of International Celebrities...At the cost of a half-million dollars-we have induced the greatest artists, known on the two continents, to sing or play for the "Victor" Talking Machine...We can't name them all...These famous artists---heretofore heard only in crowded opera houses in the great cities in America and Europe---you can hear in your own home at moderate cost."<sup>41</sup>

Efforts were begun to consolidate the growing operations. Victor's sales office was moved in 1905 from Philadelphia to the old Building 3 in Camden, a five-story structure on the southeast corner of Front and Cooper Streets (later the site of present-day Building 8).<sup>42</sup> This building also served as the factory building, where exposed horn talking machines were assembled with metal parts manufactured by Victor and installed into vendor-supplied cabinets.<sup>43</sup>

By 1905, Johnson's firm had sold over 200,000 Victor talking machines.<sup>44</sup> Despite its popularity, the instrument's exposed horn was considered rather unsightly and so Johnson began designs for a machine that would be less intrusive in the living room. In the summer of 1906, the "Victrola" was introduced with its horn encased in fine cabinetry supplied by the Pooley Furniture Company of Philadelphia.<sup>45</sup> The Victrola was an immediate success. Johnson soon realized the necessity for Victor to manufacture their own cabinetry in order to control quality and design and to increase profits. In 1907, the first Victor cabinet factory (old Building 8) was constructed.

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<sup>37</sup> Aldridge, 108.

<sup>38</sup> Barnum, 31.

<sup>39</sup> Barnum, 28.

<sup>40</sup> Barnum, 28.

<sup>41</sup> While the advertisement states that they cannot name all of the artists, the names and photographs of 13 artists appear on the page. Barnum, 28.

<sup>42</sup> Barnum, 31.

<sup>43</sup> Barnum, 31.

<sup>44</sup> Barnum, 40.

<sup>45</sup> Barnum, 40.



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The success of the Victrola rendered the original cabinet factory almost immediately obsolete, and it became apparent that a new, larger, cabinet factory was necessary. In 1909, Victor employed the Philadelphia architectural firm of Ballinger and Perrot to design a state-of-the-art cabinet factory. Attesting to the continued success, the second cabinet factory (Building 17A) was added to again in 1912, 1915 and 1918.

With the move of the sales office to Camden and the addition of an in-house printing department, Victor began widespread advertising. In April 1906, *The Voice of the Victor* monthly trade publication was introduced to keep dealers informed about new record releases and products.<sup>46</sup> Victor advertisements frequently adorned the cover of the trade publication *The Talking Machine World*, with one cover featuring a photograph of the custom-built Victrola purchased by President Taft for the White House.<sup>47</sup> With the signing of numerous internationally renowned singers, the Victor label became synonymous with the world's greatest performers. An advertising blitz around that time included billboard advertisements and a giant illuminated Nipper at 37<sup>th</sup> Street and Broadway in New York City catapulted "His Master's Voice" into one of America's most recognizable icons.

From 1910 to the beginning of World War I, Victor directed significant sums of money into publicizing Victor products and artists through advertisements in newspapers, magazines, billboards, and storefront windows of Victor dealers.<sup>48</sup> In a technique that Victor repeatedly employed, new models with only subtle changes from the previous year were advertised with great fanfare, creating excitement and curiosity.

The pre-World War I period of 1912-1918 was the most successful era in Victor's history in terms of profits and plant expansion. From 1902 to 1911 the company paid annual dividends of 6% on its privately-held common stock. In 1912, this figure jumped to 20%, and remained 20% the following year before growing to 35% in 1914, 30% in 1915, and 80% in 1916.<sup>49</sup> In this same period, the company sold over 127 million records and 2.5 million instruments.<sup>50</sup> As the company's profits continued to grow, so did the need for plant expansion and approximately half of Victor's entire capital investment was concentrated in the five years spanning from 1912 to 1917.<sup>51</sup> Victor's success was largely attributed to its willingness to continually invest its profit into its facilities and the continuous expansions and improvements thus enabled the company to increase volume and efficiency.<sup>52</sup> When Victor released the first tabletop Victrola in 1911, it sold for \$15, a price that was more affordable than competing Columbia's lowest price machine.<sup>53</sup>

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<sup>46</sup> Barnum, 42.

<sup>47</sup> Barnum, 46.

<sup>48</sup> Barnum, 78.

<sup>49</sup> Barnum, 90.

<sup>50</sup> Barnum, 90.

<sup>51</sup> Barnum, 49.

<sup>52</sup> Barnum, 90.

<sup>53</sup> Barnum, 46.

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Efficiency of operation was the goal of Victor's plant expansion. From assembly to shipment, the manufacture of Victrolas was a streamlined operation, much like automobile production. With an elaborate system of conveyors and tunnels, completed Victrolas were passed along conveyors from the cabinet factory to the metal manufacturing building (Building 18) to the shipping department (Building 1). From shipping, the crated cases were fed along gravity conveyors and elevators to trackside loading docks where they were loaded onto boxcars and shuttled back through the Nipper Building (Building 17) basement rail tunnel by Victor's electric switch engine to the Pennsylvania Railroad waterfront station. The Pennsylvania Railroad lines ran through all major cities along the east coast. This system of streamlined production enabled Victor to increase output at a much higher rate of efficiency.<sup>54</sup>

Many new recording milestones were achieved during this same period. Presidential candidate Woodrow Wilson recorded messages for his presidential campaign on the Victor label in 1912.<sup>55</sup> The following year, Victor assembled its own band to satisfy the public demand for dance music.<sup>56</sup> While the company maintained New York studios, with the completion of the main office building (Building 2), with its 8<sup>th</sup> story auditorium, Victor could accommodate full orchestral recording. In 1917, the year after Building 2 was completed, Victor recorded both the Boston and Philadelphia Symphony Orchestras.<sup>57</sup> The following year, Victor purchased the Trinity Church located on Fifth Street between Market and Cooper Streets in Camden and all orchestral recording sessions were moved there.<sup>58</sup>

Upon entering World War I in 1917, the United States Government solicited the Victor Talking Machine Company for support. Initially, the government retained Victor for special recordings for military skills training.<sup>59</sup> The portability and affordable cost of the tabletop Victrola made this model especially popular with the troops overseas and caused the sales to peak during this period. But, by 1918 the government began to ration raw materials to the manufacturing industry, particularly steel, and all production of the Victrolas was significantly curtailed. The government instead commissioned Victor to produce military equipment such as rifle fittings, detonator cases and shell assemblies.<sup>60</sup> During this period the cabinet factory (Building 17) was dedicated to the production of rifle stocks and fabric-covered wooden biplane wings.<sup>61</sup> The finished biplane wings were too large to fit through the doors and a hole was created in the wall so that they could be removed from the building for transport on barges to the Philadelphia

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<sup>54</sup> The description of the Victrola production process was extracted from Barnum, 76-77.

<sup>55</sup> Barnum, 79.

<sup>56</sup> Barnum, 79.

<sup>57</sup> Barnum, 81.

<sup>58</sup> Barnum, 82.

<sup>59</sup> Barnum, 84.

<sup>60</sup> Barnum, 84.

<sup>61</sup> Barnum, 84.

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Naval Shipyard.<sup>62</sup> To accommodate the growing government commissions, Building 53 was built as a warehouse for the military equipment and a lumberyard was established (50) for the storage of lumber for airplane wings.<sup>63</sup> After the war ended in 1918, Victor began the lengthy process of restructuring the Camden plant to return to pre-war operations.

Following the close of World War I, the company was able to return to normal manufacturing operations. Recording activities continued as well with the addition of a number of prominent artists. Advertisements from the post-war period promoted the great number of important artists who recorded on the Victor label. Period advertisements also promoted the need for the consumer to listen to Victor records on Victor machines only, stating that "Victor Records and Victor Machines are scientifically coordinated and synchronized in the processes of manufacture, and should be used together to secure a perfect reproduction."<sup>64</sup>

The final phase of Camden Plant expansion occurred between 1920 and 1924. This phase involved expansion of the power plant and new buildings erected for record pressing, record materials manufacturing, and metal manufacturing. This resulted in a streamlined operation for the manufacture and pressing of Victor records. In 1921, the company sales reached an all-time high of nearly 55 million record sales.<sup>65</sup> With the completion of these facilities, Victor had assembled an efficient metal manufacturing operation housed within a single complex. This expansion was likely made in anticipation of the introduction of the first radio-phonograph Victrola combinations, which necessitated additional floor place to assemble the motors.<sup>66</sup>

By the mid 1920s, Victor was facing a sharp decline in sales and for the first time the company faced over-production due to the advent of mass-produced radio receivers and the failure of the company to improve the performance of their talking machine.<sup>67</sup> The entire talking machine industry was in a decline due to the arrival of radio. The Radio Corporation of America (RCA) had begun the commercial production of radios in the early 1920s, but at that time, Victor was in the midst of unprecedented sales of Victrolas and was unprepared for the onslaught of new technologies. Radio was electronic unlike the antiquated mechanical Victrolas, and with radio, musical entertainment was free. In an attempt to form an alliance with radio, Victor signed a contract with RCA for the manufacture of radio receivers for insertion in Victrola cabinets. Victor liquidated its old line and in a quick turnaround introduced the Orthophonic and Electrola Victrolas, radio-phonograph combinations.<sup>68</sup>

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<sup>62</sup> Barnum, 87.

<sup>63</sup> Barnum, 84, 85.

<sup>64</sup> Advertisement printed in Barnum, 105.

<sup>65</sup> Barnum, 92.

<sup>66</sup> Barnum, 92.

<sup>67</sup> Aldridge, 105.

<sup>68</sup> Aldridge, 105.

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In the fall of 1925, advertisements began to appear throughout the country that hinted at the upcoming release from Victor. The week before the official unveiling, Victor released an advertisement that demonstrated their effective technique in creating excitement and suspense:

"News of interest to every man and woman in America... Next Monday, November 2<sup>nd</sup>, The most astonishing demonstration ever held will be given throughout the country by dealers in Victor products... It will introduce the most important contribution to music since the invention, 30 years ago, of the Victor Talking Machine... November 2<sup>nd</sup> has been set aside as Victor Day... Victor Day is destined to be a day that will stand out in the history of music."<sup>69</sup>

Days after the November 2<sup>nd</sup> unveiling, Victor dealers throughout the country were sold out of the Orthophonic and Electrola Victrolas and by year-end the company announced that it would release eight more models.<sup>70</sup> Losses were fully recovered within a year, affirming Victor's conviction that radio was not a substitute for recorded music.

Other advertisements from the period suggest that while Victor accepted the public's demand for radio, the company clearly believed that records delivered the quality of sound that appealed to the sophisticated listener:

"Victor presents the ultimate in combination instruments... Victrola with Radiola... here, beyond the shadow of a doubt, is the most comprehensive medium of home-entertainment in the world... the wonderful new Orthophonic Victrola and the latest Radiola, combined in one beautiful cabinet... discs and dials... music from records and music from the air... always at your finger-tips, without regard to hour, day, season, or weather!... The leading products in two distinct fields of entertainment combined!"<sup>71</sup>

The final years of the Victor Talking Machine Company were marked by significant achievements in sound recording. In 1926, the company made the first live recording of the Philadelphia Symphony Orchestra at the Academy of Music in Philadelphia.<sup>72</sup> Prior to this event, all orchestral recording was conducted in studios, which were not built with acoustical considerations. With the success of that recording, Victor recorded the orchestras of most major cities throughout the country. In 1926, Warner Brothers contracted Victor to produce records that were synchronized with silent films.<sup>73</sup> Shortly thereafter, Victor established its own

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<sup>69</sup> Nationwide advertisement for the Orthophonic Victrola printed in Barnum, 114.

<sup>70</sup> Barnum, 114.

<sup>71</sup> Advertisement printed in Barnum, 117.

<sup>72</sup> Barnum, 120.

<sup>73</sup> The first synchronized musical score was for the picture "Don Juan" starring John Barrymore. Barnum, 120.

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synchronized recording operation and produced scores for Paramount and other motion picture studios. Realizing the need for special sound effects, Victor created a "sound effects library," which included sounds of automobiles, tractors, army tanks, trains, cheering crowds and other sounds which they recorded from actual events.<sup>74</sup> Building on their success in synchronized recording, Victor entered the talking motion picture business in early 1929. The first soundtracks were made for short subject "talkies" for Columbia Pictures.<sup>75</sup> In 1927, one of the most significant milestones in the company's history occurred when Victor made a live recording of the reception for Charles Lindbergh upon his arrival from his historic transatlantic flight.<sup>76</sup>

With its global presence, Victor was positioned for takeover, and in March 1929, RCA acquired control. What began as a small one-story machine shop had grown to a 58 acre complex with 2.5 million square feet of floor space.<sup>77</sup> The company operated its own railroad, and had its own water works, hospital, restaurant, printing plant, coal wharf, and lumber yard. The company employed nearly 10,000 people; more than thirty of which had become millionaires.<sup>78</sup> Victor records were produced in over 40 languages and the Victor "Red Seal" label was regarded as the standard in high quality recording. Nipper had become the world's most famous dog and the trademark "His Master's Voice" was recognized throughout the world.

Victor's success was largely attributed to Eldridge Johnson's inventive genius and innovative marketing strategies. Johnson recognized the need for manufacturing efficiency to allow for his products to be sold at a reasonable price. As a result, his company continually outperformed its competitors and set the standard for quality in the industry.

### The Radio Corporation of America (RCA)

Wireless communications began in 1895 when a young Italian electrical engineer named Guglielmo Marconi transmitted the first signal by wireless. The following year he filed his first patent in England with plans to commercialize on his new invention.<sup>79</sup> In 1897, Marconi formed the Wireless Telegraph and Signal Company in England as the first commercial telegraph service.<sup>80</sup> Two years later, the Marconi Wireless Telegraph Company of America (a.k.a. American Marconi) was incorporated.<sup>81</sup> Marconi's two companies launched the first short distance wireless service between shore-based stations and ships at sea. Marconi then set his sights on long distance telegraph communications and in 1901 he received his first transatlantic

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<sup>74</sup> Barnum, 121.

<sup>75</sup> Additional recording equipment was installed in Trinity Church to allow for Victor engineers to re-record soundtracks onto disks. Barnum, 121.

<sup>76</sup> Victor engineers recorded the event live via wire from the Camden laboratory (Building 15). Barnum, 120.

<sup>77</sup> Barnum, 124.

<sup>78</sup> Barnum, 124.

<sup>79</sup> Barnum, 127.

<sup>80</sup> "Marconi Timeline," Marconi website: <http://www.marconi.com/html/about/timeline.htm>.

<sup>81</sup> Barnum, 128.

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radio signal.<sup>82</sup> Soon after, the US Navy adopted telegraph communications in replacement of carrier pigeons. Within a few years, wireless telegraph stations were established on coastlines around the world. One of the earliest and most famous Marconi telegraph operators was David Sarnoff, who would advance to the position of president of RCA and would usher the company to its stature as industry leader.

Born in 1891 in a small village outside of Minsk, Russia, David Sarnoff immigrated to the United States in 1900 and settled in the immigrant ghetto in the lower east side of Manhattan.<sup>83</sup> Sarnoff's father was in failing health and upon graduating from elementary school, David Sarnoff was forced to enter the working world. After a stint with the New York Herald, 15-year-old Sarnoff was hired as a wireless operator in 1906 by the Marconi office in New York City, the first and only wireless service available in New York City at that time.<sup>84</sup> In 1911, Sarnoff was promoted to operator and manager of the Marconi station on top of the John Wanamaker department store in New York City, the most powerful station in New York at that time. It was at this position when on April 14, 1912, Sarnoff received the message that the Titanic had hit an iceberg. As word spread, telegraph stations up and down the coast tried to assist in retrieving information, which caused interference in the airwaves. President Taft ordered all stations off the air, except for the New York Marconi station. For the next three days Sarnoff received the tragic news and relayed it to the world. Shortly after this great catastrophe, Congress quickly passed a new law requiring all ships carrying over 50 persons to be equipped with radio.<sup>85</sup> This unfortunate disaster launched Sarnoff's career.<sup>86</sup>

Radio was at that time merely used as a substitute for wired point-to-point communications. Sarnoff proposed a plan in a 1915 memo to Edward Nally, Vice President of the Marconi Wireless Telegraph Company of America wherein he described what he believed to be the future of the technology:

"I have in mind a plan of development which would make radio a 'household utility' in the same sense as the piano or phonograph. The idea is to bring music into the house by wireless..."<sup>87</sup>

Meanwhile, World War I was underway and President Wilson directed the Navy to take over all wireless ship-to-shore stations, including those of American Marconi. The federal government's takeover transformed the wireless industry, focusing efforts and funds on furthering technological improvements and sorting out patent disputes that had plagued the industry.

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<sup>82</sup> "Marconi Timeline."

<sup>83</sup> Barnum, 129.

<sup>84</sup> Barnum, 128.

<sup>85</sup> Barnum, 130.

<sup>86</sup> Some experts in the field believe that Sarnoff's role in the Titanic disaster has been exaggerated over time. Nevertheless, this account has been widely published.

<sup>87</sup> Barnum, 131.

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American Marconi was the largest supplier of radio equipment to the US Government during the war and Sarnoff, then Commercial Manager for Marconi, was instrumental in sales to the Government.<sup>88</sup> The Navy developed a greater appreciation for radio technology during the war, recognizing that foreign interests must not be allowed to control the industry. They were particularly concerned with American Marconi since this was a British-owned subsidiary. Franklin Delano Roosevelt, then Assistant Secretary of the Navy, was largely responsible for military communications and at the end of the war he and other senior Navy Department officials devised a plan to keep radio patents and technologies in the hands of US controlled companies. Meanwhile, British Marconi was involved in discussions with General Electric to purchase rights to important equipment. In 1919 Roosevelt requested that General Electric suspend its negotiations with Marconi and develop a plan for the establishment of an American organization that could acquire the assets of American Marconi.<sup>89</sup> After three months of negotiations an agreement was reached for the sale of American Marconi.<sup>90</sup>

Under this agreement, RCA was formed in October 1919 and took over the assets of American Marconi and the responsibility for marketing the radio equipment produced by General Electric and Westinghouse.<sup>91</sup>

Back in New York, at the American Marconi office atop the John Wanamaker Store, one of Sarnoff's first initiatives was the development of a plan for broadcasting and the manufacturing of radios.<sup>92</sup> In July 1921, Sarnoff orchestrated the first broadcast, which covered the world heavyweight boxing championship between Jack Dempsey and Georges Carpentier.<sup>93</sup> The following year, RCA, acting as sales agents for Westinghouse and General Electric, introduced the first line of home radio products. Sales reached \$11,000,000 in the first year, followed by \$22,500,000 in 1923 and \$50,000,000 in 1924.<sup>94</sup> Sarnoff was promoted to Vice President in the first year.

Westinghouse, General Electric, AT&T and RCA were all vying for radio audiences. Between 1922 and 1924, the number of radio broadcast stations in the country increased from 600 to 1,400, but program schedules remained inconsistent and broadcasts were not generally intended for entertainment and so the number of stations declined to 620 in 1926.<sup>95</sup>

Recognizing the need for regular program scheduling, Sarnoff promoted the idea of nationwide networks, and, in 1926, the National Broadcasting Company, Inc. (NBC) was organized as a

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<sup>88</sup> Barnum, 131.

<sup>89</sup> Barnum, 132.

<sup>90</sup> Barnum, 132.

<sup>91</sup> "Corporate History," RCA, website: <http://www.rca.com>.

<sup>92</sup> Barnum, 136.

<sup>93</sup> Barnum, 137.

<sup>94</sup> Barnum, 136.

<sup>95</sup> Barnum, 148.

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subsidiary of RCA (though owned by RCA, GE and Westinghouse on a 50/30/20 ratio).<sup>96</sup> Within a year, NBC was operating two networks, which were known as the red network and the blue network.<sup>97</sup>

In the early 1920s, Sarnoff foresaw the possibility of television speculating that, "every farmhouse [would be] equipped not only with a sound-receiving device but with a screen that would mirror the sights of life."<sup>98</sup> In a 1923 memorandum Sarnoff wrote:

"I believe that television, which is the technical name for seeing as well as hearing by radio, will come to pass in due course... It may be that every broadcast receiver for home use will be equipped with a television adjunct by which the instrument will make it possible for those at home to see as well as hear what is going on at the broadcast station."<sup>99</sup>

Sarnoff's plan was tabled for a few years, but by 1925, tests were being undertaken in RCA laboratories on primitive television.<sup>100</sup>

General Electric, Westinghouse and RCA realized the importance of consolidating research and development and manufacturing in a single location to allow for greater flexibility, efficiency and economy. The favored location was Camden, NJ, home of the Victor Talking Machine Company.<sup>101</sup> RCA had been producing radio equipment for Victor since 1925 and was impressed by the company's manufacturing facilities. In 1929, RCA gained a controlling interest in Victor and two new corporations were organized at the Camden Plant: The Audio Vision Appliance (AVA) Company (the manufacturing company jointly operated by General Electric and Westinghouse) and the Radio-Victor Corporation of America (a wholly-owned subsidiary of RCA that was the sole sales agency for all Victor products). With the acquisition of Victor, RCA gained a world-class manufacturing facility as well as a world-renowned product and experienced personnel.

RCA was able to weather the Great Depression, due in part to its diversified product line. Following the Depression, the US Government began to grow increasingly concerned about the phenomenal growth of RCA and decided to intervene. While it was the government that formed the company a decade earlier, the government brought an anti-trust suit against RCA in 1930 out of concern regarding patent pooling. A settlement was reached whereby General Electric

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<sup>96</sup> Barnum, 148.

<sup>97</sup> The blue network eventually became the American Broadcasting Company (ABC). "RCA Corporation," Encarta Encyclopedia, website: [http://encarta.msn.com/index/conciseindex/BF/0BFD2000\\_.htm](http://encarta.msn.com/index/conciseindex/BF/0BFD2000_.htm).

<sup>98</sup> "Corporate History," RCA.

<sup>99</sup> Barnum, 154.

<sup>100</sup> Barnum, 154.

<sup>101</sup> Barnum, 155.



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and Westinghouse agreed to enter into competition with RCA.<sup>102</sup> The RCA Victor Company, Inc., headquartered in Camden, NJ, had become independent with its own laboratories and manufacturing facilities, and its own broadcasting activities.

In the midst of the Great Depression, perhaps to demonstrate the company's vitality following the break-up, construction began on Rockefeller Center, headquarters for RCA and the network studios of NBC. The 60-story RCA Building hailed as the headquarters for RCA and containing the most modern studios for NBC. RCA engineers designed Radio City Music Hall, a landmark of the complex, with sound systems designed and built at RCA Camden.<sup>103</sup>

To further coordinate its manufacturing activities, RCA organized the RCA Manufacturing Company, Inc. in December 1934. The new RCA subsidiary was created by combining the RCA Victor Company in Camden with the RCA Radiation Company, Inc. of Harrison, NJ.<sup>104</sup> Camden was selected as the headquarters for the new company, which was the most complete radio manufacturing center in the world. Over 10,000 people were employed at the Camden facilities, which had become a "city" unto itself.<sup>105</sup>

With the consolidation of RCA, General Electric and Westinghouse at Camden, television developments were accelerated in the 1930s. Dr. Vladimir K. Zworykin was instrumental in the development of the first picture tube and is recognized as a pioneer in television. Zworykin came to the United States from Russia after World War I and joined the research laboratory of Westinghouse in Pittsburgh.<sup>106</sup> In 1929, Zworykin was transferred to the RCA plant at Camden to continue his research in the newly acquired facilities of the Victor Talking Machine Company. It was at this facility that Zworykin headed research in electron optics and photoelectric cells further developing his technologies for practical use.

At the dedication of the RCA Exhibit Building at the New York World's Fair in 1939, Sarnoff exhibited the television with great fanfare. This event was the result of a decade of pioneering developments made at RCA, driven by the research and engineering team at RCA Camden. His dedication speech, "The Birth of an Industry," was recorded by RCA television cameras and transmitted to Radio City where members of the press were granted access to watch the events unfolding. Ten days later, NBC began the first regular public television program service when it

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<sup>102</sup> Barnum, 170.

<sup>103</sup> Barnum, 175.

<sup>104</sup> Barnum, 177.

<sup>105</sup> There is considerable debate in the field over whether it was Vladimir Zworykin or Philo Farnsworth that "invented" the picture tube. In 1934 the US Patent Office rendered a decision awarding priority of invention of the picture tube to Farnsworth. Nevertheless, Zworykin and Farnsworth are generally both recognized as the fathers of television. Time 100: Scientists and Thinkers – Philo Farnsworth, website:

<http://www.time.com/time/time100/scientist/profile/farnsworth.html>

<sup>106</sup> "Corporate History," RCA.

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broadcast the official opening of the Fair by President Franklin Delano Roosevelt.<sup>107</sup> The first commercial television sets were manufactured at RCA Camden in 1939.<sup>108</sup> The manufacture of commercial television station equipment also began at RCA Camden.<sup>109</sup>

Within months after the television was unveiled, Nazi Germany invaded Poland and World War II began. RCA was retained by the United States Government for defense research, development, production and service. RCA's Camden plant focused on research in defense electronics and the laboratories were responsible for pioneering developments in portable communications gear, microwave relays, radar, sonar and television for military use. The war provided funding for further development of television and experiments in color television, though television for public distribution was put on hold during the war years. By mid 1945, RCA began to reconvert its facilities to resume pre-war operations. The Camden plant was responsible for phonograph records and a variety of electronic equipment for commercial applications.<sup>110</sup> In September 1946, the RCA Victor Division introduced the first post-war television sets to the public, produced at the Camden plant.<sup>111</sup>

In the ensuing years, television technology became more sophisticated and television networks were established with regular programming. RCA led the industry and invested heavily in research to advance the technology, culminating in the introduction of color television with the first complete line of televisions in December 1955.<sup>112</sup>

In the 1950s and 1960s, RCA built communications satellites and developed space exploration technology for the US National Aeronautics and Space Agency (NASA). A miniature RCA camera carried on Apollo 7 sent the first live pictures from space in 1968 and astronaut Neil Armstrong's first words from the moon were transmitted from an RCA radio backpack the following year.<sup>113</sup>

In 1966, David Sarnoff submitted his resignation as Chairman of the Board, marking the end of an era at RCA. The next two decades would bring sweeping changes in an effort to diversify and modernize the corporation, effecting its organization, identity and direction. Through a series of acquisitions, this new identity moved the company from the traditional high-technology electronics company to a service-oriented electronics company. As part of this new corporate image, the trademark "His Master's Voice" was discontinued in 1969 with the image of Nipper. The original Nipper stained glass windows in the tower of Building 17 were removed and "RCA" block-style logo windows were installed. The original windows were donated to several

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<sup>107</sup> Barnum, 200.

<sup>108</sup> Barnum, 202.

<sup>109</sup> Barnum, 202.

<sup>110</sup> Barnum, 231.

<sup>111</sup> Barnum, 233.

<sup>112</sup> Barnum, 245.

<sup>113</sup> "RCA Corporation," Encarta Encyclopedia, website: <http://encarta.msn.com/index/conciseindex/BF/0BFD2000.htm>

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repositories. A decade after the modern windows were installed, RCA re-instituted the famous trademark and commissioned the D'Ascenzo Studios to build four new windows.<sup>114</sup> In April 1979, the new Nipper windows were installed. These were again vandalized and a Philadelphia stained glass manufacturer created new windows, based on the original design, in the late 1990s.

A major consolidation and modernization program was initiated at the Camden Plant, intended to provide increased efficiency and greater cost effectiveness in the commercial and government communications operations.<sup>115</sup> Under this plan a number of buildings were donated to Rutgers, the State University, and the remaining buildings were either renovated or demolished.

In the 1980s, RCA's Camden Plant concentrated its efforts on defense communications systems and high-performance recording systems for military and space programs. In 1985, General Electric and RCA agreed to merge their assets to create a combined company that would successfully compete in the global marketplace. Under this new company, the Camden Plant continued to build upon its legacy of communications pioneering, focusing on global defense electronics.

Facing financial difficulties, RCA was forced to sell many of its subsidiaries. In 1986 General Electric purchased RCA for \$6.4 billion and sold RCA's five NBC radio stations, its phonograph record company, as well as other subsidiaries.<sup>116</sup> General Electric, in turn, sold its RCA and GE consumer electronics businesses to Thomson Consumer Electronics at the end of 1987. In 1994, Thomson launched a new age in digital "HOME" entertainment with the RCA Satellite System featuring "DIRECTV" programming.<sup>117</sup>

### **SIGNIFICANCE IN ARCHITECTURE**

Building 17 gains additional significance in architecture as an intact and representative example of early twentieth century industrial architecture and a work of the important architectural and engineering firm of Ballinger & Perrot. Building 17, was one of Ballinger & Perrot's most famous commissions, and one that would contribute to their international reputation for industrial facility design.

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<sup>114</sup> Barnum, 74.

<sup>115</sup> Barnum, 325.

<sup>116</sup> "RCA Corporation," Encarta Encyclopedia, website: <http://encarta.msn.com/index/conciseindex/BF/0BFD2000.htm>

<sup>117</sup> RCA - Corporate History.

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### Ballinger & Perrot

The history of Ballinger & Perrot is one a century of great tradition in building engineering that began with the predecessor firm of Geissinger & Hales. In the decade of the 1880s, Edward Hales rose from draftsman to become a partner in the Philadelphia firm of Geissinger & Hales.<sup>118</sup> A decade later, Hales formed a partnership with one of the firm's young architects, Walter Ballinger. Born in Venango County, Pennsylvania, Walter Ballinger was employed in a factory during his teenage years, where his superiors recognized his keen business aptitude. After working the day shift, he attended courses in the evenings until he could enroll full-time in a business school. In 1889, at the age of 22, Ballinger was employed by the noted architectural firm of Geissinger & Hales, serving as bookkeeper, stenographer and clerk. In 1895, Hales & Ballinger formed their partnership, which lasted until 1901, at which time Hales retired. Chief draftsman, Emile G. Perrot then joined Ballinger in a partnership that lasted until 1920 when Ballinger bought out the interests of his partner and established Ballinger Co., which continues as one of the city's most notable firms of today. Walter Ballinger was widely recognized as a successful businessman, architect and engineer, though his formal training was only in business.

While contemporary architects such as Cope and Stewardson, T.P. Chandler and Frank Miles Day were mostly concerned with historical styles, particularly the English and Renaissance revival styles that appealed to anglophile Philadelphians, Hales & Ballinger maintained an emphasis on architectural engineering, with a technical approach to design. Hales & Ballinger's commissions were concentrated in commercial and industrial structures, building upon the precedent of Geissinger & Hales, a tradition retained by the successor firms of Ballinger & Perrot and Ballinger Co.<sup>119</sup> It was perhaps Ballinger's early achievements in the factory that led to his interest and proficiency in industrial design.

In their six years of partnership, Hales & Ballinger amassed an impressive number of commissions, primarily factories and their associated power houses. Additions and alterations to existing factories and mills comprised the majority of their work in the first years, later designing entire mill complexes.<sup>120</sup> The firm would pioneer the use of reinforced concrete, publishing a book on the subject in 1909.<sup>121</sup> Ballinger is recognized as the co-inventor of the super-span sawtooth roof in the 1920s, a significant advancement in industrial design that incorporated parallel roof surfaces of triangular section, the steeper side of which was glazed

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<sup>118</sup> All biographical information on Hales and Ballinger was extracted from Sandra L. Tatman and Roger W. Moss, *Biographical Dictionary of Philadelphia Architects: 1700-1930* (Boston: G.K. Hall and Company, 1985), 30, 327.

<sup>119</sup> Tatman and Moss, 327.

<sup>120</sup> Building upon the success of Hales and Ballinger, the successor firms were awarded impressive commissions that included the headquarters for the Victor Talking Machine Corporations (subsequently RCA), the first facility for the Joseph M. Campbell Company (now Campbell Soup Co.), and the design of one of the first "computer rooms" for the ENIAC at the University of Pennsylvania. Tatman and Moss, 327-330.

<sup>121</sup> Tatman and Moss, 31.

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allowing natural light to flood column-free factory floors.<sup>122</sup> It was these technological innovations for which the firm established its preeminence in industrial design.

From their inception, Ballinger & Perrot's success was gained through their ability to meet the changing needs of their clients and their enterprises. As reported in a Ballinger Co. firm history, "Ballinger established its early reputation as a single-source firm known chiefly for its technical qualifications and ability to meet the needs of a manufacturing-based economy."<sup>123</sup> Ballinger Co. stakes its claim as one of the largest commercial and industrial design firms in the nation, and the first to integrate the disciplines of architecture and engineering.<sup>124</sup>

Victor's success in the phonograph industry was widely credited to the design of their facility, which employed innovative technologies that expedited production and encouraged a superior product. Ballinger & Perrot employed innovative technologies for the improvement of the product in the most economic manner. Regarded by contemporaries as a "progressive" firm, Victor sought to employ the latest technologies in facility design to keep their company at the forefront of their industry.

In terms of site design, Ballinger & Perrot employed innovative ideas in their layout of the complex by designing the complex arrangement of multi-story bridges and tunnels that allowed for the passage between the buildings.

A proto-type for later industrial complexes, the RCA Victor, Camden Plant represents the achievements in technology and engineering on which Ballinger & Perrot established their reputation. The success of this commission helped to launch their reputation for sophisticated industrial design and within a decade Ballinger's firm would be nationally recognized for their pioneering designs in reinforced concrete construction and later for saw-tooth roof construction. By 1915, Ballinger & Perrot had become one of the largest commercial and industrial firms in the country and one of their most prominent clients was the Victor Talking Machine Co.

### Ballinger & Perrot's Victor Talking Machine Company Commissions

In 1904, Ballinger & Perrot began what was to become a lucrative career in facility design for the Victor Talking Machine Company with the design of a warehouse in Philadelphia. Three years later, Victor commissioned the firm to design two buildings in Camden (old Building 8 and Building 15) and a boiler house in Philadelphia. In 1909, Ballinger & Perrot was commissioned for the design of Building 17, the cabinet factory. They were also retained for the design of the subsequent additions to the cabinet factory (17A, 17B, 17C, and 17D). In 1910, they were commissioned for a Victor building on Broad Street in Philadelphia. In 1914, they designed a

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<sup>122</sup> Ballinger Co., "Firm History." See also, Tatman and Moss, 30.

<sup>123</sup> Ballinger Co., "Firm History."

<sup>124</sup> Ballinger Co., "Firm History."

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dining building, grinding house, shipping building and powerhouse in Camden (presumably Building 13). The following year, Ballinger & Perrot added washrooms to the cabinet factory. In 1919, they were awarded the commission for the design of the grinding building (13A) in Camden. The next year in their final commissions for RCA Victor, they designed building 12A and designed alterations and additions to the powerhouse in Camden.<sup>125</sup>

As the chief architect for Victor, Ballinger & Perrot largely shaped what became known as the "City within a City." Working with Eldridge Johnson, Ballinger & Perrot designed a complex that was intended to operate with great efficiency and economy. An elaborate system of underground tunnels and overhead multi-story bridges linked the various buildings with extensive conveyors that transferred the products through the production process from building to building. Multi-story overhead bridges connected Building 17B to 18A, Building 17C to Building 1 and Building 18A to Building 1. Connecting the cabinet factory, metal manufacturing, final assembly and shipping buildings resulted in a further economized and efficient operation from sub-assembly to final packing and shipping.<sup>126</sup>

In addition to the multi-story bridges that connected the buildings, an extensive system of tunnels linked the buildings underground. From the old powerhouse (Building 4) the tunnel ran through the shipping department (Building 1), crossed Front Street to Building 17C and connected with the basement of 17D. From there, three tunnels crossed beneath the cabinet factory courtyard with links to each of the cabinet factory additions. From the cabinet factory, another tunnel crossed Delaware Avenue through the dry kiln (Building 11) to the new powerhouse (Buildings 9 and 12). Finally a tunnel connected the executive offices (Building 2) with the recording and research laboratory (Building 15) and with the record pressing plant (old Building 3).<sup>127</sup>

Victor had great concern for fire safety as demonstrated by Ballinger & Perrot's design of unique features such as an 11' wide ramp linking all six floors of Building 17C. All employees passed in and out of the building along this ramp without congestion or confusion. During fire drills, it was reported that nearly 5,000 people exited in only 13 ½ minutes.<sup>128</sup> Exterior fire stairs enclosed in brick walls separated the stairs from the main building and required the passing through an exterior balcony to gain access to each floor. Ballinger & Perrot built a reputation for successful fire safety.<sup>129</sup> This design was applied to Buildings 17, 17A and 17B. With the completion of Building 17D, the Victor cabinet factory spanned 443 feet between Delaware Avenue and 2<sup>nd</sup> Street and 270 feet between Market and Cooper Streets.

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<sup>125</sup> Tatman and Moss, Ballinger & Perrot entry, pages 30-43.

<sup>126</sup> Barnum, 54.

<sup>127</sup> A description of the tunnel system can be found in Barnum, 75.

<sup>128</sup> "Cabinet Factory, Victor Talking Machine Company, Camden, NJ," *The American Architect* v. 115, no. 2247 (January 15, 1919): 118.

<sup>129</sup> Ballinger Co. history.

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Building 17 is actually comprised of five separate, but interconnected, units known as Buildings 17, 17A, 17B, 17C, and 17D. Collectively, this building fronts on the north side of Market Street and spans a distance of 443 feet with a depth of 270 feet. A 38 foot wide courtyard traversed by railroad tracks that carried the finished Victrola cabinets to the Delaware River is entered from both the east and west elevations. The building stands six stories in height, and is a reinforced concrete structure, clad in red brick. It was designed with utility in mind, but in an aesthetically pleasing form. The final section, 17D, contains the famous 75' high Nipper tower. The intention of the Nipper Tower was to design an attractive water tower to replace the unsightly freestanding metal towers that stood at the Victor plant. Ballinger & Perrot's design created an architectural landmark that dominated Camden's skyline, which was dotted by the unsightly water towers of neighboring factories. The four, 50,000-gallon water tanks in the Nipper tower were housed on the ninth and tenth floors.<sup>130</sup> Each tank measured 14' in diameter and 40' high. Two of these tanks supplied the sprinkler system and two provided water for sanitary purposes. In addition, there were four 5,000-gallon drinking water tanks, which were supplied with city water. These measured 5' in diameter and 40' high.<sup>131</sup> Pumps located in the basement of the powerhouse supplied the water to the tower. An iron spiral staircase rose between the four large water tanks, continuing past the stained glass windows on the eleventh floor to the rooftop access. The notable D'Ascenzo Studios of Philadelphia was commissioned to design the four stained glass windows for the Nipper Tower at a total cost of \$25,000.<sup>132</sup>

Revolutions in reinforced concrete technology during the period are demonstrated in a comparison of the construction methods and details of the earliest (1909) build with the final addition of 17D in 1918. At the time Buildings 17, 17A and 17B were constructed, reinforced concrete construction remained a relatively new technology and those earliest sections feature narrow, round concrete columns that are closely spaced, mimicking timber construction. Building 17C, built in 1915, is supported by squat square columns with angled capitals that allowed for the columns to be spaced at greater distances than those in the earlier builds. By 1918, the date of construction of 17D, the wide mushroom columns were becoming the standard in factory construction and Ballinger & Perrot incorporated those columns into their design of 17D. The wide mushroom columns were engineered to allow for a much greater distance between columns, which was important for factory floors that often contained large pieces of equipment and machinery.

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<sup>130</sup> Barnum, 70.

<sup>131</sup> Barnum, 70.

<sup>132</sup> The D'Ascenzo Studios, under the direction of Nicola D'Ascenzo, Sr. began designing and crafting stained glass windows in 1896. Other notable works by the firm include: the National Cathedral in Washington, DC, Cathedral of St. John the Divine in New York City, Princeton University Chapel in Princeton, NJ, and the Cooper Branch Free Public Library in Camden. Barnum, 67, 68, 74.

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Of all of Ballinger & Perrot's commissions for Victor, the cabinet factory (Building 17) was their crowning achievement. This building best represents the firm's emphasis on incorporation of state-of-the-art technologies and efficiency in facility design. This commission would launch the firm's national reputation for industrial design.



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### VERBAL BOUNDARY DESCRIPTION

#### City of Camden, Block 71, Lots 2, 4, 8, 9, 17

Beginning at the point of intersection of the southeasterly line of Delaware Avenue (60 feet wide) and the southwesterly line of Cooper Street (100 feet wide), as shown on a certain map hereinafter mentioned and from said beginning point extending thence;

- 1) S 75 degrees 38 minutes 33 seconds E, measured along the southwesterly line of Cooper Street, 438.20 feet to the point of intersection of same with the northwesterly line of Front Street (60 feet wide), thence;
- 2) S 13 degrees 30 minutes 33 seconds W, measured along the northwesterly line of Front Street, 361.84 feet to the point of intersection of same with the northeasterly line of Market Street, (80 feet wide), thence;
- 3) N 75 degrees 34 minutes 05 seconds W, measured along the northeasterly line of Market Street, 443.65 feet to the point of intersection of same with the southwesterly line of Delaware Avenue, as aforementioned, thence;
- 4) N 14 degrees 22 minutes 22 seconds E, measured along the southwesterly line of Delaware Avenue, 361.23 feet to the point and place of beginning.

Containing within said bounds 3.659 acres of land more or less. The nominated property encompasses the entire block. The remaining portion of the block is a paved parking lot.

### BOUNDARY JUSTIFICATION

The boundaries as described are the legal and current boundaries of the nominated property.

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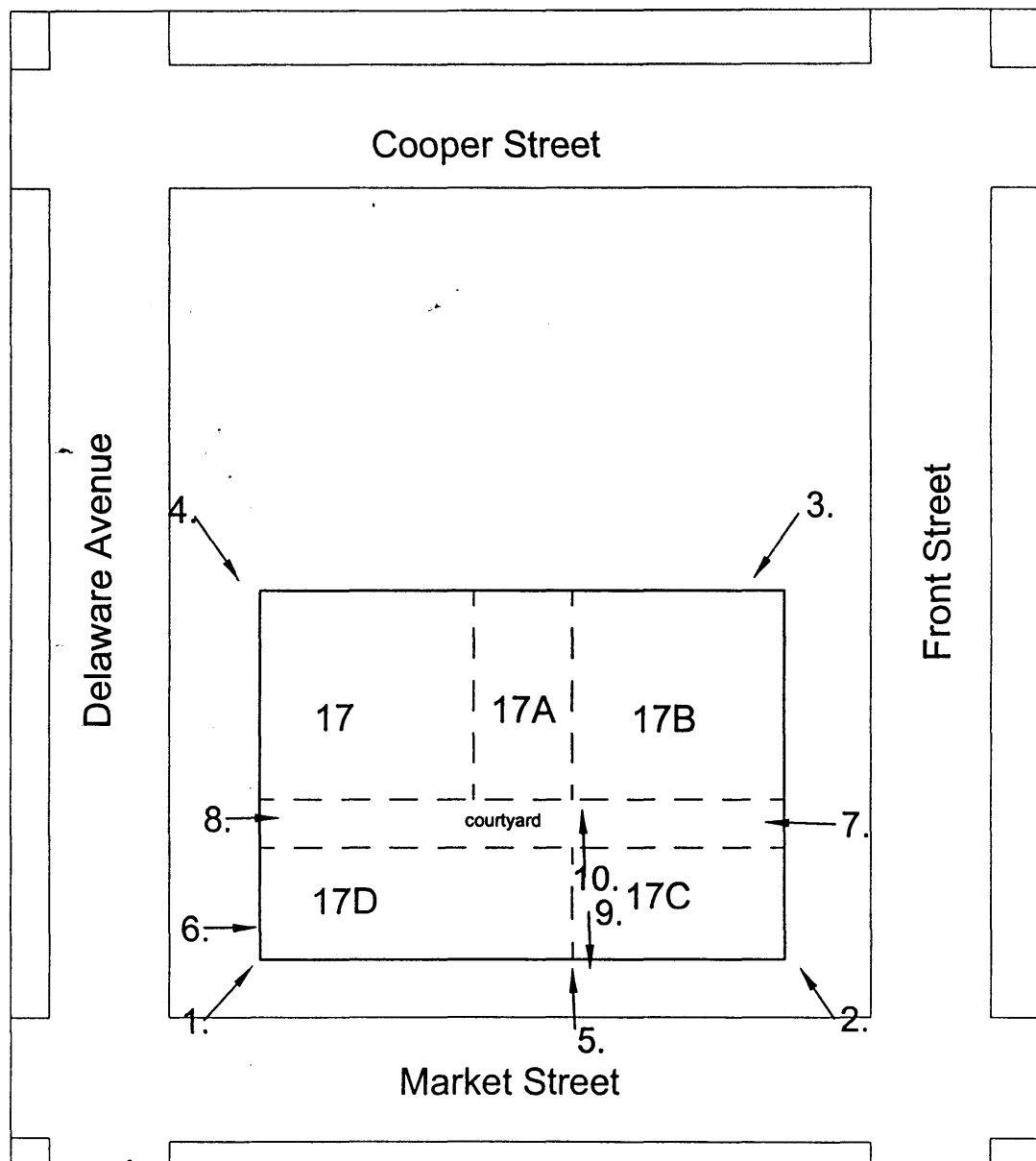
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**Building 17, RCA Victor Company, Camden Plant**  
**Camden, NJ**  
**Robert Powers**  
**May 2001**  
**Powers & Company, Inc.**

<u>Photograph #</u>	<u>Description of View</u>
1	Looking Northeast at West and South Elevations
2	Looking Northwest at South and East Elevations
3	Looking Southwest at North Elevation
4	Looking Southeast at North and West Elevations
5	Detail of Main Entrance on South Elevation
6	Detail of Entrance on West Elevation
7	Looking West in Courtyard
8	Looking East in Courtyard
9	17C, 1 <sup>st</sup> Floor Entrance, Looking South
10	17C, 1 <sup>st</sup> Floor Entrance, Looking North
11	17C, 1 <sup>st</sup> Floor Ramp, Looking North
12	17C, 1 <sup>st</sup> Floor Ramp, Looking South
13	17D, 1 <sup>st</sup> Floor Stair/Elevator in Southwest Corner
14	17D, 1 <sup>st</sup> Floor Stair/Elevator in Southwest Corner
15	17D, 1 <sup>st</sup> Floor, Looking Northeast
16	17D, 1 <sup>st</sup> Floor, Looking Southwest
17	17D, 1 <sup>st</sup> Floor, Detail of Column Capital
18	17, 1 <sup>st</sup> Floor, Looking Southeast

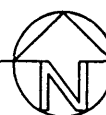
# Building 17, RCA Victor Company, Camden Plant Camden, Camden County, NJ



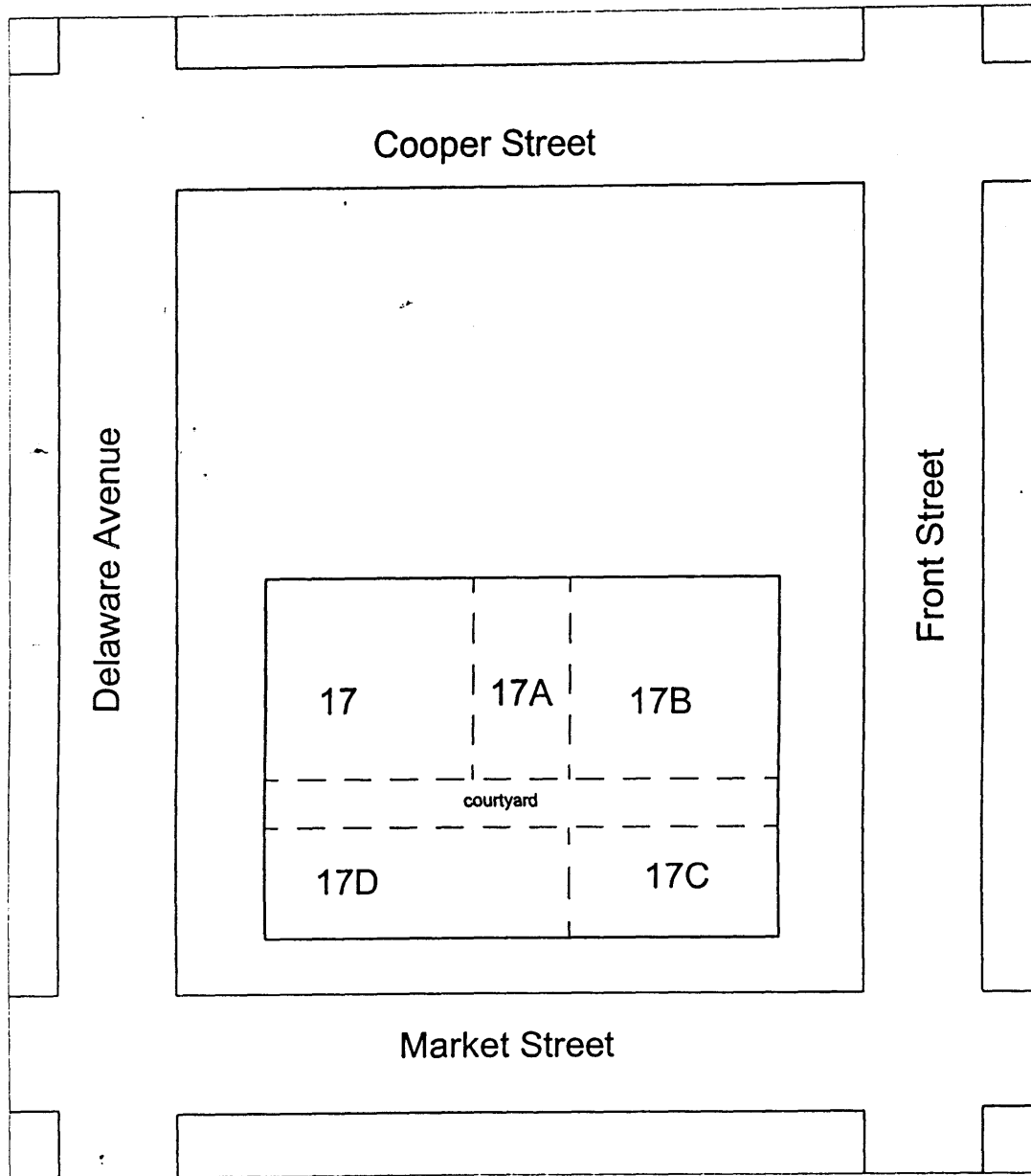
Building	Date Constructed
17	1909
17A	1911
17B	1912
17C	1915
17D	1916

Site Plan

n.t.s.



Building 17, RCA Victor Company,  
Camden Plant



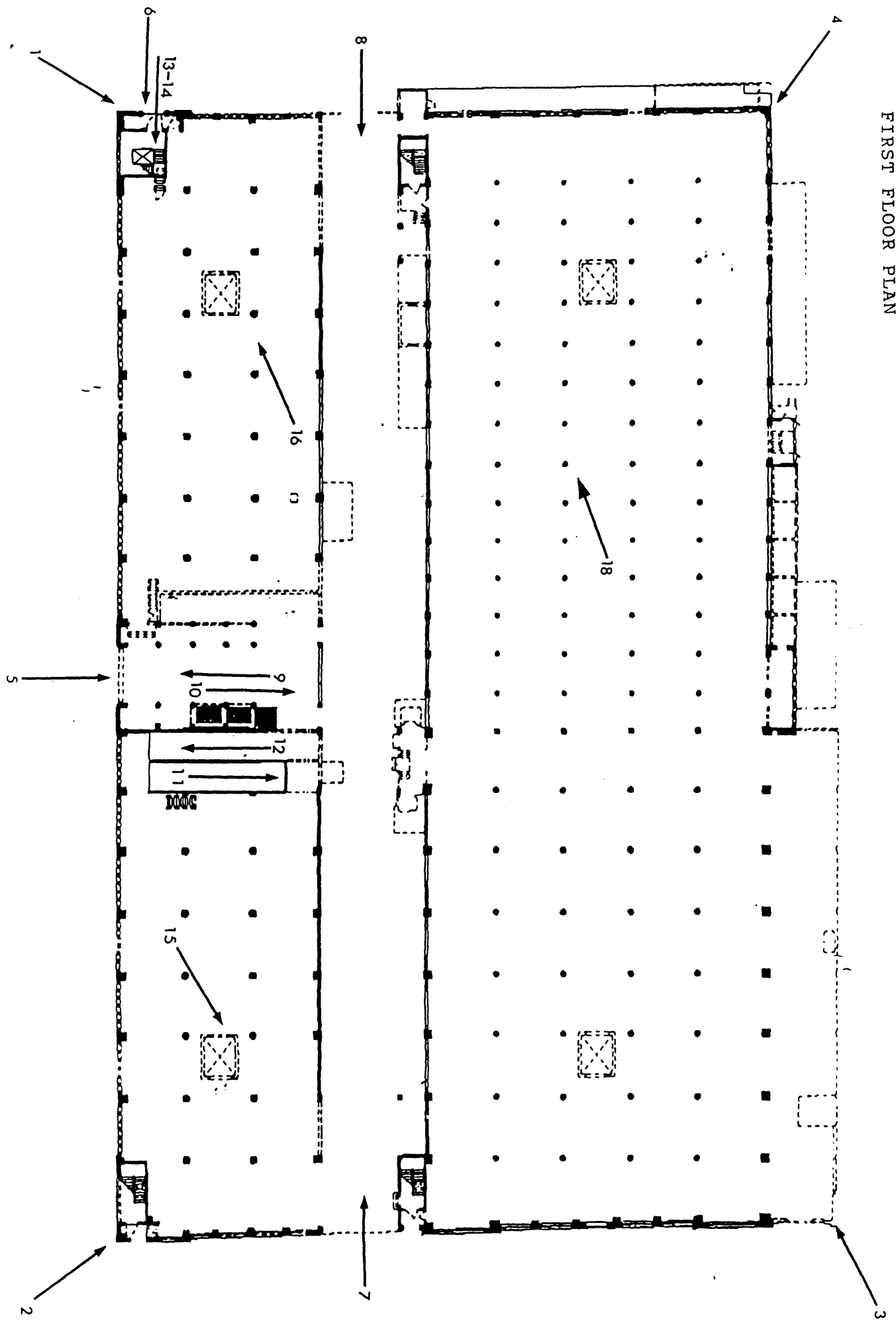
Site Plan

n.t.s.



BUILDING 17, RCA VICTOR COMPANY, NIPPER BUILDING  
CAMDEN, CAMDEN COUNTY, NEW JERSEY

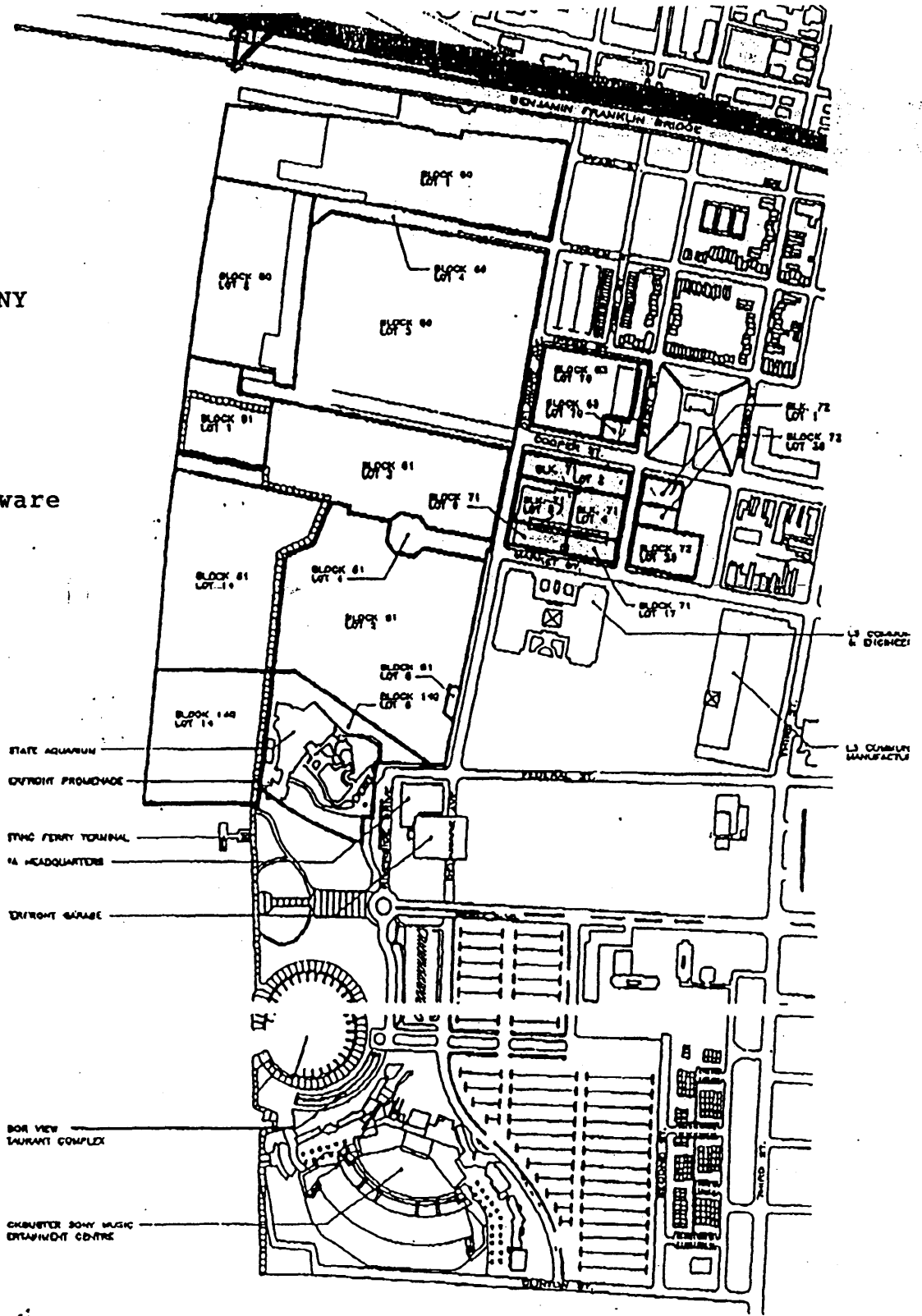
FIRST FLOOR PLAN



BUILDING 17  
 RCA VICTOR COMPANY  
 Camden NJ  
 Camden County

Block 71  
 Lots 2, 4, 8, 9, 17

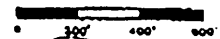
NE Corner of Delaware  
 and Market Street



Camden Waterfront Property Ownership Plan

Camden City  
 Dept. of Development and Planning

Kilinger, Adams Architects & Planners  
 Philadelphia Pa.



February, 1999

2-1-99