

NPS Form 10-900  
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior  
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES  
REGISTRATION FORM

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1. Name of Property

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historic name: Ellen H. Swallow Richards House

other name/site number: [N/A]

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2. Location

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street & number: 32 Eliot Street

not for publication: \_\_\_\_

city/town: Jamaica Plain      vicinity: Boston

state: MA county: Suffolk code: 025 zip code: 02130

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3. Classification

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Ownership of Property:      Private  
Property Owner:              Stanley W. Bardzilowski  
Telephone                      (617) 524-6670

Category of Property:      Building

Number of Resources within Property: 1

Contributing    Noncontributing

<u>  1  </u>	_____	buildings
_____	_____	sites
_____	_____	structures
_____	_____	objects
<u>  1  </u>	_____	Total

Number of contributing resources previously listed in the National Register: [One]

Name of related multiple property listing:

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, 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. \_\_\_ See continuation sheet.

Signature of certifying official

Date

State or Federal agency and bureau

In my opinion, the property \_\_\_ meets \_\_\_ does not meet the National Register criteria. \_\_\_ See continuation sheet.

Signature of commenting or other official

Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby certify that this 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 of Keeper

Date of Action

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6. Function or Use  
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Historic:  
Category:      Domestic      Sub:      Single Dwelling  
                 Education                      Research Facility  
  
Current:  
Category:      Domestic      Sub:      Single Dwelling

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7. Description  
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Architectural Classification:

Late Victorian  
Italianate

Other Description: \_\_\_\_\_

Materials:      foundation:      stone  
                 walls:              clapboard

Describe present and historic physical appearance.   X   See continuation sheet.

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8. Statement of Significance  
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Certifying official has considered the significance of this property in relation to other properties: NR

Applicable National Register Criteria: A and B  
NHL Criteria: 1 and 2

Criteria Considerations (Exceptions): [N/A]

Areas of Significance: Education, Engineering, Health/Medicine, Invention, Science, Social History

NHL Theme: XIII. Science  
    Subtheme: A. Physical Science  
    Facet: 3. Chemistry

NHL Theme: XVIII. Technology (Engineering and Invention)  
    Subtheme: A. Management, Observation, Control  
                 L. Fire, Safety, Sanitation, and Pollution Controls

NHL Theme: XXVII. Education  
    Subtheme: B. Elementary, Intermediate, and Secondary Education  
    Facet: 6. Objectives, Curricula, Methodology, and Administration  
    Subtheme: C. Higher Education (Colleges, Universities, and Professional Schools)  
    Facet: 4. Research, Graduate, Post-Graduate Studies, and Professional Studies  
    Subtheme: H. Special Populations  
    Facet: 3. Women's Education

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NHL Theme: XXX: American Ways of Life  
Subtheme: I. Domesticity and Family Life

Period(s) of Significance: 1876-1911

Significant Dates: 1890, 1908

Years of Alterations:

- 1916                      Dormer on the rear roof slope of the main block was added
- 1929                      Rear ell roof was reshingled and new window was cut on outside wall.
- 1952                      Front steps were replaced with cement block steps.

Significant Person(s): Ellen H. Swallow Richards

Cultural Affiliation: [N/A]

Architect/Builder: unknown

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.  
  X   See continuation sheet.

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9. Major Bibliographical References

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  X   See continuation sheet.

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 # \_\_\_\_\_
- x** included in the NRHP nomination for Monument Square Historic District

Primary Location of Additional Data:

- State historic preservation office
- Other state agency
- Federal agency
- Local government
- x** University: Massachusetts Institute of Technology, University Archives.
- Other -- Specify Repository: \_\_\_\_\_

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10. Geographical Data

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Acreeage of Property: .22 acre (9,620 sq. ft).

UTM References: Zone Easting Northing    Zone Easting Northing

A 19 325420 4686820    B \_\_\_\_\_  
C \_\_\_\_\_            D \_\_\_\_\_

\_\_\_ See continuation sheet.

Verbal Boundary Description: \_\_\_ See continuation sheet.

Assessor's ID: Ward 19, Parcel-Sub 1798. Easterly by Eliot Street 104 feet; northerly by a passageway or sreet 30 feet wide, 90 feet; westerly by lots 3 and 4 on the 1873 plan made by L. Briggs and Co, 104.1 feet; and southerly by lot 1 on said plan, 95 feet; containing 9,620 square feet of land, more or less.

Boundary Justification: \_\_\_ See continuation sheet.

The boundary includes the entire city lot that comprised the residential property of Robert and Ellen H. Swallow Richards during its period of historical significance from the 1876 - 1911.

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11. Form Prepared By  
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Name/Title: Gail Lee Dubrow  
Title: Assistant Professor of Urban Design and Planning  
Organization: University of Washington      Date: July 1, 1991  
Street & Number: 410 Gould Hall, JO-40      Telephone (617) 543-4190  
City or Town: Seattle    State: WA                      ZIP 98195

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Ellen H. Swallow Richards Residence

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STATEMENT OF PRESENT AND HISTORIC PHYSICAL APPEARANCE:<sup>1</sup>

The single family dwelling at 32 Eliot Street in Jamaica Plain, Boston, was the home of Ellen Swallow Richards, the founder of the domestic science movement, from 1876 until her death in 1911. Situated at the southeast corner of Eliot and Dane Streets, the residence at 32 Eliot Street is located in an area characterized by predominantly suburban residential development of mid- to late-nineteenth century woodframe single family and early twentieth century two family dwellings. One block to the northwest of 32 Eliot Street is Jamaica Pond. Incorporated within Frederick Law Olmsted's Emerald Necklace system of parks during the 1890s, Jamaica Pond was once bordered by Colonial and mid-Victorian country estates and was host to a thriving ice industry during the mid-nineteenth century. One block to the southeast is Centre Street, Jamaica Plain's major commercial thoroughfare. In addition, Monument Square, with its node of architecturally and historically significant ecclesiastical, residential and municipal buildings is also located one long block to the southeast.

Prominently sited on a large corner lot with ample side (southeast) yard, 32 Eliot Street is a boxy, ca. 1873-74 Italianate house that is currently clad by clapboards. It consists of a two-story, three-bay by two-bay main block and two-bay by six-bay rear ell. This house is formally finished on three sides with less elaborate surface treatments on the rear wall and ell. In general, this house's windows contain 2/2 wood sash. Baseboards run between the pudding stone foundation and clapboards. A fascia board runs beneath the main facade's bracketed eaves and is interrupted by the low pitched hipped roof's centered gable. Side boards appear beneath the bracketed eaves on the side walls. Projecting from the rear slope of the hipped roof is a center dormer containing three windows.

The main facade's pudding stone basement is pierced by two windows, located on either side of a short flight of cement steps. These steps provide access to a small porch that projects from the center of the main facade. Originally open, this porch is presently enclosed by metal and glass panels. Visible within this enclosure are low railings with well-turned balusters which extend from the chamfered pilasters to chamfered porch posts. This porch is enclosed by a flat roof. Multi-panel double doors (probably original) open on to the entrance porch. These doors exhibit raised and well-molded surrounds. Flanking the entrance bay are windows with enframements consisting of raised and well-molded surrounds, sills with small tab brackets and bracketed lintels.

On the main facade's second floor, more elaborate enframements are in evidence. At the center of the second floor is a window with louvered shutters that is surmounted by a deep centered gable with return eaves. This gable echoes the configuration of the larger centered gable directly above the entrance bay. The small, second floor centered gable shelters sawcut, curvilinear gingerbread ornamentation. Flanking the main facade's center window are windows with more ornate enframements than those of the floor below. Here, raised and well-molded surrounds with small tab brackets beneath the sills are surmounted by lintels with prominent keystones. The keystones are flanked by distinctive elongated, reverse S-shaped moldings. The main facade culminates in a hipped roof with broad centered gable with return eaves. The roof's deep eaves

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exhibit sawcut brackets.

The two-bay Dane Street facade features a one-story octagonal bay near the Dane and Eliot Street corner. Beneath the windows of the bay are apron panels. To the left of the bay is a window with enframements identical to those of the main facade's first floor. Similarly, the second floor windows of the Dane Street facade are identical to those of the main facade's upper floor. The main block's rear wall is extremely plain, in terms of surface treatments. On the rear wall's first floor, a small square window is located at the corner formed by the intersection of the main block and the rear ell. The rear wall's first floor is otherwise covered by the one-story rear ell. The rear wall's second floor exhibits three simply enframed windows. At the center of the rear wall's roof slope is a pedimented dormer containing three windows. The rear wall's eaves are missing several sawcut brackets.

The side yard of this property overlooks an amply, tree shaded lawn with a short asphalt paved driveway and modern carport. The side yard's wall is the mirror image of the Dane Street elevation. Here, placement of octagonal bay and single window has been reversed: a single window is located near the corner formed by the Eliot Street side yard walls. This window is fully enframed, exhibiting sills with tab brackets and bracketed lintel. To the left of this window is an octagonal bay with surface treatments identical to its Dane Street counterpart. To the immediate left of this bay is a second, identical bay that projects from the side wall of the rear ell.

According to the present owner of the 32 Eliot Street residence, the rear ell contains a kitchen that has been greatly modified over time. The ell's rear wall, reading from Dane Street to the side yard, exhibits double, single and triple windows. These windows are fully enframed with raised moldings and sills with tab brackets. The Dane Street side of the ell features a simply enframed door nestled within the corner formed by the intersection of the main block and the ell. To the right of this secondary entrance is a fully enframed window with tab bracketed sill.

The house as a whole, and the kitchen ell in particular, were remodeled following Ellen Swallow and Robert Hallowell Richards' 1875-76 purchase of the Jamaica Plain home, taking into account Ellen Swallow Richards' concerns as a pioneering environmental scientist. According to biographer Robert Clarke, she applied newly developed scientific and technological principles to the Jamaica Plain house, "tearing out, redesigning, and rebuilding its circulatory and respiratory systems."<sup>2</sup> The house's water supply and sewage system was improved, taking into account Ellen Swallow Richards' concerns about pollution. "She checked the house drainage to make sure it wasn't headed in the direction of the well, a common fault in those days. To make sure, she extended the drain pipes farther away from the well. She had the level of the ground surveyed, and she took extra steps to protect its water from its waste. She checked and adjusted the plumb and fit of pipes through the house, replaced most with modern-seal joints, put in traps and other precautions for waste water, discarded old lead poisoning water lines. A hand pump in the kitchen pulled water up from the well into a storage tank on the second floor for bath and toilet." Simultaneously, Ellen Swallow Richards pressed for an extension of Boston's water and sewage systems to Jamaica Plain.<sup>3</sup>

With the help of her husband, Ellen Swallow Richards overhauled the house's heating and ventilation systems. "She redesigned an inefficient water heater in the basement, replacing its

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input pipe and burner so that water would heat faster with less fuel. She put a 'water back' on the furnace, using the heat from it in the winter and the water heater itself in the summer." The Richards were innovators who incorporated the most current scientific and technological developments into their home; "at a time when most homes had no hot water when there was no fire in the stove, theirs had it all year round."<sup>4</sup>

The house's ventilation system also was adapted and remodeled to meet Ellen Swallow Richards' high standards. "The building itself she'd chosen for its 'access to air and sunlight' on all four sides, a benefit made possible by the diagonal placement of the house on a half-acre lot." In keeping with Ellen Swallow Richards' conviction that a plentiful supply of fresh air was one of the keys to healthy living, "windows in the house were torn out and rebuilt so that they would open from the top, as well as from the bottom" to release warm [polluted] air.<sup>5</sup> The Richards also designed a system of mechanical ventilation for the house to improve the rate of air exchange. "The engineer and scientist had holes cut in walls, in ceilings over lamps, and above heaters. They installed a large master vent in the skylight at the top of the house. Fans were put in to pull out dead air and give a life-enriching atmosphere inside."<sup>6</sup> Richards' concern for improving the rate of oxygen exchange in the house led her to employ both mechanical and natural systems. "The kitchen was hooded; a fan was put there, too, another innovation. But nature was also given a place in this house. Under openable windows of hand-made glass that did not filter out all the sun's beneficial rays, miniature botanical gardens thrived, their own reservoirs tapped into water lines," an ecological solution to the problem of increasing the supply of fresh oxygen to the house.<sup>7</sup>

Ellen Swallow Richards' commitment to improving sanitary conditions and the efficiency of domestic labor helped to redefine aesthetic standards for the single family dwelling. The Richards' home at 32 Eliot Street in Jamaica Plains provided Ellen with an excellent opportunity for the practical application of sanitary engineering principles in the domestic environment. According to biographer Robert Clarke, "there were no curtains on the windows except short, washable ones in the bedrooms and baths, nothing to catch dust, soot, or soil that couldn't be easily, quickly, and inexpensively removed for cleaning."<sup>8</sup> These practices were intended to improve both the sanitary condition of the home and the efficiency of domestic labor, indirectly elevating women's status. With these domestic reforms Richards contributed to the process by which the compact and efficient modern bungalow eventually replaced the cluttered and decorative Victorian dwelling as the American dream house.

In addition to these scientific and engineering improvements in the environmental control systems used in the modern home, Ellen Swallow Richards developed a home laboratory at 32 Eliot Street, called the Center for Right Living, for her experiments in Domestic Science. According to Clarke, "in her home at 32 Eliot Street, Jamaica Plain, Ellen Swallow created the first consumer home testing laboratory, forerunner of thousands in existence today. Bringing in selected students from MIT, she traded off board and room in return for their work on her experiments in this new field. Home Chemistry, she called it at first."<sup>9</sup> By 1910 the new field was known as the science of Home Economics.

In Richards' studies at the Center for Right Living, according to Clarke, "everything from furnishings to foods, utilities to utensils were examined; gadgets and myths from the marketplace were tested, approved, or exposed. She used science to determine their true values; controlled



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studies to test their efficiency. What didn't measure up was discarded and discredited. Improvements were suggested, such as putting the lip on both sides of the saucepan for left handed people, or better yet, on both sides for all. She replaced carpets with rugs as more efficient and healthful in those pre-vacuum cleaners days. She substituted gas for coal and wood and oil fuels for safety, economy, and health in cooking and lighting. She installed a telephone soon after Alexander Graham Bell introduced his invention in Boston in 1876. Electricity was added as soon as the lines were run, ridding the house of fumes and flames of gaslights. Testing these utilities at a time when even their suppliers did not, she meticulously measured pennies against minutes; quality against convenience and health. When cost was arbitrary, quality was a constant, inflexible factor in her research."<sup>10</sup>

Richards continually improvised to convert the kitchen into an effective home laboratory. "For greater precision, she moved the gas meter from the cellar to the kitchen to watch its dials and tabulate its volume. She calculated to the closest cent, second, and cube, the fuel, time, and money used for individual tasks. Adjustments were made; optimum times found in cooking; exact balances between economy and nutrition."<sup>11</sup> The result was a precise science of domestic economy that applied biological, chemical and physical principles to daily life. "She knew the precise cooking time and cost per dish per person and evaluated these against food value; she computed how long it took to heat, clean, or ventilate a room and how best to do it." Richards is considered to have "mastered the principles of scientific management long before they became the subject of discussion in the industrial world," wrote one prominent graduate of the Institute of Technology."<sup>12</sup>

The interior plan of the house has survived from the period of the Richards' residence with a high degree of integrity, although some of the rooms have been put to new uses. The house's interior contains a center stair hall that is flanked on the right by the former laboratory of Dr. Richards and which is presently used as a library. To the left of the entrance hall is a room that was probably originally used as a parlor and which presently serves as a living room. Behind the aforementioned parlor/living room is a large dining room which was enlarged at some point during the Richards' ownership to house a conservatory in the addition. The center stair hall "dead ends" into the dining room. To the right of the dining room, behind the laboratory/library, are the kitchen, pantry and utility room with a Dane Street side entrance to the rear of the kitchen, off a short hall which leads to the utility room. Described below is a more detailed, room-by-room description of the first floor of 32 Eliot Street. A detailed description of the second floor is not available at this time due to the current owners' desire to protect their privacy.

The center stair hall contains a handsome stairway made of Philippine Mahogany. The stairway is characterized by well-turned balusters, heavy stair rail, and substantial square, plinth-like newel post. (The stairway balusters are more Jacobethan or Elizabethan Revival than Colonial Revival.) The center stair hall contains the only parquet flooring on the first floor and probably within the entire house. The parquet consists of a continuous Greek key pattern composed of light and dark colored pieces of wood. The ceiling of the stair hall features a well-molded cornice and a circular ceiling medallion. All of the first floor lighting fixtures are of fairly recent vintage -- nothing pre-1920 survives. The owner noted that before they wall papered the lower portion of the stairway well, they found evidence (in "shadow" form) of an old wall telephone. To the right of the stair hall is the entrance to the laboratory/library which is topped by a transom window with square and curving enframements.

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The laboratory/library exhibits baseboards and hardwood flooring as is the case throughout the first floor. The room is dominated by a large bookcase, approximately ten feet tall, at the southeast corner of the room, to the left of the fireplace. Cabinets with solid doors are located at the lower portion of the bookcase with open shelves above. Their institutional appearance lends credibility to the belief that this room, even with its formal finishes, served as Richards' laboratory. On the south wall of this room is a white marble mantle that surrounds a cast iron enframingent, which in turn surrounds an iron grate with decorative detail. According to the present owner, there is a ventilation pipe behind this grate or screen which was used by Richards for the purpose of air exchange in the laboratory. At the center of the mantle's arch is a large, heavy emblem or keystone. This room culminates in a well-molded plaster cornice (the walls consist of plaster painted white). At the center of the ceiling is a circular medallion composed of several raised rings.

The parlor/living room features baseboards, hardwood floors, white marble mantle with inner, cast-iron enframingents (no evidence of ventilation pipe). To the right of the mantle is a built-in china cabinet with glass panes and wooden enframingents. The cabinet appears to be original to the house's mid 1870s construction.

To the rear of the parlor/living room is the dining room. It was originally about one-half of its present size, however the Richards added a conservatory during their period of residence. No longer extant is the dining room's fireplace mantle, which was removed at an unknown date. Along the east wall are two octagonal bays. Particularly noteworthy is the continuous run of wainscoting (tongue and groove) that is in evidence in both the original dining room and later extension. Everything, including ceiling moldings, was carefully and accurately matched during the construction of the conservatory addition, with the exception of subtle differences of proportion in the ceiling molding. Circular ceiling medallions composed of raised circular forms appear on the ceiling of both the dining room and the extension. On the west wall of the extension, near the three large windows across the rear wall, is a large closet which contains late 19th century built-in bureau-like drawers with rounded metal "pulls." To the left of this storage area was a soapstone dry sink, which is no longer extant.

To the right of the dining room in the interior, on the Dane Street side of the house, the kitchen is located. The kitchen, of all the first floor rooms, has experienced the most alteration over time. Still in evidence, however, is the chimney breast that probably was the original location of a cooking stove. The chimney breast is located on the north wall, behind the laboratory/library's fireplace. To the right of the chimney breast is a recessed, shallow pantry (open) with three or four shelves. A second, deeper pantry is located on the wall shared with the dining room. The pantry retains 19th century drawers and shelving. Particularly noteworthy in the kitchen is the small square glass enclosed opening to the left of the present stove on the upper portion of the Dane Street wall. A second, essentially identical opening is located on the kitchen's south wall. The small square window is not visible from the kitchen's interior, but is in evidence on the outer wall overlooking the side entrance. Presumably these small square windows were used for ventilating the kitchen since they are located high up on their respective walls. Near the southeast corner of the kitchen is a door that leads to the side entrance and utility room, the original use of which is unknown.

In summary, although most of the historically significant features associated with Ellen

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Swallow Richards' test kitchen are no longer extant, which is to be expected given the likelihood over time that kitchens will be remodeled in private houses, the interior of 32 Eliot Street otherwise possesses substantial physical integrity dating to Ellen Swallow Richards' occupancy. Beyond its immediate connection with Richards, the house at 32 Eliot Street is a solid, essentially intact example of early 1870s Italianate housing in Jamaica Plain, Boston. Particularly noteworthy are its distinctive window enframements, particularly those of the second floor windows with their prominent key stones and unusual well-carved, curvilinear flanking ornamentation. Together with the substantial center pavilioned Italianate mansard-roofed house at 28 Eliot Street, the well-detailed Colonial Revival Residence at 34 Eliot Street, and the partially visible cupola topped, temple form Greek Revival mansion at 1 Dane Street, 32 Eliot Street forms a representative and memorable streetscape of mid-late nineteenth century homes.

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NOTES

- 1 The description of present architectural appearance was provided by Edward Gordon, 22 Centre Street, Cambridge, Massachusetts.
- 2 Robert Clarke, Ellen Swallow: The Woman Who Founded Ecology (Chicago: Follett Publishing Co., 1973), 66.
- 3 Clarke, Ellen Swallow, 66-67.
- 4 Clarke, Ellen Swallow, 67.
- 5 Clarke, Ellen Swallow.
- 6 Clarke, Ellen Swallow, 68.
- 7 Clarke, Ellen Swallow.
- 8 Clarke, Ellen Swallow.
- 9 Clarke, Ellen Swallow, 69.
- 10 Clarke, Ellen Swallow, 69-70.
- 11 Clarke, Ellen Swallow, 70.
- 12 Clarke, Ellen Swallow.

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HISTORICAL SIGNIFICANCE:

The house at 32 Eliot Street in Jamaica Plain, Boston, was the residence of Ellen H. Swallow Richards, whose pioneering work in sanitary engineering and experimental research in domestic science widened professional opportunities for women in the sciences and laid a foundation for the new science of home economics. Within the context of the National Historic Landmark Program, Ellen Swallow Richards is a nationally significant figure under the themes: XIII. Science, A. Physical Science, 3. Chemistry; XVIII. Technology (Engineering and Invention), A. Measurement, Observation, and Control, and L. Fire, Safety, Sanitation, and Pollution Controls; XXVII. Education, C. Higher Education (Colleges, Universities, and Professional Schools), 4. Research, Graduate, Post-Graduate Studies, and Professional Studies, and H. Special Populations, 3. Women's Education. As the only residence Richards occupied during her years of professional activity and accomplishment from 1875-76, when she became the first woman to graduate from a scientific school, until her death in 1911, and as the headquarters of the Center for Right Living, as she called the home laboratory in which she undertook the experiments that led her to establish the science of home economics, it is the best place for commemorating her contributions to American history.

Born in 1842 into a New England family that combined farming with school teaching, Ellen Swallow received a home education in Dunstable, Massachusetts, until 1859, when at age 17 her parents moved to Westford, Massachusetts, where she attended the local academy. Family responsibilities and the inaccessibility of higher education to women in New England during that period frustrated Ellen's desire for a formal education. At long last, in 1868, at age 25, she finally was able to enroll as a special student at Vassar College in Poughkeepsie, New York, where the pioneering female astronomer Maria Mitchell, along with chemistry professor Charles Farrar, nurtured her scientific interests.

Following two years of study at Vassar, Ellen applied in 1870 for admission to pursue scientific studies at Massachusetts Institute of Technology, which traditionally had excluded women. After considerable debate, the faculty decided to admit Ellen Swallow at no charge (and therefore with no obligation) as an experiment in coeducation. Ellen was keenly aware of her role as a pathbreaker when she accepted MIT's offer of admission as a special student. In fact, she knew of no other woman previously admitted to a scientific school of any kind and was anxious to use her opportunity to widen the possibilities for women in the sciences generally.

Ellen Swallow successfully completed an ambitious course of studies at MIT, yet on account of sex discrimination was denied the advanced degree she had earned. She received a B.S. degree from MIT in 1873, and in the same year an M.A. from Vassar. Although she continued graduate study at MIT for two years she never received the doctorate for which she had hoped, reportedly because "the heads of the department did not wish a woman to receive the first D.S. in chemistry"<sup>1</sup> from the newly established Institute of Technology.

Shortly after graduation from MIT, Ellen Swallow married MIT Professor Robert Hallowell Richards, an expert in mining and metallurgical engineering, with whom she settled in a single family dwelling at 32 Eliot Street, Jamaica Plain, in the Boston suburbs. Close collaborators who

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shared a keen interest in one another's work, Ellen's chemical work in support of her husband's research with copper ores led to her induction into the American Institute of Mining and Metallurgical Engineers as the organization's first woman member.

Support from women's organizations in Boston, particularly the Woman's Education Association, underwrote Ellen's efforts to introduce women to a rigorous science curriculum. In 1873, Ellen Swallow and Bea Capen began teaching a class in advanced chemistry for young women at Girls High School in Boston. The WEA also supported Richards' plan to open a Woman's Laboratory at MIT, which lasted for seven years under the direction of MIT Professor John Ordway, to whom Ellen served as an Assistant.<sup>2</sup> The Woman's Laboratory offered a pioneering generation of women training in chemical analysis, industrial chemistry, mineralogy, and biology, leading to the regular admission of women to scientific education at MIT.<sup>3</sup> Richards eventually received an appointment to the MIT faculty as an Instructor in Sanitary Chemistry, a position she held from 1884 until her death in 1911.

At MIT's Sanitary Chemistry Laboratory, Ellen Swallow Richards combined environmental, industrial and consumer concerns in the effort to develop "an accredited interdisciplinary science of environment."<sup>4</sup> Ellen Swallow Richards' research into the quality of air, water and sanitation systems was pioneering in its unified treatment of domestic and public environments as subjects of scientific inquiry. Her early laboratory work in connection with a systematic survey of Massachusetts inland waters is considered "a classic in the field."<sup>5</sup> Her textbook Air, Water, and Food (1900), reflects the innovative material that she developed for students in sanitary engineering at MIT. Her efforts to solve manufacturing problems led to the adoption of new industrial standards. According to biographer Robert Clarke, "an early and continuing aspect of that work was to create scientific apparatus that would allow experiments and study under identical conditions."<sup>6</sup> In cooperation with industrial leader and reformer Edward Atkinson, Richards developed "new safety standards and factory procedures that influenced the entire textile industry." She developed, for example, a critical test for volatile oils that was adopted as the world standard<sup>7</sup> and successfully tackled the problem of spontaneous combustion in textile factories by introducing ventilation systems. Her pioneering research on the sources of adulteration in food staples and experimental work on common household items pioneered the development of domestic science and fueled the emerging consumer movement. The Chemistry of Cooking and Cleaning (1882) and Food Materials and their Adulterations (1885) were among her early publications on these subjects.

Following the Richards' 1875 -76 purchase of the Jamaica Plain home, they undertook systematic remodeling efforts that reflected Ellen Swallow Richards' concerns as a pioneering environmental scientist. According to biographer Robert Clarke, she applied newly developed scientific and technological principles to the Jamaica Plain house, "tearing out, redesigning, and rebuilding its circulatory and respiratory systems."<sup>8</sup> The house's water supply and sewage system was improved, taking into account Ellen Swallow Richards' concerns about pollution. "She checked the house drainage to make sure it wasn't headed in the direction of the well, a common fault in those days. To make sure, she extended the drain pipes farther away from the well. She had the level of the ground surveyed, and she took extra steps to protect its water from its waste. She checked and adjusted the plumb and fit of pipes through the house, replaced most with modern-seal

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joints, put in traps and other precautions for waste water, discarded old lead poisoning water lines. A hand pump in the kitchen pulled water up from the well into a storage tank on the second floor for bath and toilet." Simultaneously, Ellen Swallow Richards pressed for an extension of Boston's water and sewage systems to Jamaica Plain.<sup>9</sup>

With the help of her husband, Ellen Swallow Richards overhauled the house's heating and ventilation systems. "She redesigned an inefficient water heater in the basement, replacing its input pipe and burner so that water would heat faster with less fuel. She put a 'water back' on the furnace, using the heat from it in the winter and the water heater itself in the summer." The Richards were innovators who incorporated the most current scientific and technological developments into their home; "at a time when most homes had no hot water when there was no fire in the stove, theirs had it all year round."<sup>10</sup>

The house's ventilation system also was adapted and remodeled to meet Ellen Swallow Richards' high standards. "The building itself she'd chosen for its 'access to air and sunlight' on all four sides, a benefit made possible by the diagonal placement of the house on a half-acre lot." In keeping with Ellen Swallow Richards' conviction that a plentiful supply of fresh air was one of the keys to healthy living, "windows in the house were torn out and rebuilt so that they would open from the top, as well as from the bottom" to release warm [polluted] air.<sup>11</sup> The Richards also designed a system of mechanical ventilation for the house to improve the rate of air exchange. "The engineer and scientist had holes cut in walls, in ceilings over lamps, and above heaters. They installed a large master vent in the skylight at the top of the house. Fans were put in to pull out dead air and give a life-enriching atmosphere inside."<sup>12</sup> Richards' concern for improving the rate of oxygen exchange in the house led her to employ both mechanical and natural systems. "The kitchen was hooded; a fan was put there, too, another innovation. But nature was also given a place in this house. Under openable windows of hand-made glass that did not filter out all the sun's beneficial rays, miniature botanical gardens thrived, their own reservoirs tapped into water lines," an ecological solution to the problem of increasing the supply of fresh oxygen to the house.<sup>13</sup>

Ellen Swallow Richards' commitment to improving sanitary conditions and the efficiency of domestic labor helped to redefine aesthetic standards for the single family dwelling. The Richards' home at 32 Eliot Street in Jamaica Plains provided Ellen with an excellent opportunity for the practical application of sanitary engineering principles in the domestic environment. According to biographer Robert Clarke, "there were no curtains on the windows except short, washable ones in the bedrooms and baths, nothing to catch dust, soot, or soil that couldn't be easily, quickly, and inexpensively removed for cleaning."<sup>14</sup> These practices were intended to improve both the sanitary condition of the home and the efficiency of domestic labor, indirectly elevating women's status. With these domestic reforms Richards contributed to the process by which the compact and efficient modern bungalow eventually replaced the cluttered and decorative Victorian dwelling as the American dream house.

In addition to these scientific and engineering improvements in the environmental control systems used in the modern home, Ellen Swallow Richards developed a home laboratory at 32 Eliot Street, called the Center for Right Living, for her experiments in Domestic Science. According to Clarke, "in her home at 32 Eliot Street, Jamaica Plain, Ellen Swallow created the first consumer

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home testing laboratory, forerunner of thousands in existence today. Bringing in selected students from MIT, she traded off board and room in return for their work on her experiments in this new field. Home Chemistry, she called it at first."<sup>15</sup> By 1910 the new field was known as the science of Home Economics.

In Richards' studies at the Center for Right Living, according to Clarke, "everything from furnishings to foods, utilities to utensils were examined; gadgets and myths from the marketplace were tested, approved, or exposed. She used science to determine their true values; controlled studies to test their efficiency. What didn't measure up was discarded and discredited. Improvements were suggested, such as putting the lip on both sides of the saucepan for left handed people, or better yet, on both sides for all. She replaced carpets with rugs as more efficient and healthful in those pre-vacuum cleaners days. She substituted gas for coal and wood and oil fuels for safety, economy, and health in cooking and lighting. She installed a telephone soon after Alexander Graham Bell introduced his invention in Boston in 1876. Electricity was added as soon as the lines were run, ridding the house of fumes and flames of gaslights. Testing these utilities at a time when even their suppliers did not, she meticulously measured pennies against minutes; quality against convenience and health. When cost was arbitrary, quality was a constant, inflexible factor in her research."<sup>16</sup>

Richards continually improvised to convert the kitchen into an effective home laboratory. "For greater precision, she moved the gas meter from the cellar to the kitchen to watch its dials and tabulate its volume. She calculated to the closest cent, second, and cube, the fuel, time, and money used for individual tasks. Adjustments were made; optimum times found in cooking; exact balances between economy and nutrition."<sup>17</sup> The result was a precise science of domestic economy that applied biological, chemical and physical principles to daily life. "She knew the precise cooking time and cost per dish per person and evaluated these against food value; she computed how long it took to heat, clean, or ventilate a room and how best to do it." Richards is considered to have "mastered the principles of scientific management long before they became the subject of discussion in the industrial world," wrote one prominent graduate of the Institute of Technology."<sup>18</sup>

Ellen Swallow Richards found a wider audience for her work after 1890 with the establishment of the New England Kitchen in Boston. A public kitchen that Richards founded with Mary Hinman Abel, the New England Kitchen offered low-cost, nutritious meals to the public. According to Richards' account, meeting their goals as a scientific experiment station designed to improve the efficiency, cost-effectiveness and nutritional quality of the food supplied to the public required that "every appliance and utensil had to be either invented or adapted."<sup>19</sup> One of the key appliances popularized by the New England Kitchen was the Aladdin Oven invented by Edward Atkinson, which proved to be more efficient than the standard coal range. Among Richards and Abel's many improvisations were copper vessels lined with tin to take full advantage of the thirty quart capacity of the oven, which proved ideal for the long slow process of making soups and broths.<sup>20</sup>

While the founders of the New England Kitchen continually refined their recipes and gradually standardized their menu, they had nagging concerns about the limited appeal of their offering to the city's immigrant groups, who had their own tastes. One Irish mother's resistance to

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pressure to bring the New England Kitchen's bland but nutritious pudding home to her family captures the high cultural stakes being negotiated through food. On a past occasion her young son had proclaimed : "Oh! You can't make a Yankee out of me that way!"<sup>21</sup>

Richards' idea of establishing scientific public kitchens gained a wider audience at the Massachusetts state exhibit in Chicago's World Columbian Exposition of 1893, where she set up a model lunch kitchen, and through social settlements such as Hull House, which established its own New England Kitchen with Ellen Swallow Richards' help. Perhaps the most effective application of the New England Kitchen's original concept of a centralized hot meal delivery system was in the provision of public school lunches, which Richards' supervised at the New England Kitchen from 1890 until 1907. Thereafter, Richards retired from the New England Kitchen and the Women's Educational and Industrial Union took it over, supplying Boston's school lunch program from 1907 until 1938.

In the last decade of the nineteenth and the first decade of the twentieth century, Ellen Swallow Richards' work in domestic science education was integrated into the public school curriculum for girls, with the support of the Woman's Education Association and the National Educational Association. Housekeeping schools and domestic science classes were adopted by organizations providing vocational education to women, such as the Women's Educational and Industrial Union and the Young Women's Christian Association. A series of informal summer conferences in Lake Placid, New York, set the stage for founding the new discipline of Home Economics, and led in 1908 to the establishment of the American Home Economics Association, of which Ellen Swallow Richards served as the first president.

Ellen Swallow Richards died of heart disease in 1911 and was buried in the Richards family plot in Christ Church Yard, Gardiner, Maine.<sup>22</sup> The many institutional structures historically associated with Ellen Swallow Richards' work, including the Woman's Laboratory at Massachusetts Institute of Technology and the early buildings occupied by the New England Kitchen, have not survived. However, the 32 Eliot Street home occupied by Ellen Swallow Richards from 1875-76 until her death in 1911 is extant in Jamaica Plain, Boston. Because the Jamaica Plain residence was directly associated with Ellen Swallow Richards' productive life as the site of her home laboratory, the Center for Right Living, and because it is the only surviving tangible remain, it is the most appropriate place to mark this extraordinary woman's nationally significant contributions to American science, technology, and education.

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**NOTES**

<sup>1</sup> Janet Wilson James, "Ellen Henrietta Swallow Richards," in Edward T. James, ed., Janet Wilson James, assoc. ed., and Paul Boyer, asst. ed., *Notable American Women: A Biographical Dictionary* (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 1971), 143-146; especially 143; citing Robert H. Richards: *His Mark* (1936), 153

<sup>2</sup> Robert Clarke, *Ellen Swallow: The Woman Who Founded Ecology* (Chicago: Follett Publishing Co., 1973), 48-49.



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- 4 Clarke, Ellen Swallow, 112.
- 5 James, "Ellen H. S. Richards," 144-145
- 6 Clarke, Ellen Swallow, 122.
- 7 Clarke, Ellen Swallow, 123.
- 8 Clarke, Ellen Swallow, 66
- 9 Clarke, Ellen Swallow, 66-67.
- 10 Clarke, Ellen Swallow, 67
- 11 Clarke, Ellen Swallow.
- 12 Clarke, Ellen Swallow, 68.
- 13 Clarke, Ellen Swallow.
- 14 Clarke, Ellen Swallow.
- 15 Clarke, Ellen Swallow, 69.
- 16 Clarke, Ellen Swallow, 69-70
- 17 Clarke, Ellen Swallow, 70.
- 18 Clarke, Ellen Swallow, 70.
- 19 Ellen Swallow Richards, The Rumford Kitchen Leaflets: Plain Words About Food (Boston: The Home Science Publishing Company, 1899), 357.
- 20 Richards, The Rumford Kitchen Leaflets.
- 21 Richards, The Rumford Kitchen Leaflets.
- 22 James, "Ellen H. S. Richards," 146.

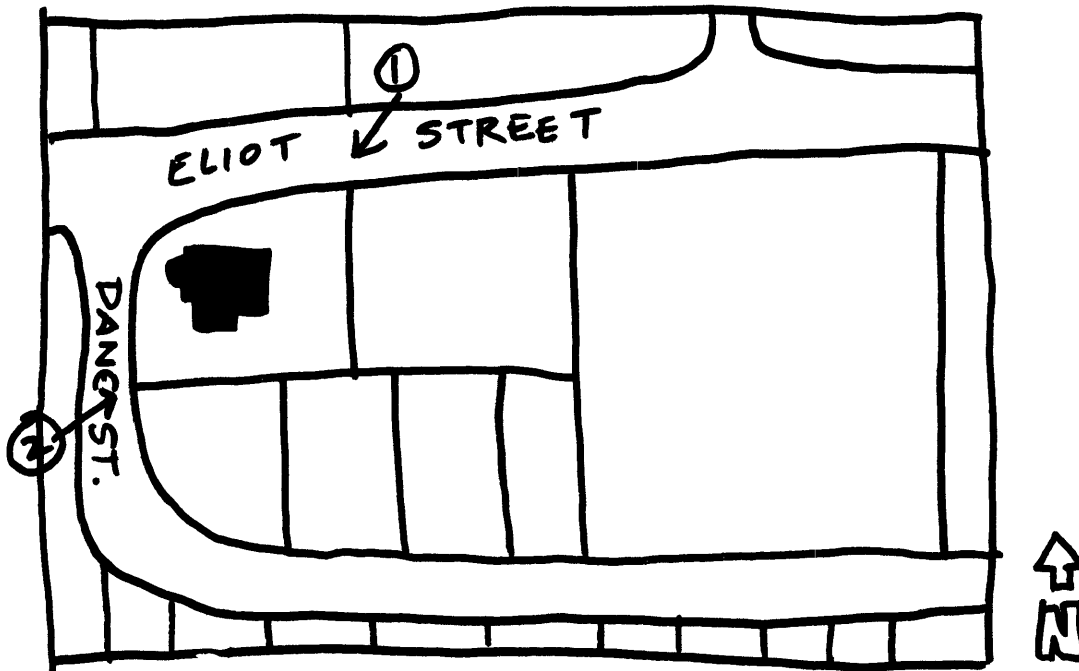
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PHOTOGRAPHS ARE KEYED TO THE FOLLOWING SKETCH MAP:



PHOTOGRAPH NUMBER 1

- 1) Name of Property: **Ellen H. Swallow Richards Residence.**
- 2) City and State: **Jamaica Plain, Boston, Massachusetts.**
- 3) Photographer: **Edward Gordon.**
- 4) Date of Photograph: **October 1990.**
- 5) Location of Original Negative: **Property of Gail Dubrow,  
Department of Urban Design and Planning, University of Washington.**
- 6) Description of view indicating direction of camera: **Looking s.w. from Eliot Street.**
- 7) Photograph number keyed to accompanying sketch map: **1.**

PHOTOGRAPH NUMBER 2

- 1) Name of Property: **Ellen H. Swallow Richards Residence.**
- 2) City and State: **Jamaica Plain, Boston, Massachusetts.**
- 3) Photographer: **Edward Gordon.**
- 4) Date of Photograph: **October 1990.**
- 5) Location of Original Negative: **Property of Gail Dubrow,  
Department of Urban Design and Planning, University of Washington.**
- 6) Description of view indicating direction of camera: **Looking n.e. from Dane Street.**
- 7) Photograph number keyed to accompanying sketch map: **2.**