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Image 1.0 *View of the west balconies of 145 Iota Court*

Introduction

Purpose

The purpose of the research and observations was to investigate the properties at 621 and 625 Henry Street, 150 Langdon Street and 145 Iota Court, Madison, WI and to provide a factual record on their general condition and structural integrity.

Research

Research was conducted at two primary sources. These were the Madison Landmarks Commission files and Wisconsin Historical Society.

Madison Landmarks Commission

Research was conducted at Madison Landmarks Commission on October 17, 2012 with Preservation Planner Amy Scanlon. All of the buildings under study are listed as contributing properties in the Langdon Street National Register Historic District. This district was listed in the National Register of Historic Places in 1986 and focuses primarily on the large residences of prominent Madison families and the other large structures that provided for student rooming houses along Langdon Street in the middle 1800's. In the early part of the 20th Century, Fraternities and Sororities, as well as developers of apartment buildings, engaged in a building boom that gradually changed Langdon Street and the immediate environs.

The U.S. federal government designates historic districts through the United States Department of Interior under the auspices of the National Park Service. Federally designated historic districts are listed on the National Register of Historic Places, but listing imposes no restrictions on what property owners may do with a designated property. Madison Landmarks ordinances establish policies and procedures for designated properties and apply to all properties within this district.

A brief synapsis of each property follows (from Landmarks Commission Files)

150 Langdon Street

Built 1892 for Halle Steensland and moved to present location in 1927.

Apparently it was originally located on Langdon Street.

Designed by Gordon & Paunack Architects, of Madison.

Queen Anne Style (exterior altered)

621 Henry Street
Built 1911 as the Spooner Apartments
Designed by Eschweiler Architects of Milwaukee.
Colonial Revival Style

625 Henry Street
Built 1916 by Sigma Nu Fraternity
Designed by Alfred Clas of Ferry & Clas Architects of Milwaukee.
Prairie Style

145 Iota Court
Built 1912 as the Batchelor Apartments.
Architect unknown.
Craftsman/Prairie Style

Wisconsin Historical Society

Research was conducted at the Wisconsin Historical Society photographic archives on October 12, 2012. This included briefly viewing historic Sandborn-Ferris maps of Madison and reviewing historic photographs in the "Place File". Although the Sandborn maps yielded little substantive information, several aerial view photographs were located that showed Iota Court and the buildings under study.

Image Whi 23829 (ID 31148), 1928 aerial view of the Langdon Street area, shows all three large buildings as viewed from the west. The images are small so it is not possible to compare historic details to existing conditions. Image Whi (x3) 43185 (ID 31353) is an image taken on July 6, 1937. All four buildings are on the site however, again the detail is hard to determine due to the small size.

Other sources for historic photographs were investigated but no relevant images were located.

Observations

Observation and comments offered here are based upon the limited condition assessments conducted on the days of observation, October 22 and 23, 2012. With the assistance of the building maintenance person we were able to observe the exterior and multiple interior spaces for each building.

Architectural elements were reviewed by Preservation Architect Charles Quagliana. The exterior envelopes were reviewed by Dan Maki of Facility Engineering, Inc. and Structural conditions were reviewed by Kurt Straus of Structural Integrity, Inc.

The purpose of the limited condition survey was to assess and document the physical condition of readily accessible portions of the buildings and those that could be viewed from adjacent buildings or the ground. Architectural and structural elements were examined to identify their type and determine their condition. Elements open to view were observed. Methods were not overly invasive and non-destructive. Photographs were taken and condition information was recorded in field notes and sketches.

Staff of All Comfort Services reviewed building systems on different days. James Dennis reviewed the electrical systems. Gary Pickett reviewed the plumbing systems and Gary Kunkel reviewed the HVAC systems.

150 Langdon Street

Image 1.1
View of 150 Langdon looking north.

Exterior

This property was originally a single family residence on Langdon Street. It was moved to this location in 1927 to make room for a new building at the corner of Henry and Langdon Streets. The property embodies the general form of Queen Anne Style. The identifying features include; steep pitched roofs of irregular shape, patterned masonry and asymmetrical facades. The original front tower and wrap around porch have been removed. The original front entrance has been bricked in and a new entrance created at the south east corner of the building. The building consists of three floors and a basement level.

Foundation Walls

Foundation walls are formed of poured concrete with single-wythe brick unit masonry. These walls extend from the footings up to the underside of the first floor framing along the entire perimeter of the building. Partial exposure of the basement elevation exists in all directions. The portions of the foundation wall open to view are in generally good condition with minimal random cracks or other deterioration. Evidence suggests numerous repointing repairs to the exterior of the foundation wall in the recent past.

Moisture is penetrating the perimeter walls below-grade as evidenced by considerable efflorescence at the basement interior. This is most noticeable at the southwest elevation where softscape material provides a flow of water to the foundation wall. The foundations appear to be functioning as intended.

Image 1.2 *View of the west side at grade. Moisture is penetrating the perimeter walls below-grade at this and other locations*

Exterior Walls

The exterior walls consist of multi-wythe brick unit masonry with limestone ornamental embellishment. The brick masonry observed is largely in good condition, but it contains evidence of minor instability in the form of step-cracking. Evidence suggests numerous repointing repairs to these cracks in the recent past. The exterior masonry walls of the building are painted. The paint likely conceals mismatched brick from various repairs and perhaps the mismatch of original and 1927 brick. The walls will need to be repainted.

The bay tower at the south building elevation serves as a deck and rescue platform from the upper floor. The flat seam metal roofing membrane is integrated as part of the original construction along with steel railings, landing, and stairs. The steel condition is generally sound, but the metal roofing is rapidly deteriorating and is suspected of leaking.

The gables and dormer walls originally featured beaded board and shingle siding and major portions of these areas are presently exposed and functioning. Areas exposed to view appear to be rotting and otherwise deteriorating. All will require replacement.

Image 1.3 *The brick masonry observed is largely in good condition, but it contains evidence of minor instability in the form of step-cracking. There is also efflorescence at several locations indicating moisture penetration of the masonry.*

Image 1.4 *The gables and dormer walls originally featured beaded board and shingle siding and major portions of these areas are presently exposed and functioning. Areas exposed to view appear to be rotting and otherwise deteriorating*

Exterior Doors and Windows

Wood windows that were accessible and viewable are noted to be in generally good condition with minimal weather sealing. The windows and doors are very prone to air infiltration. The style of the original windows is single-and double-hung. There are several original, decorative leaded glass windows that remain and should be retained. Many windows have aluminum combination storms that have protected them from the elements. The entrance doors are non-original. All are in sound condition.

Image 1.5 *Original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single-hung.*

Soffit/Eave

The eave system consists of original painted (finished) wood members, including eave and rake boards (fascia), crown, and soffit. The condition is good and sound.

Roof

The roof is a steep gable design with complementary gabled dormers. The roof features two large gables on the east and west sides. The low-slope (flat) portion contains a chimney and ventilator. The roof structure consists of wood rafters with board decking.

Attic venting is not apparent. The attic's use is maximized as living units. There does not appear to be any substantial thermal protection or thermal insulation in the attic or within the exterior walls.

Image 1.6 *The eave system consists of original painted (finished) wood members, including eave and rake boards (fascia), crown, and soffit. The condition is largely sound.*

The roofing systems include roll membrane (asphaltic), (asphaltic) shingle, and metal. (EPDM (rubber) membrane roofing possibly exists on the uppermost flat portion; however, access is not provided from the building's interior. It is likely each roofing system consists of multiple generations of multiple layers of material. Asphaltic shingles are the primary protection now, and they are multi-layered where older shingles were removed due to degradation. The ages of the exposed roofing systems are unknown.

Image 1.7 *The roof is a gable design with complementary gabled dormers. The roofing systems include roll membrane (asphaltic), (asphaltic) shingle, and metal.*

Image 1.8 *A combination of roofing systems and wall cladding intersect here. The condition is unsound and moisture penetration is occurring*

Image 1.9 *Gutters and downspouts consist of prefinished sheet metal; they are sound. They appear newer and could possibly be reclaimed*

The bay window at the north building elevation contains a roll-roofing membrane, likely encapsulating an original flat seam metal membrane. The condition is generally sound, but its surfaces continue to be affected by moisture.

The wood structures of the dormers appear to be in good condition and could possibly be reclaimed. Accessories (flashing) consist of galvanized steel, including counter flashing, valley, and vent flashing. All of the flashing is in poor condition. The roof style and its choice of roofing materials do contribute to the historic appearance of the building.

Gutters & Downspouts

Gutters and downspouts consist of prefinished sheet metal; they are sound. They appear newer and could possibly be reclaimed. The gutters and downspouts are not original to the construction.

Chimney

Brick unit masonry comprises one existing chimney. This is partially supported by a metal tie rod back to the roof. . The chimney appears sound above the roof-line although it does lean slightly.

Structural

A significant portion of the structural framing was concealed from view. The exterior walls above the basement level appear to consist of solid brick masonry construction. The interior bearing walls appear to be 2x stud construction. The composition of all areas could not be confirmed due to the presence of finish materials. We noted heavy efflorescence noted on the west elevation next to the chimney indicating water migration in the brick walls is present.

The floor framing is most likely 2x construction at 16" centers. We could not get access to verify the framing depth. The roof also appears to be 2x wood framed. We could not verify spacing. The roof framing was most likely designed to be self-supporting to the exterior bearing walls. Over time, the roof has sagged and been modified. We noted curvature in the roof rafters and saw-cut notches in some valley rafters. The majority of the roof now bears on interior walls below the roof that divide rooms on the third floor. The walls of the third floor of course bear on the floor joists of third floor and so on downward through the height of the building.

Misalignment of the walls from floor to floor causes loads from the roof and floor levels above to bear on floor joists. The floor joists most likely have not been designed to support the loads from above and are deflecting. Some of these deformations in the floors, particularly at the upper floors, were observed. We noticed significant plaster cracking. It is also likely that some of the stud framing is highly stressed or overstressed in the lower levels of the building since the systems were not originally designed to roof loads in addition to floor loads.

Image 1.10 *View showing a valley rafter crossing an interior wall at a doorway. Note the doorway appears to cut through the bottom of the rafter.*

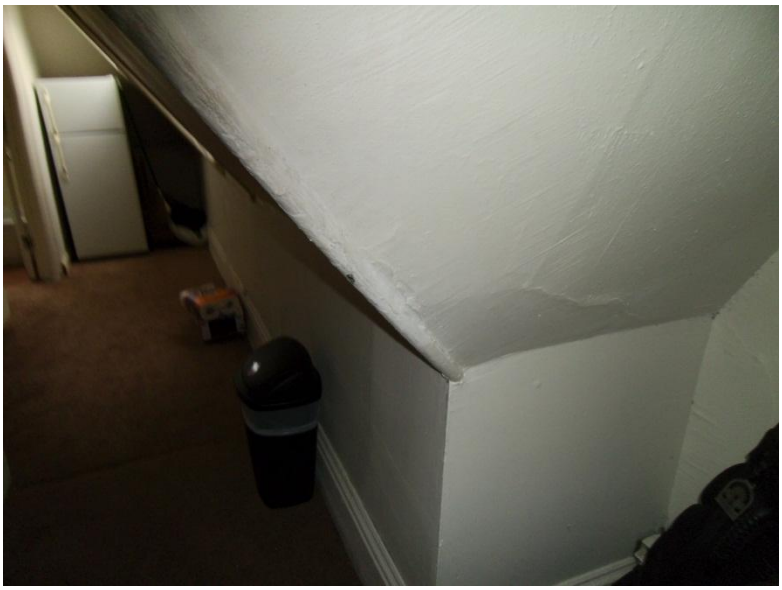

Image 1.11 *View showing a valley rafter bearing on the exterior wall. Note the deflection in the rafter and cracking in the plaster.*

Image 1.12 *View showing the north end of the building. Note the damaged columns of the fire escape.*

Image 1.13 *View showing the exterior vault and steel cover connected to the basement. The steel framing embedded in the concrete foundations are corroded and damaged.*

We noted a damaged fire escape column at the back of the building (north elevation). This was likely caused by a vehicle impact. This support needs to be supplemented or replaced. In the basement an exterior vault under the sidewalk has steel components that are significantly damaged by corrosion.

Interior

The majority of interior spaces have been heavily remodeled and modified to accommodate student housing. Most of the apartments here are efficiency or one bedroom units. The floor plans of all floors have been modified from their original layout to accommodate corridors, closets and bathrooms. Some of this has been additive, some subtractive. Remnants of 1892 vintage doors and trim are apparent on the interior of the exterior walls. The basement house two apartments, laundry, tenant storage and mechanical spaces.

On the first floor it appears much of the expected custom detail, built-ins and decorative work, including the original central hall and entry have been removed. The original grand staircase between first and second floors is relatively intact. One fireplace remains on first floor. New partitions are drywall over wood studs with ranch type trim and base. Original 2 1/4"wood floors remain in some area but are carpet.

Image 1.14 *View of the main stair from current entry.*
The stair is a fairly intact remnant of the original interior fabric.

Image 1.15 *View of a second floor apartment kitchen with the original tower window in the background.*

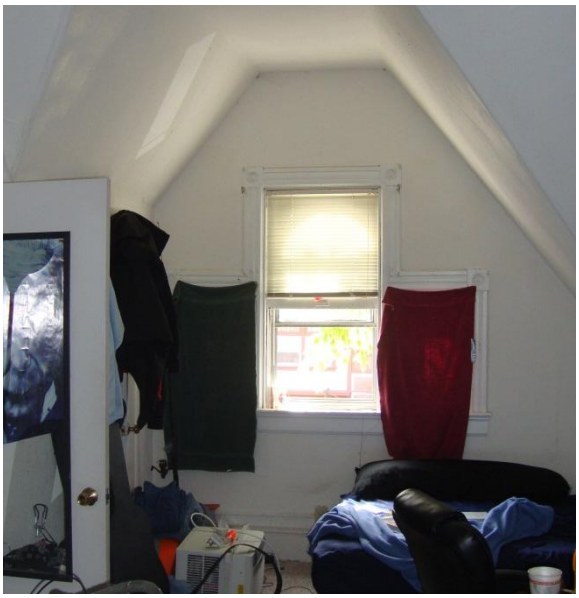

Image 1.16 *Typical third floor efficiency apartment.*

The second floor has been significantly remodeled with few vestiges of original walls, doors and trim remaining, except for at trim at windows. An original servant's stair from second to first floor remains but no remnants of the servants' quarters is evident.

The third floor houses several efficiency apartments. An original stair case provides access from second

floor. A fire escape on the south façade provides emergency egress.

Heating

The heating system consists of a Dunkirk mid efficiency side vented 225.000 BTU model boiler with one main pump and controls in the apartments. The estimated age of the equipment is at 15 years. Radiators are provided in each apartment. No central air system or air condition system is provided. Window air conditioner units are used by residents during warm months.

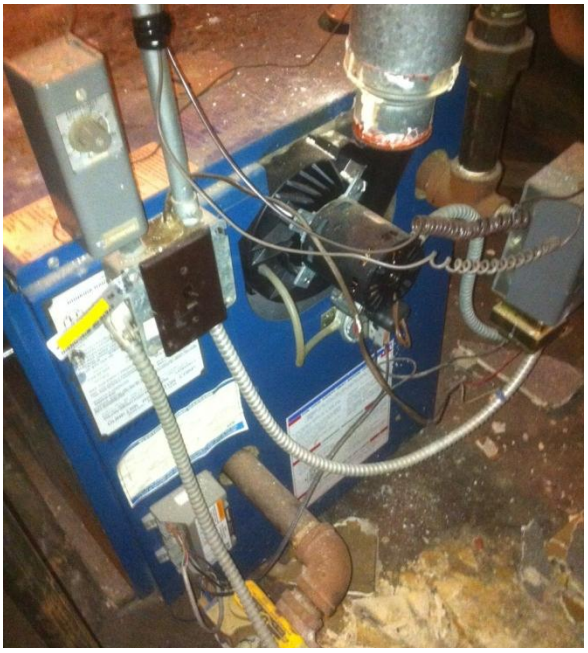

Image 1.17 *Dunkirk boiler in the basement mechanical room.*

Plumbing

The building has a galvanized pipe water distribution piping. Many of the joints are rusted. Overall the system is in fair condition. The sewer piping is a combination of cast iron and PVC that are in fair condition. The water heater approximately 15 years old. This unit is under sized for building. The vent on water heater is unsafe. The water softener is operational but undersized. It lacked salt in the brine tank.

Electrical

The electrical service serves 12 units within the building. The building contains many old devices and fuses. Some bare old wires were noted. The surveyor could not close a j-box because of the bare wires so left it the way that it was.

Hazardous Materials

Testing for hazardous materials was not performed as part of this work. Due to the age of the structure, lead based paint and some isolated asbestos are assumed to be present as they were widely use in the early 20th century. These are not an issue if they are stable.

621 Henry Street

Image 1.18 *View of the front (west) façade of 621 Henry Street.*

Exterior

This apartment building design was influenced by colonial revival architecture popular in the early twentieth century. The building elevations are symmetrical about the longitudinal axis. Essentially north and south are mirror images of each other. The corner porches have been infilled as part of the interior living space. Projecting bays are found on the front and side elevations. The building is three stories plus a basement level.

Foundation Walls

Foundation walls are formed of multi-wythe brick unit masonry. These walls extend from the footings up to the underside of the first floor framing along the entire perimeter of the building. The foundation wall is buried in the earth. Partial exposure of the basement elevation exists at the north and east. The portions of the foundation wall open to view are in generally good condition without significant cracks

or other deterioration. Moisture is penetrating the perimeter walls below-grade as evidenced by considerable efflorescence at the basement interior.

Exterior Walls

The exterior walls consist of multi-wythe brick unit masonry. The exterior of a portion of the uppermost story is covered with a direct-applied finish system (DAFS) approximately one inch thick revealing synthetic stucco. It has not been determined whether this over-cladding contains insulation. Presumably, it covers original brick unit masonry that may have been in poor condition.

Image 1.19 *View showing the exterior bearing wall from the interior. Note the concrete lintel construction over the opening and one way concrete joist with clay tile infill construction of the first floor.*

Exterior walls consist of multi-wythe brick unit masonry with limestone trim on the front façade. A portion of the third floor is covered with a direct-applied finish system (DAFS). This is approximately one inch thick synthetic stucco. There are areas where individual bricks are damaged, particularly over exterior openings or within the parapet construction.

Image 1.20 *View of the front parapet. The parapet was rebuilt yet still has deterioration occurring. Moisture is penetrating the perimeter walls at open joints in the parapet coping and in the limestone band trim.*

We noted isolated issues, such as at least one masonry arch was failing above an opening and several of the flat lintel locations had significant corrosion in the support steel. The front facing parapet has been partially rebuilt. Limestone trim band just below the parapet on the front elevation is lacking mortar at the joints allowing water to penetrate the wall system.

On the interior face of the building it was observed that all of the lintels in the stack of openings in the side facing bay window areas appear to have possible shear failure in the support lintels.

Image 1.21 *View of one of the west facing bays.*

Image 1.22 *View of one of the window lintels illustrating rust jacking.*

Image 1.23 *View of the east elevation of the building. Note the third floor masonry has been covered with synthetic stucco.*

Exterior Doors and Windows

All of the original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single-hung. Original porches existed on the

north side of the building and have since been converted to interior space. Modern-generation window units fill the openings in the masonry walls once dedicated to open-air exposure. Wood windows that were accessible and viewable are noted to be in generally good condition. Most windows have aluminum combination storms that have protected them from the elements.

The north and south building elevations contain bay windows in stacked fashion. The west building elevation contains two individual bay windows. The bay windows include light-gauge sheet metal exterior cladding. The cladding is sound. These windows' external components are also in generally good condition. The exterior doors are non-original. The surrounding componentry is generally in good condition.

Image 1.24 *View of the east side of 625 Henry Street (right) and the north side of 621 Henry Street (left).*

Image 1.25 *Original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single-hung.*

Image 1.26 *Rapidly deteriorating wood windows without aluminum combination storms that have protected other windows from the elements.*

Entry Canopy

The canopy structure of the north entry porch to the basement level contains fractured translucent roof panels. Water is able to penetrate into this canopy. Runoff from the building face and from the canopy roof is ponding along the building wall and migrating into the foundation walls.

Roof

The roof is a low-slope (flat) design bordered with continuous brick masonry parapets with cut stone and clay tile caps. The roof also features numerous penetrations including original skylights and chimneys.

The roof structure consists of dimension lumber rafters with board decking which is tongue-in-groove profiled. This structure lies upon a poured concrete deck forming the ceiling of the top story. Attic venting utilizes a few spinner-style ventilators; their current operability is questionable. Thermal protection is non-existent.

Air- and light-wells emanate at the roof top. They are protected by metal canopies and skylight structures. Glazing of the skylights is largely intact but fractured. Leaks to the interior were observed corresponding to the deteriorating ceiling and wall conditions surrounding the skylights. One roof drain provides drainage for the entire roof region.

Image 1.27 *General view of the roof looking west towards campus.*

The roofing system consists of multiple generations of multiple layers of material, including both coal tar and asphaltic composition membranes. The built-up membrane is original to the construction, is surfaced with gravel, and contains numerous patches and base flashing repairs. The membrane resides atop the wood roof decking. Roofing underlayment (e.g. tar paper) likely existed attached to the wood

decking. The age of the exposed roofing system along with its repairs is unknown. Accessory flashing is minimal and consists of galvanized steel. The majority of flashing is membrane-type, and the original material likely contains asbestos reinforcing. It is also likely the built-up membrane contains asbestos. The roofing system and its accessories are in poor condition and rapidly approaching the extents of their serviceable life. Scuppers should be added as emergency overflow for the roof.

Image 1.28 *Roof appurtenances and conditions. Glazing of the skylights is largely intact but fractured. Leaks to the interior were observed.*

Chimneys

Brick unit masonry comprises the existing chimneys, along with concrete caps. All chimneys appear sound above the roof-line.

Hazardous Materials

Testing for hazardous materials was not performed as part of this work. Roofing system field- and base flashing membrane is suspected of containing asbestos. Due to the age of the structure, lead based paint is assumed to be present. Although the asbestos at present is not friable, disturbance during any proposed remedial or repair work must conform to State and Federal regulations relative to such materials. Any required mitigation of hazardous materials should be completed before undertaking the rehabilitation work.

Structural

The exterior and interior walls consist of bearing and non-load bearing solid brick masonry or brick and clay tile masonry. The composition of all areas could not be confirmed due to the presence of finish materials. Several areas on the exterior faces of the building were concealed by close proximity to other buildings and by vine growth.

We noted on the interior face of the building within the apartments, that all of the lintels in the stack of openings in the bay window areas, both north and south elevations, appear to have possible shear failure in the support lintels. This is evident from plaster deformation and delamination caused by the movement of the lintel downward.

The floors of the building appear to be all approximately 10" thick one-way joists approximately 6" wide with clay tile infill. The joists appear to be approximately 16 to 18" on center. The joists are covered with a topping slab of unknown thickness. The condition of the floor framing appears to be good. The stairs are constructed of poured concrete.

Image 1.29 *View showing possible shear failure in a support lintel below the larger openings of the bay within an apartment. The side bay windows align and occur on each of levels 2 – 4.*

Image 1.30 *View showing a failing masonry arch at an opening.*

The roof framing is of wood framing strutted to the ceiling framing of fourth floor. The wood framing was found to be heavily stained and leads us to believe that although the framing may be in fair condition in some areas it is likely in poor condition in others. This area was generally inaccessible, visible only from the ladder to the roof.

Image 1.31 *showing heavily stained wood framing of the sloped roof. Portions of the framing are likely deteriorated.*

Interior

The interior layout of this rectangular building provides for two large multi-bedroom apartments on each floor running the length of the building. These are mirror images of each other. They are separated by a core area that contains opposing egress stairs with skylights, shafts and bathrooms. Generally the layout of each apartment seems to be original with exterior porches infilled to provide additional bedrooms and changes to kitchen areas to provide for more counter space. The building has a somewhat unique floor plan with just two large living units on each floor. This communal living arrangement/boarding house was more popular in larger cities such as Milwaukee.

The interior walls are plaster on lath over wood studs and the ceilings are plaster over structure. Maple wood floors are found throughout the apartments with ceramic tile floors in bathrooms. Simple square oak wood trim is found at all doors and windows, and used for base. Some original two panel wood doors remain.

Exposed ductwork was added at some point in recent past to provide air conditioning to each apartment unit. The ductwork is a significant visual detraction from the aesthetics of each apartment.

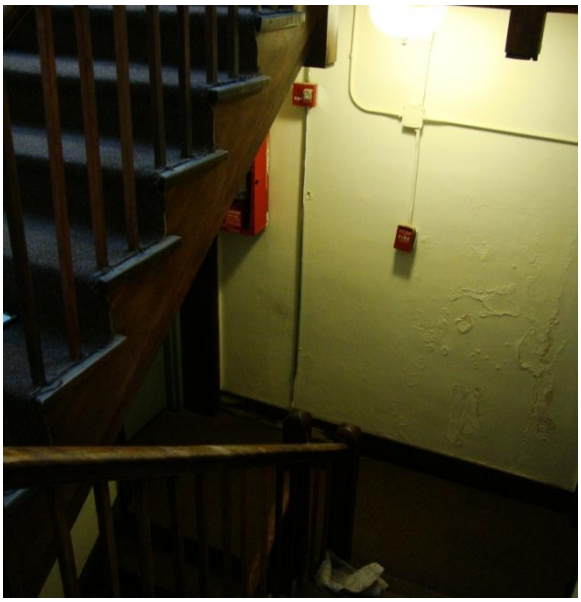

Image I.32 *View of the east central stair at the third floor landing. Note the deterioration of the plaster walls from skylight leaks above.*

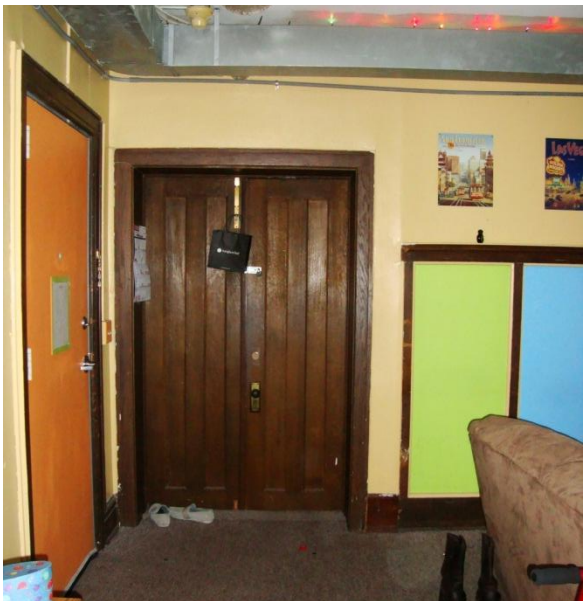

Image 1.33 *View of a typical apartment living room.*

Image 1.34 *View of a typical porch enclosed to provide another sleeping area.*

Image 1.35 *View of a typical apartment kitchen area.*

Heating

Each apartment has its own furnace. The old boiler room in the basement has a Luxaire 80% furnace that heats two of the apartments on that floor. It has a BTU input of 80,000. The only return is from the boiler room. The old boiler is not used and the piping is covered with asbestos, some of it friable. The Luxaire furnace and the two water heaters are the only thing going into the 16 inch diameter chimney.

Plumbing

Water distribution piping is adequate. Water heater number one is a Bradford White unit. It is eight years old and undersized for the building. There is no drip leg on gas line. Water heater number two is a G E Smart Water unit approximately 5 years old. There is improper venting of unit. This is very unsafe and should be corrected. The water softener is OK. The drain is the wrong size. Sewer and water piping are in fair condition.

Electrical

The electrical service has been upgraded and is located outside with conduit on exterior of building. The basement has a few fuses on the electrical and misc. wiring needs to be replaced and cleaned up. There is also a lot of old deteriorated wires that need to be removed and replaced could be a potential fire hazard. The service contains seven electrical meters. The apartments contain a lot of surface mounted wire mold raceway which is not a problem. The only concern is that the existing wire and circuits that it is

attached to most likely is not rated or capable of the added draw or load placed on it. All apartments need to have GFCI outlets installed in locations that require it for safety of the tenants.

It appears that the wire is Knob & Tube. Knob and tube wiring was commonly used in North America from about 1880 to the 1930. It consisted of single-insulated copper conductors run within wall or ceiling cavities isolated from the structure by porcelain tubes and suspended by porcelain knobs or insulators. The supply and return wires were routed separately from each other, rather than being located parallel to and near each other. The major disadvantage of this system is that a detailed building wiring diagram is needed for electricians to understand multiple interwoven circuits.

Hazardous Materials

Testing for hazardous materials was not performed as part of this work. Due to the age of the structure, lead based paint and some isolated asbestos are assumed to be present as they were widely use in the early 20th century. These are not an issue if they are stable.

Image 1.36 *Electrical entrance and meters.*

625 Henry Street

Image 1.37 *Street view of 625 Henry Street. (West façade)*

Exterior

The property embodies the general characteristics and details of Craftsman style with Prairie Style influences. The identifying features include projecting eves, decorative beams under the roof edge, front facing porch and double hung windows with multi-pane upper sash. This is a three story building with a full basement level.

Foundation Walls

Foundation walls are formed of multi-wythe brick unit masonry. These walls extend from the footings up to the underside of the first floor framing along the entire perimeter of the building. The foundation wall is buried in the earth. Partial exposure of the basement elevation exists at the north, east, and west. The portions of the foundation wall open to view are in generally good condition without significant cracks or other deterioration.

Moisture is penetrating the perimeter walls below-grade as evidenced by considerable efflorescence at the basement interior. This is most noticeable at the south elevation driveway slab that pitches towards the foundation wall. Moisture also penetrates the west porch stoop foundation walls as evidenced by localized spalling brick. It is possible this portion is a modern addition. The brick is painted here. A

modern addition exists at the southeast corner of the structure; it is one story addition.

Image 1.38 *View of efflorescence in the mechanical room along the exterior wall evidence of water penetration.*

Image 1.39 *View of concrete driveway pitched towards foundation wall allowing rain and snow melt water to enter basement area.*

Image 1.40 *View of small softscape area at the southwest corner of the building. Water is trapped here and percolates into the soil penetrating the perimeter walls below-grade.*

Exterior Walls

The exterior walls consist of multi-wythe brick unit masonry. Generally the brick masonry observed is in good condition.

The small addition at the southeast corner of the building, at the first floor level, is in good condition. The precast copings at the top of the wall are in good condition but do not appear to have flashing beneath them.

The small porch at the northeast corner of the building serves as a deck and possible rescue platform from the second floor. The brick masonry of the porch walls is integrated as part of the original construction. The masonry condition is sound.

Entry Porch

The brick masonry structure of the west porch appears to be in good condition and its interior space is occupied by offices. The brick masonry side walls at the exposed stoop and entry stairs contain localized spalling.

Image 1.41 *View of infill brick at front porch. Enough evidence of original conditions remains to restore this porch if desired.*

Exterior Doors and Windows

All of the original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single- and double-hung. Original porches contain modern-generation window units and synthetic stucco infill where dedicated open-air exposure once existed.

Wood windows that were accessible and viewable are noted to be in generally good condition. Most windows have aluminum combination storms that have protected them from the elements. Masonry of the window heads is arched. The east building elevation contains a window bay in stacked fashion, from grade to roof. The west building elevation contains two window bays. The exterior doors are non-original. The surrounding componentry is generally in good condition.

Soffit/Eave

The soffit system consists of presumably stucco cladding over original wood members, and its eave construction includes dimension lumber fascia boards and brackets. The soffit is non-perforated (i.e. non-vented). The brackets are likely boxed-in with ¾" finished boards to provide the finished outrigger. The condition of cladding and eaves is good and sound.

Image 1.42 *View original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single-hung.*

Roof

The roof is a flat, deep-eave design. The roof also contains brick masonry chimneys and numerous domestic vents. The roof structure likely consists of wood rafters with board decking. Attic venting is not evident. Thermal protection, which is likely located in the attic, is minimal if it exists at all. The roofing system consists of an exposed layer of EPDM (rubber) material, and it likely contains tapered rigid insulation beneath it, forming a hipped-roof surface for drainage. The age of the roofing system is unknown.

Accessories consist of galvanized steel ventilators. Pre-finished sheet metal edging resides at the roofs' perimeter. All of the flashing is in sound condition. The roof style does contribute to the historic appearance of the building.

Image 1.43 *The roof is a flat (low-slope), deep-eave design consisting of an exposed layer of EPDM (rubber) material, and it likely contains tapered rigid insulation beneath it, forming a hipped-roof surface for drainage.*

Gutters & Downspouts

Gutters and downspouts consist of pre-finished sheet metal. The sheet is sound. Portions of the gutters and downspouts are deformed and/or detached from the substrate. This causes localized drainage overflow and consequently moisture migration into the walls where it wasn't anticipated. Rain and snow-melt is being deposited at the base of the building foundation wall, ponding in some areas, and moisture is penetrating the building basement wall in multiple areas.

Chimneys

Brick unit masonry comprises the two existing chimneys. Both chimneys are unsound above the roof-line, with the south chimney more significantly deteriorated. The mortar is worn and weathered; approximately 75 percent remains firmly attached. The brick units appear sound.

Structural

A significant portion of the structural framing was concealed from view. The exterior walls appear to consist of solid brick masonry or brick veneer and stud wall construction. The interior bearing walls appear to be 2x stud construction. The composition of all areas could not be confirmed due to the presence of finish materials. One exterior face of the building was concealed by close proximity to another building.

Image 1.44 *Portions of the gutters and downspouts are deformed and/or detached from the substrate.*

We noted sections of the front entry stoop walls were significantly deteriorated. Sections of damaged brick and mortar were present and a portion of the wall was in the process of collapse. The general structure of the exterior brick appeared to be in good condition. Please refer to the Building Envelope portion of this report for additional information. The interior stud wall framing appeared to be in good condition, some typical wall cracking was present.

The floors of the building were framed with 2x12 wood joist framing at 16" on center (measured from the underside of the first floor). The condition of the floor framing appears to be generally good, although some deformations and sloping in the floors were noted. The stairs are constructed wood framing. The roof framing is of wood framing and likely integrated with the ceiling framing of the fourth floor. The framing was inaccessible to view.

The main portion of the roof inside the walls of the building appeared to be functioning as intended. However, the cantilevered sections of the roof outside the walls appeared to have significant sagging. The magnitude of the sagging appeared to range between 2" at shorter 2 and 4 foot long sections of cantilever, and 4" of sag at longer 4 to 6 foot sections of cantilever. The sagging is an estimate based on observation from the ground. Decorative brackets along the eave of the roof were rotated exposing some of the movements. We also noted cracking in the plaster of the soffits consistent with varying movements in the framing.

Image 1.45 *Image showing the damaged and collapsing north side retaining wall of the front entry stoop.*

Image 1.46 *View showing the cracking at the plaster on the soffit at the roof cantilever.*

Interior

This originally was a fraternity house. The primary spaces that defined that use, such as the chapter room, living room, dining room/kitchen and library, have all been removed. Very little evidence of their former use exists. It appears the building was heavily remodeled to accommodate efficiency apartments. This remodeling appears to be from the 1960s. There is a single interior stair. Interior partitions consist of drywall over wood studs. All of the trim is ranch style at doors and base. Doors are flush design with simple hardware common in the 1960s. The front porch and the side porch were enclosed. The side porch is a sleeping area and the front porch is a rental office.

Image 1.47 *View of the stairway. One of the few remaining vestiges of the original fraternity house.*

Image 1.48 *View of a typical upper floor corridor.*

Image 1.49 *View of typical apartment kitchen area.*

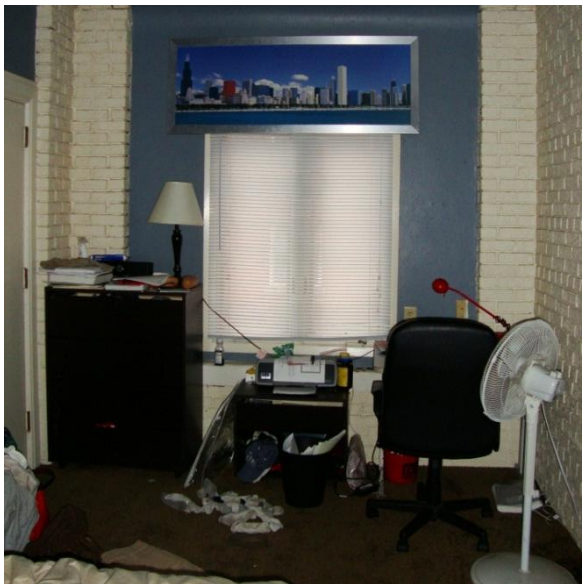

Image 1.49 *View of north porch converted into a sleeping area.*

Heating

This building has two Utica hot water boilers. One fires at 299,999.The other on fires at 250,000. It has an air eliminator and traditional expansion tanks. This causes the tanks to become water logged. It does have a primary, secondary loop piping scheme and the boilers are parallel piped. There are three main zones, each has a pump. The boilers are estimated to be 15 years old and considered to be 80% efficient. They supply perimeter baseboard heating elements in each room.

Image 1.50 *View of boiler hot water circulating pumps in the mechanical room.*

Electrical.

There is an 18 Bank Electrical Service located in the basement. Each apartment is feed with a 60 amp breaker. There are a lot of exposed and bundled wires not to code throughout the basement area. There is several floor ceiling penetrations that are not fire stopped. The electrical service grounding is not to code Several pumps do not have disconnects on them. There is several open J-Boxes and splices in the wiring. The building has some knob & tube wiring. The apartments do not have GFCI protection. All in all, small sizes of the apartments do not present much electrical load.

Plumbing

The water softener over 20 years old. The water heater over is over 13 years old. The sewer and water piping is in fair condition. The plumbing venting system is in fair condition.

Hazardous Materials

Testing for hazardous materials was not performed as part of this work. Due to the age of the structure, lead based paint and some isolated asbestos are assumed to be present as they were widely use in the early 20th century. These are not an issue if they are stable.

145 Iota Court

Image 1.51 *View of the west elevation of 145 Iota Court.*

Exterior

The design of the exterior of this building can be characterized as influenced by Craftsman Style architecture popular in the early 20th century. It is a long narrow building with integrated balconies. The base of the building is treated with a darker brick with horizontal reveals of header brick between five courses of running bond masonry. The main entrance on the north façade is unique and relatively intact design feature. 145 Iota Court is a four story building with basement level. It is the largest of the four buildings in this study.

Foundation Walls

Foundation walls are formed of multi-wythe brick unit masonry. These walls extend from the footings up to the underside of the first floor framing along the entire perimeter of the building. The foundation wall is buried in the earth. Partial exposure of the basement elevation exists at the north, east, and west. The portions of the foundation wall open to view are in generally good condition with random cracks or other deterioration.

Moisture is penetrating the perimeter walls below-grade as evidenced by considerable efflorescence at the basement interior. This is most noticeable at the southwest elevation where walkway contour and an external vault provide a flow of water to the foundation wall. Moisture also penetrates the north staircase as evidenced by localized deteriorating concrete. Concrete is painted here.

Image 1.52 *Moisture is penetrating the perimeter walls below-grade. This is most noticeable at the southwest elevation walkway slab contour.*

Exterior Walls

The exterior walls consist of multi-wythe brick unit masonry. The brick masonry observed is largely in good condition, but it contains evidence of instability (e.g. wall length expansion with associated vertical and horizontal cracking; deviating vertical wall plane; protruding brick units; etc.). Various forms of brick and mortar age-related degradation (localized) will need to be repaired; evidence suggests numerous repairs in the recent past. At the parapet, the precast copings at the top of the wall are in good condition but do not appear to have flashing beneath them.

Steel lintels (for windows) are in various forms of disrepair. The lintels are experiencing expansion from moisture-related corrosion, and in-turn, the surrounding brick unit masonry is damaged by its forces. The witnessed degradation is progressive; the upper floor lintels contain the most expansion compared to their lower-floor counterparts. The source for moisture is likely the roof, and furthermore the roof is likely since replaced. The degradation, however, has not ceased, as corrosion is active.

Image 1.53 *The brick masonry is largely in good condition, but it contains evidence of instability including wall length expansion with associated vertical and horizontal cracking, deviating vertical wall plane, and protruding brick units.*

Image 1.54 *Severe rust-jacking between the steel angle lintel and the brick flat arch above the window.*

Image 1.55 *Steel lintels (for windows) are in various forms of disrepair. The lintels are experiencing expansion from moisture-related corrosion, and in-turn, the surrounding brick unit masonry is damaged by its forces.*

The small porches at the west building elevation serve as a deck and possible rescue platforms from each floor. The concrete porch slab is integrated as part of the original construction along with cast-in-place brackets. The concrete condition is generally sound, but its perimeter cementitious coating continues to be affected by slab run-off making it maligned. In one instance a pre-finished metal fascia and soffit system covers the original construction making observation impossible for this effort.

The small porches at the north building elevation serve as rescue platforms from each immediate residential unit. The steel is a combination of integrated (with the building's core structure) as well as surface-mounted. The steel condition is generally sound, but its surfaces continue to be affected by moisture. Structural stability and capacity assessment were not rendered for this effort

Image 1.56 *West facing balcony deck.*

Entry Canopy

The concrete structure of the entry canopy at the north building elevation has significant damage due to water penetration and migration, causing the tips of the supporting steel members to be exposed. Water has precipitated corroding of the steel causing it to expand, thus cracking and spalling portions of the concrete. The cut stone sections of the porch appear sound; the horizontal surface is likely coated or otherwise roofed.

The concrete structure of the entry canopy at the north building elevation has significant damage due to water penetration and migration, causing the tips of the supporting steel members to be exposed.

Exterior Doors and Windows

All of the original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single- and double-hung. Original porches contain modern-generation window units and sheet metal spandrel infill where dedicated open-air exposure once existed. Wood windows that were accessible and viewable are noted to be in generally good condition. Most windows have aluminum combination storms that have protected them from the elements. Masonry of the window heads is fan-style. The east building elevation contains a window bay, originally porches, in stacked fashion, from grade to roof. The north building elevation contains a window bay from second floor to the roof. The exterior doors are non-original. The surrounding componentry is generally in good condition.

Image 1.57 *North facing main entry.*

Image 1.58 *Original wood windows are in place with modern-generation combination storms at their exterior exposure. The style of the original windows is single-hung. Original porches contain modern-generation window units.*

Roof

The roof is a low-slope design bordered with continuous brick masonry parapets with precast concrete caps. The roof also features numerous penetrations including original penthouses and a chimney. The roof structure consists of dimension lumber rafters with board decking which is likely tongue-in-groove profiled. This structure lies upon a poured concrete deck forming the ceiling of the top floor. Attic venting appears to utilize a single gravity-style ventilator; its current operability is questionable. Thermal protection is unknown..

The roofing system consists of a modern-generation EPDM (rubber) membrane. The membrane is surfaced with washed stone, and contains numerous regions of stressed base flashing. Roofing underlayment (e.g. original roofing, tar paper, building paper, etc.) likely existed attached to the wood decking; this material may still be present if it once existed. The age of the exposed roofing system along with its repairs is unknown. Accessory flashing is minimal and consists of sheet metal. The majority of flashing is EPDM membrane-type.

Penthouses emanate at the roof top. They are protected by coated asphaltic membrane (notably, incompatible with EPDM membrane) and also shingles. Apparently only one roof drain provides drainage for the entire roof region. The roofing system and its accessories are in poor condition and rapidly approaching the extents of their serviceable life.

Image 1.59 *The roof is a low-slope design consisting of a stone-ballasted EPDM (rubber) membrane bordered with continuous brick masonry parapets with precast concrete caps.*

Chimney

Brick unit masonry comprises the one existing chimney. The chimney is unsound above the roof-line, with the top courses most significantly deteriorated. The mortar is worn and weathered; approximately 50 percent remains firmly attached. The brick units are displaced or otherwise missing from their locations.

Structural

A significant portion of the structural framing was concealed from view. The exterior and interior walls consist of bearing and non-load bearing solid brick masonry or brick and clay tile masonry. The composition of all areas could not be confirmed due to the presence of finish materials. We noted that part of the support for the front entry tower is missing some decorative cast stone masonry. Cracking in the ends covering the tips of the steel beams were likely a result of flexing in the steel. The cracked masonry was then likely removed to keep sections from falling on residents. Structurally, the steel appears to be supporting the tower adequately despite the cracking problem.

Image 1.60 *View showing the top of the front of the building. Note the entire curved upper section is leaning backward.*

We noted that there were areas where individual bricks were damaged, particularly over exterior openings or within the parapet construction. We noted that many of the steel lintels were corroded and being pushed downward by rust-jacking. Rust-jacking is a term used to describe the leverage that corrosion can apply to masonry as it corrodes. The rust flaking occupies up to 9 times the space steel occupies. This expansion is called rust-jacking. We also noted that there were signs of the masonry walls moving causing cracking and bowing in walls. The most obvious signs are near the tops of the walls. Please refer to the Building Envelope portion of this report for additional information.

The floors of the building appear to be all approximately 10" thick one-way joists approximately 6" wide with clay tile infill. The joists appear to be approximately 16 to 18" on center. The joists are covered with a topping slab of unknown thickness. The condition of the floor framing appears to be good. The stairs are constructed of poured concrete.

Image 1.61 *View of the concrete one way joist and tile infill floor system.*

Interior

The interior layout of this building accommodates six multi-bedroom apartments on each floor off of a central longitudinal corridor. A single stair serves all floors. This stair is in near original condition with the railings, newl posts and trim intact. Interior finishes are also in generally good condition.

Generally the layout of each apartment seems to be near original with exterior porches in filled to provide kitchen space. Partitions are plaster over clay tile. Original 2 1/4"wood floors remain in most areas and some room have carpet. The original wood trim at windows, doors, picture rail and base remain. All of these are painted in most apartments. A few apartments retain original varnish finish on the wood. Many of the original two panel wood doors remain within the apartments.

The narrow corridors are finished in a very simple manner with terrazzo floor and base, plaster walls with a chair rail and plaster ceiling. Light is provided by wall mounted florescent fixtures. Exposed ductwork for heating clutters the ceiling of the corridors and is obtrusive.

Image 1.62 *View of a typical corridor.*

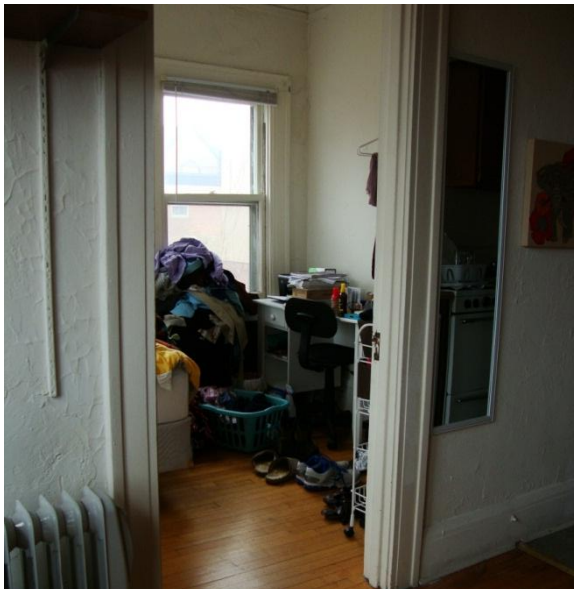

Image 1.63 *View of typical apartment.*

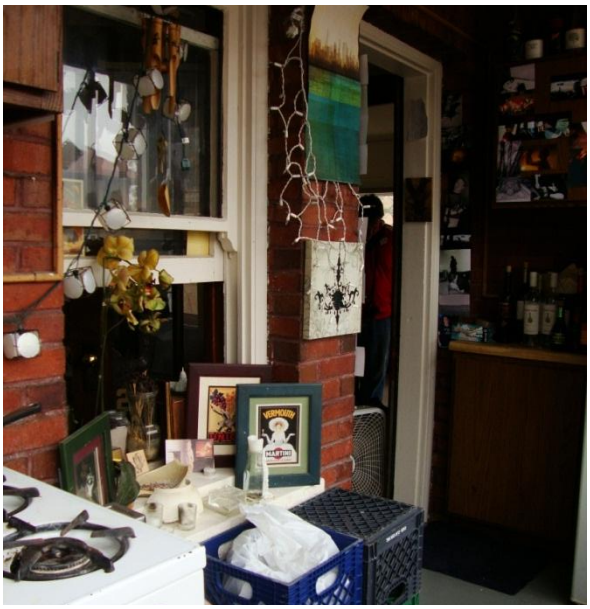

Image 1.64 *View of former exterior porch converted into a kitchen.*

Image 1.65 *View of typical apartment with varnished wood doors and trim and carpeting.*

Image 1.66 *View of the stairwell.*

Heating system

There is one high efficiency Heil furnace that has an input of 100.000 BTUs built in 1995. There are four Lennox high efficiency units from 1994 that all input 125,000 BTUs. There is one furnace per floor. This building still has the original boiler (disconnected) and it's asbestos covered pipes in the boiler room.

Plumbing

The water heater is approximately eight years old. The unit is under sized for building. The body is rusted and the unit is falling apart. The venting for the water heater is very unsafe. A water line is holding up water heater causing a lot of stress on line. The sewer and water lines are in fair to poor condition.

Electrical

The electrical service contains 1 meter. Old cloth wires that seem to be deteriorating were observed. There are still fuses on the electrical system and old push button switches which may be connected to knob & tube wires. Within the apartments there are no GFCI protection and the outlets are the old two prong ungrounded type. The wiring is old and deteriorated and may be attached to knob & tube wires.

Hazardous Materials

Testing for hazardous materials was not performed as part of this work. Due to the age of the structure, lead based paint and some isolated asbestos are assumed to be present as they were widely use in the early 20th century. These are not an issue if they are stable.

Glossary

Coping: A protective cap or cover of a wall parapet, commonly sloping to protect masonry from water

Cornice: A crowing projection or projecting molding that tops the wall surface.

Flashing: Strips of sheet metal bent to fit the angle between any two roof surfaces or between the roof and any projection, such as a chimney or cornice.

Gable roof: A triangular roof shape. A gable roof has two upward sloping sides that meet in middle at the ridge with the slope of both sides at the same angle.

Integrity is the authenticity of a property's historic identity, evidenced by the survival of physical characteristics that existed during the property's historic period or period of significance.

Parapet: A low wall that serves as a vertical barrier at the edge of a roof. Part of the exterior wall entirely above the roof.

Portico: A small porch composed of a roof supported by columns, found in front of a doorway.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an historic property. Work, including preliminary measures to protect and stabilize the property, generally focuses upon the ongoing maintenance and repair of historic materials and features rather than extensive replacement and new construction.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Renovation is defined as the act or process of eliminating the qualities that define the historic character of a building, if they remain extant, and upgrading the property, or portions thereof, to adapt it to contemporary needs.

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

Stoop: The steps and landing which lead to the front door.

Condition Definitions

Excellent: Near original condition, all items that can normally be repaired or refinished have recently been corrected. No functional inadequacies of any consequence evident.

Good: Mostly intact, no obvious maintenance required, little deterioration, retains a high degree of utility and life expectancy.

Fair: Badly worn, signs of wear and deterioration, much repair needed. Deferred maintenance obvious, shortened life expectancy.

Poor: Worn out, badly damaged. Significant repair or replacement warranted, numerous functional inadequacies. Excessive deferred maintenance. At the end of useful life.

Image 1.67 *View of the east façade of 145 Iota Court*