

Work Recommendations



ARCHITECTURAL

OVERVIEW

The Carter G. Woodson Home will require significant preservation treatment in order to return it to a stable and useable facility. At the core of the treatment is the correction of the structural instability caused by so much water damage and neglect and the replacement of the roof to stop and further water infiltration.

METHODOLOGY

The deteriorated areas were previously defined in the Conditions Assessment portion of this report as well as the definition of probable causes. In this section, preservation treatment will be described in detail. To define the preservation treatment, location and quantities, a Preservation Treatment Recommendations matrix has been provided for the architectural recommendations. Following the matrix are narratives for the recommendations made by the structural and mechanical engineers.

RECOMMENDATIONS MATRIX

Figure 5-001: Recommendations Matrix

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
EXTERIOR						
Brick						
A1		Biological Growth	South Elevation, Brick Below East Elevation Entry Stair	Apply biocide to areas of biological growth at brick. Follow with general cleaning of area after other repairs and repointing are implemented.	15 Sq Ft	Category 2
A2		Cracks in Cementitious Coating	Two Story Addition - West Elevation	Remove stucco back to base brick and repoint brick.	130 Sq Ft	Category 2
A3		Crack Through Masonry Joint	Discrete Location on the North, East, South and West Elevations.	Repoint open joints in the building façade to limit water infiltration into the exterior masonry walls. Mortar must be appropriate to match the physical and aesthetic characteristic of the adjacent mortar and building materials.	25 Sq Ft	Category 1
A4		Dislocated Brick	North, West and South Elevations	Remove and reset existing brick units. Shoring may be necessary due to extent of dislocated brick, especially on the three-story West Elevation.	30 Sq Ft.	Category 1
A5		Incompatible Patch	West and South Elevations	Remove existing patch material down to brick substrate. Patch by replacing full brick units if possible. In some cases on the South Elevation the patching is in combination with the outward bulging and dislocation requiring the removal of the patch and the complete rebuilding of the brick in that area.	40 Sq Ft	Category 1
A6		Missing Brick	North, West and South Elevations	Replace missing brick units with brick to match original. Use mortar to repoint that matches adjacent mortar. In cases where missing brick is part of an arch, shoring and removal of adjacent brick will be required prior to reinstallation of units.	18 Locations	Category 1

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
EXTERIOR						
A7		Outward Bulging	North, West and South Elevations	Bulging brick could potentially lead to collapse of brick and wall. The most severe case of bulging brick is at the west corner of the South Elevation. In this location, the entire adjacent wall structure should be shored and the corner should be fully rebuilt from ground to cornice. The bulging at window W304 will also require shoring, removal of brick and reconstruction of the window opening and surrounding brick. The bulging on the North Elevation is minor and will not require building but just repointing.	400 Sq Ft	Category 1
A8		Open Mortar Joints	All Exterior Elevations	Repoint all open joints in the building façade to limit water infiltration into the exterior masonry wall.	100 Sq Ft	Category 1
A9		Paint/Graffiti on Brick	East Elevation	Use graffiti removal material to strip paint from brick and stone. Post cleaning façade wash should be coordinated with repointing efforts.	30 Sq Ft	Category 2
A10		Replacement Sill	South and West Elevation - Windows W103, W106, W208	Wood sill was replaced with brick or concrete and need to be replaced with wood sills as per Period 2 window design.	3	Category 1
A11		Sealant at Mortar Joints	Sealant at Mortar Joints	Remove existing sealant from all mortar joints and repoint joints. This effort must be coordinated with repointing of open joints.	420 Sq Ft	Category 1
A12		Brick Spall	East Elevation	Install replacement brick unit for brick with spall. Repoint around surrounding area and coordinate with façade repointing efforts.	4 Units	Category 2
A13		Concrete Masonry Infill	West and South Elevations - Windows W103, W104, W105, W106, W107, W108, W205, W210	Fully remove concrete masonry from windows openings and make necessary repairs to wood at windows.	8 Windows	Category 1
Stone						
A14		Dislocation of Stone	Bluestone at East Elevation Stairs to Basement	Remove stone treads. Rebuild brick support after removing all vegetative growth, and reset stone treads level.	6 Treads	Category 2
A15		Hairline Crack in Single Unit	East Elevation	Provide injection grout at hairline crack to prevent further deterioration.	2 Stone Units	Category 2
A16		Open Joint	East Elevation	Repoint all open joints in the building façade to limit water infiltration into the exterior masonry wall.		
A17		Stone Spall	East Elevation	Provide stone dutchman at stone spall after stone unit has been removed and rusting ferrous iron cramp has been replaced with stainless steel cramp.	2 Stone Units	Category 1
A18		Stone Staining - Metallic	East Elevation - Front Stoop Stairs	Chemically clean the staining as a result of rusting of the metal door grille and stoop railing. Door grille to be removed given it was installed in Period 5. Stoop railing is to be repaired, cleaned and repainted with rust inhibitive paint.	5 Sq Ft	Category 2
A19		Dislocated Wood Member	East Elevation - Decorative Cornice	Wood members need to be re-anchored to the masonry as well as the adjacent wood members. The entire cornice then needs to be patched, repaired and repainted, with all joints having been filled with sealant.	40 Sq Ft	Category 1

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
EXTERIOR						
Wood						
A20		Missing Wood Element	Exterior Windows on North, West and South Elevations - W104, W105, W108, W106, W204, W205, W206, W207, W208, W210, W304, W305, Front Door (D101)	The windows on the North, West and South Elevations have all lost trim molding, leaving gaps between the brick and the wood window frame. The molding need to be replaced as part of the window restoration. At the front entrance door (D101) many molding members that were installed as part of 1988 repairs have failed. The molding needs to be replaced, along with the adjacent existing molding, to match the historic profile of the molding at the transom. The basement door (D001) is missing part of its frame and requires being completely rebuilt.	14 Windows, 2 Doors	Category 1
A21		Paint Loss	Window Frames and Door Frames at All Exterior Elevations, Decorative Cornice	All wood windows and window frames require patching, repairing and repainting. At 6 windows, the sills will require significant repair due to wood rot. Similarly, the exterior doors will require patching, repairing and repainting in addition to the replacement of missing wood elements mentioned previously.	All windows, all doors and painted wood cornice	Category 1
Metals						
A22		Corrosion	Window Grilles on East, West and South Elevations, Cast Iron Entry Railing	The window and door grilles, with the exception of those on windows W001 and W002 on the East Elevation, should be removed, as well as their ferrous metal anchors that are recessed in the masonry. Grilles at W001 and W002 date to Period 1 and should be cleaned, patched and painted with rust inhibitive paint. The cast iron railing at the entry stoop will require patching, cleaning and repainting with rust inhibitive paint as well. The missing elements at the primary newel post should be replaced.	2 Window Grilles and Front Stoop Railing	Category 2
A23		Ferrous Metal Anchors	East Elevation	Remove anchors from mortar joints and repoint joint for (8) of the anchors. The (4) remaining anchors that date to Period 1 and once held Carter G. Woodson's sign should be cleaned and painted with rust inhibitive paint to arrest further corrosion.		Category 2
A24		Metal Grilles	Windows W101, W102, W104, W105, W106, W108, W204, W206, W207, W208, W209, W304 and Doors D001 and D101	Remove all window and door grilles and anchors with the exception of those on W001 and W002 which date to Period 1 as previously described. Most of these grilles date to after the Period of Significance and should therefore be removed. The anchors for these grilles are rusting and causing spalling of brick at 3 windows on the South Elevation.	Remove metal window grilles on 12 windows and 2 doors	Category 2
A25		Inadequate Flashing	Chimneys and Edge Conditions at Upper Roof of Three Story Structure	The single ply membrane roof was installed as part of emergency repairs done at the end of Period V. When it was installed, the edge conditions were attached to the substrate with mastic and should have been count flashed into the masonry. Flashing should be provided for the existing roof or the roofing should be replaced to the standing seam tin roof that would have been there during Period 1.	50 LF	Category 1

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
EXTERIOR						
Roof						
A26		Failing Gutters or Missing Gutters	Upper and Lower Roof	Aluminum gutters were installed as part of emergency repairs done at the end of Period V. No gutter was installed at the Upper Roof. Upper and Lower Roof require new copper gutters that should be installed in conjunction with the replacement of the roof.	30 LF	Category 1
A27		Failing Roof	Upper and Lower Roof	The membrane roof installed as part of emergency repairs was not properly installed and is not successfully keeping water from penetrating the building envelope. The roof should be fully replaced with a standing seam tin roof that matches adjacent townhouse roofs which maintain their Period 1 roofing.	1000 Sq Ft	Category 1
Windows						
A28		Missing Glazing Putty	All Windows	Glazing putty has aged and dried requiring complete replacement at all windows.		Category 1
A29		Cracked or Broken Glass	Windows W102, W106, W201, W202, W206	Replace broken glass panels with new to match existing.		Category 1
A30		Replace Incompatible Window Sashes	Windows W101, W102, W201-203, W301-303	Sashes in these windows were replaced in Period V and require replacement with sashes with pulley/counterweight operation.		Category 2
A31		Replacement of Missing Windows	Window Openings W107, W209, W305	These windows were removed due to deteriorating masonry conditions and will require complete replacement with painted wood 6 over 6 double hung pulley/counterweight operated windows.		Category 1
Doors						
A32		Replace incompatible doors	D001, D101	Door D001 is a flush wood door installed during Period V and requires replacement with a paneled stile and rail door. D101 was also installed in Period V and requires replacement with a true stile and rail construction door with two over two recessed panels with the top panels being arched. The door design can be matched to the 1988 HABS photo.	2 Doors	Category 2
A33		Replace Missing Door	D103A, D110A	Door 103A and D110A must be replaced. They were removed during Period 5 as a result of masonry and wood deterioration at these openings. The door D103A should be a single 3' stile and rail paneled door with 12" sidelights based on measurement taken from remaining header molding. Door D110A should be a 3' stile and rail paneled door.	2 Doors	Category 1

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
INTERIOR						
Brick						
A34		Interior Open Mortar Joints	Basement North Elevation	Repoint open joints at this interior elevation to prevent water infiltration and improve structural capacity.	47 SF	Category 1
Stone						
A35		Stone Soiling	Fireplace Hearths - Rooms 104, 105	Room soiling at these locations with a mild cleaning solution and water wash.	10 SF	Category 2
Metal						
A36		Surface Rust at Steel	Basement Steel Columns and Beams	Steel should be scraped, cleaned and repainted with a rust inhibitive paint.	8 Columns, 2 Beams	Category 1
Plaster						
A37		Complete Loss of Plaster from Lath or Masonry	See Conditions Assessment Plans for Locations	These areas require removal and replacement of plaster. Damaged or crumbling plaster should be removed back to solid or sound material, feathering the edges. The removal of layers should be feathered by layer; first and second brown coat layers should be feathered back each by an inch, finally tapering to the historic plaster up to one inch for each layer. The new plaster should then be installed with two layers of brown coat and a finish coat. This plaster should be feathered into the exposed edges of the historic plaster.	68 Sq Ft	Category 1
A38		Complete Loss of Plaster Wall Board	See Conditions Assessment RCP's	In these areas gypsum wall board was installed to replace either plaster on lath or historic plaster board. Where historic plaster wall board has failed, portions of the plaster board should be removed to the extent of the complete sheet (they were usually installed in 4'x8' sheets). New plaster board should be installed and with screws. Fiber mesh and a skim coat of plaster patch should be applied to cover the joints. Where plaster on wood lath was originally used, all gypsum wall board should be removed, two layers of scratch coat and a finished layer of plaster should be installed over repaired wood lath.	See Conditions Assessment RCP's	Category 1
A39		Hairline Crack in Plaster Wall	See Conditions Assessment Plans for Locations	For larger hairline cracks, apply fiber tape and follow with a skim coat. Smaller hairline cracks can be repaired with a simple skim coat.	382 Ln Ft	Category 2
A40		Major Crack in Plaster Wall	Rooms 102, 103, 104, 105, 110, 201, 202, 203, 205, 208, 210, 301, 303, 305	For major cracks, use flat head wood screws and washers to reattach plaster to substrate (either lath or masonry). Follow this procedure with application of fiber mesh and a skim coat.	175 Ln Ft	Category 1
A41		Separation of Plaster from Wood Lath or Masonry	Rooms 102, 105, 201, 301, 305	For major cracks, use flat head wood screws and washers to reattach plaster to substrate (either lath or masonry). Follow this procedure with application of fiber mesh and a skim coat.	160 Sq Ft	Category 1
A42		Failed Paint on Wall	Rooms 102, 202, 301	Sources of water penetration must be stopped as part of the exterior envelope repairs. It must be verified that plaster has dried to a significant level before application of new paint.	37 Sq Ft	Category 2

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
INTERIOR						
A43		Severe Water Damage to Plaster	See Conditions on Assessment Plans	Same as repair for A37	200 Sq Ft	Category 1
Wood						
A44		Failed Floor Board	Flooring at Rooms 208, 301	Floor boards will require being removed. Structure below should be repaired if needed and a new board installed to match existing in size and grain. If possible, it would be advantageous to find aged boards that reflect similar grain and wear.	3 Sq Ft	Category 1
A45		Incompatible Metal Patch	Rooms 102, 104	Patches are covering gaps in floor boards that are not safe. Patches and nails should be removed and the boards on either side of the gap should be replaced with new boards installed to match existing in size and grain. If possible, it would be advantageous to find aged boards that reflect similar grain and wear.	16 Sq Ft	Category 2
A46		Plywood Patch	Flooring at Rooms 103, 109, 201, 305	Plywood patch should be removed. The patch was installed due to failing floor boards and structure. At 103, the floor structure should be repaired from below prior to installing new floor. The plywood floor in Room 109 was installed as a replacement for 2 1/2' strip flooring. The plywood should be removed and new strip flooring reinstalled. At 201, the plywood should be removed and the lath ceiling of the floor below should be removed so that adequate repair or replacement done to the second floor framing structure. Once the structure has been repaired, all historic floor boards should be reinstalled. Missing or fully deteriorated floor boards will have to be replaced. Similarly, at the floor by Room 305, the patch is covering failing floor boards that are fully deteriorated and must be removed and replaced.	120 Sq Ft	Category 1
A47		Significant Wear	All Interior Floors in on First, Second and Third Floor.	All interior floor show significant wear. The floor finish has been completely worn off in most locations. There is evidence at the room edges of the historic finish. The flooring should be cleaned and refinished. The finish will require further analysis by a conservator to determine the most accurate recommended finish for Period 3.	80 Sq Ft	Category 2
A48		Termite Damage	Wood Flooring in Rooms 103, 201, 301 and 305	Wood flooring that has lost significant section due to termite damage should be removed and the floor boards should be replaced to match existing.	5 Sq Ft	Category 1

No.	Building Component	Condition	Locations (Also Refer to Conditions Assessment Drawings for Exact Locations)	Preservation Treatment Recommendation	Quantity if Applicable	Category 1 or 2
INTERIOR						
A49		Sagging Floor	Flooring at Rooms 103, 109, 110, 208, 210 and 301	The sagging floor is a result of failing structure. The sagging floor in room 103 and be shored and failing structure repaired from below. The sagging floor in 110 cannot be accessed from below because there is no basement. The flooring in the rooms will need to be removed in order to repair or replace the structure. The floor would then be reinstalled. The sagging floors in Rooms 208 and 210 are a result of not only the floor joists having dislocated from the masonry joist pockets, but also because the masonry is failing. In conjunction with the rebuilding of the masonry, the joists will have to be repaired to correct the sagging. The sagging floor in 301 will require the removal of the ceiling below to repair the deteriorating structure.		Category 2
A50		Paint Loss on Wood	Miscellaneous Rooms	Water damage has caused significant paint loss on wood window and door casings as well as doors. The loose paint should be scraped back to solid substrate and edges feathered in preparation of priming and repainting.	300 Sq Ft	Category 2
A51		Missing or Damaged Molding	Miscellaneous Window, Door and Base Molding locations.	Replace missing molding to match adjacent existing in profile.	8 Ln Ft	Category 2
Wood Stair						
A52		Sagging Tread	First to Second Floor Stair	The first floor structure surrounding this stair requires either full replacement or significant repair. The termite damage and rot to the supporting structure has caused the stair to sag and pull away from the adjacent wall.		Category 1
A53		Unstable Railing	First to Second Floor Stair	The railing at this stair has lost stability partly due to the sagging of the stair itself. The support for the newel post needs to be repaired or replaced so that it is rigid and can anchor the rail. Loose balusters will require rigid attachment to the treads once the stair has been stabilized.		Category 1
A54		Significant Wear on Treads and Risers	First to Second and Second to Third Floor Stair	Similar to the floors, the stair tread show significant wear down to bear wood. The wood treads require cleaning and refinishing. The finish will require further analysis by a conservator to determine the most accurate recommended finish for Period 3. The risers show wear at their midpoints. The paint has begun to wear off. They will require patch and repainting.		Category 2

STRUCTURAL

EXTERIOR

East Elevation:

A significant percentage of the street façade needs to be re-pointed to assure long term structural integrity of the masonry. The source of water and mechanisms of moisture entrapment, along with selection of mortar type and appearance should be considered based upon architectural recommendations. Treatment of rusting metal ties and stone masonry should be implemented in accordance with architectural recommendations to minimize water infiltration and disturbance of the masonry.

The limestone lintel with the noted mid-span hairline crack should be pinned together, perhaps with diagonal stainless steel rods in epoxy to assure the long-term stability of the lintel and masonry above. However, there does not appear to be any immediate stability concerns at this particular location.

At the entrance stair, an excavation to investigate the existence of a footing that extends below the frostline is warranted. If such a footing is not present, a new foundation should be designed and installed. Temporary support and repositioning of the stone landing slab would be required.

West Elevation:

Much of the brick at the west elevation of the two-story structure of the house must be rebuilt. Interior framing and bearing conditions will need to be rebuilt as well, to repair the noticeable bulging in many of the walls. Significant care will have to be used in removing the CMU infill from the window openings, since much of the masonry surrounding the windows is in a precarious state of disrepair. The flat arch construction may be re-built, however the depth and proportions are insufficient by masonry standards. As such, it is prudent to install stainless steel lintels over the openings and reconstruct the brick in a manner faithful to the original appearance.

Iron security grilles should be removed. The deterioration at ferrous iron anchoring devices will require localized masonry removal, cleaning, and reconstruction, but should be implemented in accordance with architectural recommendations.

The condition at the southwest corner of the two-story structure is highly unstable. Stabilization of this area will require a full reconstruction, from foundation to eave of the corner, including the three adjacent windows and doorway (W107, D110A, W209 and W210). Prior to implementation of the repairs, temporary stabilization methods, such as the erection of shoring and bracing, is recommended. Masonry work should be done in coordination with repairs to the floor framing, assuring proper joist bearing and bracing of the walls.

At the three story portion of the west façade, the brick at the third floor level will require significant masonry repair and reconstruction. This work is to be done in coordination with framing repairs within and below. Particularly significant is the replacement of the main transfer beam at the third floor level which supports this exterior masonry wall. Temporary shoring of this exterior wall and its supporting transfer beam from within the stair area of the house is strongly recommended.

Repairs and reconstruction for flat arches over window openings W304 and W305 will likely incorporate new steel lintels as described above.

Upper and Lower Roof:

Chimneys at the roof level should be covered, so as to prevent bulk moisture entry into the interior. Chimneys should be re-pointed.

INTERIOR

Basement and First Floor Framing:

The interior masonry walls should be re-pointed, with some localized rebuilding around joist bearings. The conditions do not compromise current stability, but should be addressed in the near future as part of maintenance efforts, in accordance with architectural recommendations. The house should be inspected for termites and insects and treated accordingly.

The staircase into the basement and the framing around it are currently compromised. We do not recommend use of this stair without installation of temporary shoring below.

The floor framing the rear addition (below Room 110 over the narrow crawl space) appears structurally unsound and will likely require full reconstruction. A sufficient space for a crawlspace will be required (18 inches clear).

First Floor and Second Floor Framing:

At the western addition (Room 110), significant rebuilding will be required for the masonry bearing walls around the southwest corner. In addition, the floor framing will require significant reinforcement, most likely full sistering of approximately 90% of joists in the west area of the basement and 10% in the east area, to re-establish proper bearing and connection of the floor diaphragm along the south wall.

The wood lintel above door D103A to the south alley should be replaced. In the interim, the opening should be supported temporarily until proper repairs can be implemented.

Much of the framing on all floors has suffered from localized, sustained water damage. Typically the deterioration in plaster finishes on walls and ceilings points to these areas. Although some of the framing has been

directly observed, the structure in such areas of clear moisture infiltration should be exposed for full evaluation and determination of required repairs.

Framing around the central stair will require substantial reinforcement and some reframing in response to the significant water penetration. Framing for the stair landings appears to rely on support from the curved stair constructions, all of which has suffered significant damage and deflection. As a result, general shoring and possible repositioning of the framing will likely be required as part of the overall repair work to the stair.

Second Floor and Third Floor Framing:

At Room 210 in the western addition, significant rebuilding will be required for the masonry bearing walls around the southwest corner, continuing from the floor below. The calculated live load capacity of the roof framing over the two-story addition is insufficient, so roof framing should be sistered or augmented to support current code-required loadings. Previous code requirements for live load capacity tended to be around 20 psf, however the current requirement is 30 psf in Washington DC. It is likely that with materials testing a higher allowable stress may be warranted and the high roof framing will prove sufficient, even by current standards. Particular attention should be given to required snow loading adjacent to the third floor wall where the framing is susceptible to drift loading.

Deterioration of the first floor wood lintel above the door D103A to the south alley has apparently caused settlement of the wall above. This section of wall will likely require localized reconstruction.

Portions of the floor boards will require replacement and the framing will need to be surveyed closely to determine the extent of damage, moisture-related and otherwise. Around the stair opening, localized floor framing reinforcement and replacement will be required. In Room 208, the floor beam below the east wall (bathroom wall) will require reinforcement at the failed splice.

The greatest structural concern is at the central stair area. The third floor beam supporting the west masonry wall of the original building is severely deteriorated and will require replacement. Temporary shoring below this beam and wall should be introduced down to the foundation level.

Third Floor and Roof Framing:

Localized framing repairs to the rafters and ceiling joists may be required in response to variable levels of deterioration from water infiltration and past fire damage. The calculated live load capacity of the roof framing is approximately 31 psf, based upon initial assumptions in wood capacity. This meet current code requirements for roof snow load.

Summary:

In order to bring the building up to code to function as a house museum the following structural repairs will have to be implemented:

- Exterior
 - Rebuild brick on first and second floor at southwest corner of two story addition.
 - Rebuild brick on west elevation of three story structure.
 - Repoint masonry at all elevations and chimneys.
 - Replace lintels above Doors D103A and D110A.
 - Repair masonry arches above all windows at West and South Elevations.
- First Floor Framing
 - Replace/repair rotting joists.
 - Repair bearing pockets in masonry.
 - Repair framing around basement stair.
 - Replace floor joists below Rooms 109 & 110.
- Second Floor Framing
 - Repair/replace framing at first floor stair.
 - Replace/repair floor joists in Rooms 207, 208 & 209.
 - Repair bearing pockets in masonry.
- Third Floor Framing
 - Replace built up beam that supports exterior masonry wall.
- Roof Framing
 - Replace/repair framing of roof at two story addition.
 - Repair bearing pockets in masonry.

MECHANICAL, ELECTRICAL, PLUMBING AND FIRE & LIFE SAFETY

The building is presently used as an office space, to change the building use it will not comply with today's DC codes. The codes to be followed today are IMC2000, IPC2000, NEC and District of Columbia's Supplements.

Fire Alarm System:

A new NFPA / ADA approved UL listed fire alarm system should be installed.

Fire Sprinkler System:

A sprinkler system should be installed for it is the proper fire protection system given the new use of the building as a museum. Additionally, the building will most likely be used in conjunction with the adjacent buildings, so they should all be part of the same sprinkler system.

Mechanical System:

The building needs a complete new mechanical system that would be adequate for its use as a house museum. This system could be accommodated in the adjacent building. The existing boiler and radiator piping have to be replaced, but the existing radiators could be reconditioned and reused as part of a working system. If the existing radiator system is reworked, it could meet code. However, heat loss calculations would need to be performed in order to determine if additional heating would be required.

A new mechanical system can be located in the existing basement or in the adjacent building and ducted over to supply conditioned air to this space. Ventilation air for the building can be accommodated by providing outside air duct connecting to the new mechanical units located in the basement or in adjacent building. Combining the existing historic building with the adjacent building would probably require either proper fire separation or legally combining the two buildings into one unit; if one unit is the selected option the new electrical service would be required.

Plumbing System:

The plumbing supply system needs to be replaced with a waste system that is code compliant if the plumbing fixtures are to stay in functional in the existing building. A new water heater will be required and can be located in the existing basement or in the adjacent building and can be sized to accommodate the new layout or use of the building as required. All new toilets and bath rooms can be located in the adjacent building and will be supported with a new water heater..

Electrical System:

In order to meet current electrical code requirements when the Carter G. Woodson Home is used as a Museum, existing wiring, outlets, switches and

lighting will have to be removed and replaced. All new wiring, switches, outlets etc must comply with the latest NEC Code.

Lighting:

New interior lighting and switches will be necessary to coordinate with the future use designation of the rooms. New exterior lighting for night visitors and security should also be considered.

Security System:

Given that the painted iron security grilles are to be removed, a security system will have to be installed to protect the property from vandals and intruders. At a minimum this alarm system should include glass break detection and contacts at all first floor windows, contacts at all exterior doors and motion detectors on all three floors.

Future Elevator:

If a future elevator is considered, the existing electrical service may not be sufficient to support both air-conditioning and a new elevator. Service calculations with these potential loads will be the governing factor to determine if the present service is sufficient. Considering that several town houses may be combined the present electrical services will require one new electrical service sized to handle the loads of the combined house.