Masonry (Brick, Stone, Concrete)

Brick and stone are commonly used in the Media historic districts as wall materials. In addition chimneys, arches, porch foundations and stairs, pediments, window and door sills and lintels can be made of brick, stone and concrete. Carved stone, terra cotta or cast stone is often used for decorative features.

Masonry is one of the most durable building materials and, properly maintained, can last indefinitely. It is, however, susceptible to deterioration from acid rain, airborne pollutants, wind, salts used for snow melting, and organic growth, all of which can leave masonry vulnerable to water penetration and subsequent freezing and thawing which will ultimately damage any kind of masonry.

Common Masonry Materials in the Historic Districts

BRICK is the predominant exterior building material throughout the Media historic districts. The hardest, best quality bricks were usually reserved to face exposed facades, while interior bricks might be softer. There are various styles of brick bonding patterns used throughout the historic districts.

STONE – Various types of stone have been traditionally used in wall construction. Granite is a natural stone, prized for its hardness and durability. Its visual characteristics include a wide range of color from gray to red to black, a glossy or matte finish, and a speckled appearance. Granite is often used only as a foundation material or as trim.

LIMESTONE, SANDSTONE AND MARBLE can be used for lintels, window sills, and water tables and as a face material on some of the historic districts buildings.

CONCRETE is a common masonry material in 20th-century buildings. It is a cast material consisting of Portland cement, sand, and aggregates such as gravel. Iron rods – "rebar" – are often embedded in concrete walls to provide strength. (Refer to Preservation Brief Preservation of Historic Concrete at http://www.nps.gov/tps/how-to-preserve/briefs/15-concrete.htm.)

CAST stone, commonly used as a trim material, is actually concrete used to imitate stone. It can be cast in virtually any shape, including ornamental designs.

STUCCO is an exterior wall covering consisting of Portland cement, lime, sand, and water. Stucco is traditionally applied in three coats directly over brick or stone rubble walls with a finish that is smooth. Stucco tolerates movement and allows moisture to pass to the wall surface and evaporate. Nevertheless, it is not advisable to add stucco to an exposed brick facade, since it hides the original facade, may damage the brick, and conceals structural problems. (See Preservation Brief The Preservation and Repair of Historic Stucco at http://www.nps.gov/tps/how-to-preserve/briefs/22-stucco.htm.)

Before: Stucco has come off, exposing the stone to weather conditions.

After: The masonry has been restored and the structural integrity of the wall is ensured.

Typical Masonry Repairs and Treatments

KEEPING MASONRY DRY – Moisture is enemy #1 of masonry, therefore keep masonry as dry as possible and make sure that it is allowed to dry if it does get wet. Roofs, gutters, cornices, and downspouts should be routinely maintained to prevent moisture from penetrating walls, and storm drains should be kept clear to help keep foundations dry. It is also essential that the mortar joints surrounding masonry units be kept in good repair to prevent moisture penetration. (See Preservation Brief Holding the Line: Controlling Unwanted Moisture in Historic Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/39-control-unwanted-moisture.htm.)

CLEANING MASONRY – In most instances masonry walls should not need cleaning. Masonry cleaning, when done incorrectly, can result in serious problems that outweigh any aesthetic gains. Brick, especially, has a hard, protective surface formed during the manufacturing process which can be damaged by cleaning, leaving the wall vulnerable to moisture. If, however, cleaning is necessary to remove graffiti, grime, or staining from metal or organic growth, the gentlest method should be used. Test a section first. Often, scrubbing the masonry with a soft bristle brush with warm water and common household detergent will work.

Under no circumstances should aggressive blasting methods -- e.g., sand blasting -- be done. This will cause irreparable damage to older brick, and even stone. (See Preservation Brief Dangers of Abrasive Cleaning to Historic Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/6-dangers-abrasive-cleaning.htm.) Other methods such a low-pressure washes, chemical cleaners, or so-called "soft-blasting" may be acceptable, but should only be used with the prior approval of the Media HARB.

MASONRY COATINGS – In most cases, so-called protective "waterproof" coatings — including waterproofing sealers, water repellents, graffiti protectors – are not recommended. These water repellents seldom work for more than a couple years, often create a shiny or milky appearance to the masonry surface, and in some cases may even entrap moisture. Masonry needs to "breathe" so that moisture in or behind the masonry can escape through the surface, rather than migrate back to the interior, causing interior damage. More effective is to correct the root causes of excessive moisture in masonry walls. (See Preservation Brief Assessing Cleaning and Water-Repellent Treatments for Historic Masonry Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/1-cleaning-water-repellent.htm.)

MASONRY PAINTS – Paint, too, can create an impermeable film and cause serious moisture problems and spalling. Painting also creates unnecessary maintenance; like all surfaces, masonry, once painted, will need periodic repainting. And, of course, paint radically changes the appearance of historic masonry. If masonry has already been painted, and needs repainting, it is important to use a paint that is designed for masonry that does not create an impermeable film.

Sandblast or use of high-pressure power washing to clean masonry can scar masonry surfaces, allowing moisture to penetrate.

An example of improper joint width, color, and joint profile on left.

An example of appropriate repointing in this stone wall.

MASONRY PATCHING – Repair of damaged masonry is a specialized job for a skilled professional. Masonry consolidants such as silanes and epoxies penetrate the pores of the stone, making it stronger and resistant to further deterioration. Consolidants can bring disintegrating and spalling masonry back together and increase the masonry's strength and resistance to further deterioration. Cement-based patching materials are used to repair sections of failed masonry. The patching material should be compatible with the masonry in texture, thermal-expansion characteristics and color. The masonry patch should replace only the material that is missing.

REPLACING MASONRY UNITS – A particularly effective repair method is to remove the unit of masonry that is damaged to its full depth or to sound subsurface material. Replace with the new or salvaged material using a traditional mortar. The brick should match in size and color. Again, care should be taken to maintain the mortar joint.

REPOINTING – The process of replacing deteriorated mortar joints with new mortar is called repointing. All loose and deteriorated mortar is carefully raked out of the joint by hand, and new mortar is inserted. In most cases, repointing should be a routine maintenance procedure necessitated by the inevitable, but natural weathering away of the original mortar. (Also see Preservation Brief Repointing Mortar Joints in Historic Masonry Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/2-repoint-mortar-joints.htm.)

KEEP THESE POINTS IN MIND WHEN REPOINTING:

- First determine if there are causes of mortar deterioration that should be corrected before repointing. In some cases the erosion of mortar joints is exacerbated by excessive water infiltration caused by leaking roofs or gutters, missing or disconnected downspouts, damp foundation conditions, or differential settlement of the building.
- Use a mason experienced in repointing historic masonry.
- Repoint only those joints which have eroded; this is known as spot pointing.
- Thoroughly rake out deteriorated old mortar before repointing. Hand-raking the joints is preferred. Using powered saws, hammers or chisels can easily damage old brick or stone. Care should be taken to remove only the old mortar without damaging the edges of the masonry units.
- Use a repointing mortar that duplicates the strength, composition, color and texture of the original mortar. Repointing mortar should be tried on a test patch, and evaluated after it has cured for how well it matches the original in color, hardness, and joint profile.

MASONRY STEPS – The joints on masonry steps should always be mortared to prevent moisture from getting behind the stones where it may freeze and expand, dislodging the stones. Masonry steps can be taken apart and reassembled if they have shifted dangerously out of position, although additional structural support may also be required.

Before: Wood lintel has rotted, causing brick to settle.

After: New wood lintel and brick reinstalled.

Windows, Doors, and Other Openings

Windows and doors, by their proportion, shape, location, and patterns, can contribute significantly to a building's historic character. These openings in a building's exterior also provide opportunities for natural light, ventilation, and visual connections to the interior.

PREVENTIVE MAINTENANCE – Windows and doors will require maintenance and repairs to reestablish their smooth operation and improve their energy efficiency. The two major causes of damage are exposure to the exterior elements and interior condensation. To minimize these problems, areas vulnerable to water should be inspected regularly and sealed when necessary.

Minimal recommended window and door maintenance items include: maintaining caulking, glazing putty, and weather-stripping windows and doors; check sills and thresholds to ensure that water runs off; repair cracked window panes; and remove all chipping and peeling paint before repainting.

REPAIRS – Original window and door units are complex architectural features made up of many components. An experienced carpenter can patch, splice, consolidate, or otherwise reinforce parts as needed. These types of repairs are preferred to total replacement.

Damage or rot to wood windows and doors is relatively easily to repair. Dents and surface marks can be fixed with glue, plastic wood, small wood shims, and household tools. Stiles and rails can be matched by experienced mills and new panels and moldings can be made to replace missing and damaged parts.

Wood windows and doors that exhibit surface deterioration, but appear to be sound upon testing with a probe, can be repaired in a cost-effective manner by treatment with an epoxy consolidant, with replacement limited only to those sections that exhibit severe deterioration. (See Preservation Brief The Repair of Historic Wooden Windows at http://www.nps.gov/tps/how-to-preserve/briefs/9-wooden-windows.htm.)

Rotting areas of the frame, often at the window or door's bottom where the end grain has absorbed water, can also be consolidated with epoxy resins, and missing areas can be reconstituted and molded out of epoxy paste fillers. Or, a replacement piece of wood can be mortised in place by an experienced carpenter. Such "Dutchman" patches are also useful when locksets or hinges are changed and the mortises of the former hardware exposed.

Before reglazing and painting

After restoration

Not Recommended: vinyl replacement window with inserted grid lacks articulation of a true divided-lite window or appropriate trim.

Recommended: This new storm window protects the original window while matching its shape.

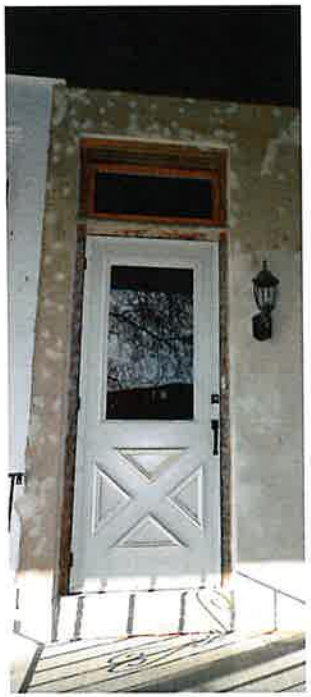
REPLACEMENT DOORS AND WINDOWS – Replacement of original windows and doors should be a last resort, only when the severity and extent of deterioration warrants. If replacement doors or window sash and frames are installed on primary or highly visible facades, it is recommended that they match the original in materials, operation, configuration (the pattern of glass panes or panels), molding profile and detail. Matching historic windows and doors maintains the historic character of the building and helps retain the sense of scale and rhythm of the structure.

Vinyl-clad windows or doors, snap-in window muntin grilles, and mirrored or tinted window glass are examples of alterations that are discouraged. Plans for replacement windows and doors will be submitted to the HARB for review and approval.

STORM WINDOWS AND WEATHERIZING - Storm windows and doors insulate against noise and drafts, and exterior storms protect windows and doors from weathering. A variety of cost-effective options exist to improve the energy efficiency of historic windows. The first – and often least expensive and most effective – strategy should be to replace deteriorated caulk and glazing putty; repair damaged, loose or missing wood elements; and install new weather stripping around the sash and frames and at the meeting rails of windows to prevent drafts. Weather stripping is one of the least expensive means of improving energy efficiency, yet it can increase energy performance by as much as fifty percent.

Exterior storm windows should be of a design that does not overwhelm the appearance of the underlying window. The meeting rails and stiles of the storm window – whether applied to the exterior or interior of the historic window – align with those of the historic window and the color match the color of the window frame.

Interior storm windows are considered more historically sensitive, especially on primary facades.



Before: Inappropriate mock Colonial aluminum storm door.

After: Wooden replacement in appropriate style.

Wood Elements (Porches, Siding, Eaves, Cornices, Trimwork, Roof or Wall Shingles)

Although the historic buildings in the historic district are predominantly brick and other masonry materials, most still have some important exterior elements made of wood, and some have wood siding on the walls.

Among the wooden elements may be doors and windows, porches, stairs and railings, cornices, and decorative features such as brackets and finials.

These wood elements were fabricated in a variety of ways: they were carved, sawn, planed, or turned on a lathe. Many wooden elements – such as a wooden cornice – consist of many wooden pieces nailed, screwed and/or glued together.

Some exterior walls in the historic districts have original wood siding, e.g., clapboards or shingles, and these should be preserved or repaired. If replacement is necessary, new materials should match the original ones to the extent possible. Modern replacement materials such as vinyl or aluminum are discouraged.

KEEPING WOOD DRY – Exterior woodwork can last a long time if properly maintained. Minimal means of keeping the wood dry are providing a protective coat of paint, keeping joints well sealed with caulk or sealants, and ensuring that rainwater runs off properly. Horizontal surfaces are particularly prone to decay. Be sure that susceptible areas such as window sills, porch floors, or stair treads retain the almost imperceptible, but critical forward pitch which will shed rainwater.

ROTTED WOOD – Where wood is rotted, one means of repair is to replace only the sections decayed rather than scrapping a whole architectural element that is otherwise sound. An experienced carpenter can "piece in" new sections of wood that replace the rotted parts. Partly rotted elements can also be saved by using special wood fillers or chemical consolidants. This can be particularly successful for window sills in which the wood grain is severely eroded. Often, it's feasible to carefully disassemble the parts of wooden elements and replace only those parts that are unsalvageable. Replacement parts should match the original in dimensions, details, materials, and workmanship.

REPLACEMENT OF WOODEN ELEMENTS – If a wooden architectural element is beyond repair, replacement may be the only recourse. Matching the dimensions, materials, details, workmanship and finish of the original is preferred. "Off-the-shelf" replacement parts rarely match these qualities.

There may be acceptable deviations, however. For example, if both the original and replacement wooden element was/is painted, a different wood species (or even fiberglass) might be used if all other details match.

Before: Minshall House cornice repair

After: Minshall House cornice repair

FOR MORE INFORMATION:

See Preserving Wooden Porches at http://www.nps.gov/tps/how-to-preserve/briefs/45-wooden-porches.htm.

See Siding on Historic Buildings: The Appropriateness of Substitute Materials for Resurfacing Historic Wood Frame Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/8-aluminum-vinyl-siding.htm.

Finishes (Paint, Stain)

PAINTING – Most exterior wood is protected from water and sunlight with paint. Regular inspections of the condition of the paint surfaces will reveal when the paint is peeling, flaking, bubbling, or chalking. If the deterioration is limited, it's often possible to do spot painting, but if damage is widespread, it's probably time to re-paint all wood surfaces.

See Preservation Brief Exterior Paint Problems on Historic Woodwork at http://www.nps.gov/tps/how-to-preserve/briefs/10-paint-problems.htm.

The proper preparation of wood prior to painting is as important as the painting itself, and the paint manufacturer's or other professional guidelines should be followed. Before painting it is recommended that sources of water infiltration, rot, or insect infestation, are corrected, and that fungal and vegetative growth is removed. In addition, open joints between wood elements should be filled with the appropriate sealants.

New paint should be applied to ensure that it will properly bond. Use a primer that is compatible with the finish coats and follow the paint manufacturer's instructions regarding application procedures, coverage and the acceptable weather conditions for painting. Most paint manufacturers recommend high-gloss and semi-gloss paints for exterior applications.

Regular painting protects wood surfaces. Paint failure has led to rotting wood siding.

View of repaired and repainted wood siding.

CHOOSING PAINT COLORS:

Specific paint colors are not required in the historic district. However, colors that were traditional for the era of the building will be considered appropriate. Guidance for traditional colors and schemes can be found at:

www.oldhousejournal.com/magazine/2001/march_april/exterior_paint/default.shtml

www.oldhousejournal.com/magazine/1522

http://oldhousecolors.com/

Architectural Metals (Railings, fixtures, cornices or windows)

Distinctive metal elements – including fences, gates, columns, balustrades, hardware, lighting fixtures, gutters, downspouts, standing-seam roofs, and flashing – are often found in the Media historic districts. These metal components will have been cast, wrought, pressed, or rolled of various metals. The traditional metals include cast iron, wrought iron, copper, tin, sheet metal, aluminum, steel, and bronze all of which contribute to the architectural character of historic buildings.

FERROUS METALS – Metals that rust – iron and steel – when exposed to air and moisture should be protected with coating products (e.g., paint) specified for that purpose. The manufacturer's specifications should be carefully followed.

Routine maintenance of metal surfaces includes prompt attention to any signs of deterioration of the coatings to deter subsequent corrosion. If the metal surface shows evidence of rust or pitting, it must be thoroughly cleaned before recoating. Because the corrosion continues as long as the metal is exposed to air, immediate painting with a metal primer after cleaning is essential to prevent continued deterioration of the metal.

Not recommended: Original wood posts should not be replaced by decorative metal.

Recommended: Original fence posts have been replaced to support original wrought iron fence.

OTHER (NONFERROUS) METALS, notably copper and bronze develop a naturally occurring corrosive surface – sometimes referred to as "patina" – which over time actually provides natural protection against the elements. It is generally desirable to maintain this patina and the protection that it provides, particularly on any artistic works such as monuments or commemorative plaques, such as those found on the grounds of the Courthouse. There are several methods for the protection and cleaning of patinated metals, but this is usually not a task for nonprofessionals; the work should be performed by an experienced metals conservator.

GALVANIC REACTIONS – If repair of a deteriorated metal element requires replacement of a metal section, be aware that galvanic reactions can occur when two dissimilar metals come in contact. Introducing incompatible metal fasteners or flashing on a metal roof or gutter/downspout system can result in galvanic corrosion, and patching metal roofs with roofing tar accelerates the deterioration of the metal.

6.
GUIDELINES FOR ADDITIONS AND NEW CONSTRUCTION

Over time, most buildings, even historic ones, change: to create more space, to "update" to changing architectural tastes, to incorporate new building technologies and conveniences, or to adapt to new uses that supersede old ones. The latter is especially true in Media where many historic buildings, originally private houses, now have commercial purposes such as offices, apartments or stores. The practice of altering historic structures to accommodate new, economically viable uses is called adaptive re-use.

It is not the intent the Media Historic District Ordinance to prevent such changes, but to ensure that additions are sensitive to both the individual historic property and to the district in which it is situated.

The challenge is to respect the original character of the historic buildings while, at the same time, to provide spaces that meet the technological, environmental, accessibility, and building-code requirements and amenities of a modern world. Fortunately, there are some time-tested guiding principles that can direct owners toward the design of additions that are sensitive to the authenticity of the original architecture. The following recommendations adhere to The Secretary of the Interior's Standard for the Treatment of Historic Properties (see Section 5).

New Construction and Additions to Historic Structures

The first question should be: is an addition really needed? Can additional space be used in another building? Or can re-configuring the existing spaces achieve the same goal (often at a lesser cost as well). A professional design team can advise on making the most efficient use of existing space.

It is best to confer with the HARB during the early stages of developing a proposal for additional space. Although the HARB's principal goal will be to ensure that the character of a historic building will be preserved, it can also provide ideas on how to do this while accommodating the property owner's needs.

If it is determined that an addition is necessary, there are three guiding principles to consider when planning an addition to an historic building (these principles are elaborated upon in Preservation Brief #14: New Exterior Additions to Historic Buildings athttp://www.nps.gov/tps/how-to-preserve/briefs/14-exterior-additions.htm.):

- Preserve significant historic materials, features and form;
- Be compatible; and
- Be differentiated from the historic building.

Three Guiding Principles

1. PRESERVE SIGNIFICANT HISTORIC MATERIALS AND FEATURES – Avoid constructing an addition on a primary or other character-defining elevation in order to ensure the preservation of significant materials and features. Rooftop additions are usually highly visible and incompatible with the mass and scale of the historic building and, therefore, discouraged. Rear additions are often the least visually and physically damaging to the original structure, while side additions – depending on their public visibility – can also be considered. (See Preservation Briefs #17, Architectural Character - Identifying the Visual Aspects of Historic Buildings as an Aid to Preserving Their Character, at http://www.nps.gov/tps/how-to-preserve/briefs/17-architectural-character.htm)

Connecting a new exterior addition always involves some degree of material loss to an external wall of a historic building, but the loss can be minimized by limiting the size of additions, and the size and number of new openings between the addition and the original building. Often an addition can be attached to the historic building in a manner so that much of the original exterior area affected by the "attachment point" is retained as an interior, yet still visible, feature in the addition. A new addition should also be designed to be reversible, that is, removed in the future without leaving significant "scars" on the remaining historic building.

Another particularly successful method to reduce the material loss of original historic building is to link the new addition to the historic building by means of a "hyphen" or a narrow connector. In this way, only the connecting passageway penetrates a historic side wall; the new addition can be visually and functionally related while historic materials remain essentially intact and historic exteriors remain uncovered.

2. BE COMPATIBLE – A new addition ought to be compatible with the size, scale, color, material, and character of the building to which it is attached or its particular neighborhood or district.

Although a new addition will always change the size or actual bulk of the historic building, an addition that bears no relationship to the proportions and massing of the historic building – in other words, one that overpowers the historic form and changes the scale – will compromise the historic character as well. The size, scale, massing, and proportions of the new addition should be compatible with the historic building to ensure that the historic form is not expanded or changed to an unacceptable degree.

A new addition placed on an inconspicuous side or rear elevation is less likely to result in a radical change to the form and character of the historic building.

Simple designs for an addition often work best. Additions that are too fussy or pretentious will distract from, and perhaps overwhelm the character of the original building. The design and placement of the addition should be subservient to the original building.

3. PROTECT THE HISTORICAL SIGNIFICANCE – Make a Visual Distinction Between Old and New. The new addition ought to be designed in a manner that provides some differentiation in material, color, and detailing so that the new work does not appear to be an original part of the historic building and thereby be unclear as to which features are historic and which are new, thus confusing the authenticity of the historic resource itself.

The goal is to create an addition which is, at the same time, clearly different than the original (not a copycat design), but not so different in form and materials so as to visually compete or overwhelm the original building. Both compatibility – the design of the new addition should coexist in harmony with the historic building – and differentiation – the addition should be readily distinguishable from the older architecture – are both important design goals.

For example, the window and door fenestration of the addition could roughly approximate the fenestration – i.e., placement, rhythm, proportion – of the original, but not replicate the exact details. Or, the roofs of new additions can be similar to the old ones in respect to pitch, type (e.g., hipped, flat, gabled) and material but, again, differ in perceptible ways (such as a lower ridge line).

Good example of a compatible addition and adpative reuse of historic building

FOR MORE INFORMATION:

http://www.oldhouseonline.com/additions-101/

http://www.oldhousejournal.com/npsbriefs2/brief14.shtml

Adding Modern Elements to Historic Structures

Sometimes an existing, historic building is not efficient for modern needs. Perhaps handicapped-accessible entries, elevators, or additional mechanical/electrical/heating equipment are required.

But added elements needn't diminish the character of the original architecture. First, consider alternative design options which will have minimal impact on the original architecture. Make necessary alterations at the least visible or architecturally significant areas. Avoid destroying or obscuring historic building materials and details to the extent possible. Example: if the fire code requires new means of egress it is preferable that it be located on a rear elevation, or at an otherwise out-of-public-view location.

ROOFTOPS – Additions to the rooftops, and other highly visible locations, should be kept to a minimum. If necessary, introduce new skylights, vents, solar panels, and rooftop mechanical equipment toward the rear of the building, back from the edges of flat roof areas, and low in profile.

EXTERIOR MECHANICAL EQUIPMENT (Heating, Ventilating and Air-conditioning) – Locate these away from major elevations. In addition, camouflaging grade-level equipment on concrete pads can be achieved with landscaping, berms or unobtrusive screens.

PORCHES – Many of the residential-scaled buildings in Media had open porches at the front, side or rear entrances. These porches are important design features and should be preserved and maintained in their original form if possible, especially if they are part of a contiguous row of porches. Porches should not be enclosed (infilled) without the prior approval of the HARB. Alternative design solutions to enclosure should be considered first. But when enclosure is considered, keep these points in mind:

- Retain original porch features to the extent possible.
- Enclosure walls should be as unobtrusive as possible. One design solution is to place new enclosure walls behind the imaginary vertical plane determined by the row of original porch columns, so that the columns are still prominently visible, and the new enclosure walls are physically recessed, and visually subservient to the principal porch features.
- The design and materials of the new enclosure walls should be simple, and to the extent possible, transparent.

SURFACE-MOUNTED EQUIPMENT AND DEVICES USED FOR TELECOMMUNICATION, SECURITY, UTILITIES, LIGHTING, ETC. – It is recommended that exterior fixtures be attached to historic building surfaces according to these guidelines:

- Locate the fixtures in the least conspicuous sites possible.
- Use fixtures whose design, size, colors, materials are the least obtrusive.
- Use attachment mechanisms that do minimal damage to the historic building materials (e.g., do not insert anchors into the face of bricks, but rather into mortar joints).
- To the extent possible, run electrical and telecommunication wires behind the walls, not in surface-mounted conduit.

LIFE SAFETY AND ACCESSIBILITY ISSUES – A new use or rehabilitation of a historic building can result in requirements to meet current codes and regulations for both life safety and accessibility to people with disabilities. Consult your design professional team to ensure that all codes and regulations are adhered to and, at the same time, are designed in a manner that cause the least loss of the historic character of the building. However, the State of Pennsylvania may allow variances to the design standards of the Americans with Disabilities Act if alternatives solutions can accommodate both the purposes of historic preservation and accessibility for the disabled.

An excellent source of information on this topic is Preservation Brief #32: Making Historic Properties Accessible available at http://www.nps.gov/tps/how-to-preserve/briefs/32-accessibility.htm.

Infill Construction in a Historic Neighborhood

Sometimes there will be a vacant plot in a historic district and the property owner may wish to construct a new structure on that plot. This is known as "infill" construction and the role of the HARB is review the design of the infill in historic districts to assure that it respects the character of the surrounding historic properties. The same guiding principles that apply to additions on historic structures are also relevant for infill design, balancing the twin objectives of being compatible with, yet differentiated from the historic context.

Of principal importance is the siting of the infill structure on its site. The new building's orientation and set-back from the street should conform to the adjacent structures. This is especially true, for example, for a row of historic buildings that have a uniform setback from the street: new infill on a lot within that row that is noticeably set further closer or away from the street will disturb the uniform rhythm of the streetscape.

Other Issues of Compatibility Include:

- Scale (particularly height) and massing
- Exterior materials
- Fenestration (the rhythm of window and door openings)
- Common features, such as porches, entryways, or roof shapes

However the goal is not to design an imitation of the adjacent properties in the historic district. The infill structure should be visually distinct from its historic neighbors. For an elaboration on this point, refer the section above "Make a Visual Distinction Between Old and New".

Olive Street: A good example of new residential infill project.

Edgemont Street: Another example of infill that is compatible with the existing adjacent properties.

7.

WORKING WITH CONTRACTORS, ARCHITECTS AND OTHER BUILDING PROFESSIONALS

The owner of an historic property is often capable of completing many home maintenance projects and even routine repairs. There are instances, however, when property owners should get help from building professionals.

Some of the areas in which professionals can prove invaluable are: the assessment and correction of structural problems (e.g., why is a wall bulging?); the assessment and determination of proper procedures for major repairs (e.g., the replacement of a roof); and the design and construction of additions and alterations.

The Media HARB members include building professionals and welcomes property owners to seek advice from it, especially in the early planning stages of a project, before an application for a Certificate of Appropriateness is made. Individually and collectively, HARB members possess useful knowledge regarding the repair, rehabilitation, restoration or alteration of historic properties. The HARB will work with property owners to find reasonable and appropriate treatments and designs. Contact the Media HARB to request a no-cost consultation.

Architects and engineers can diagnose problems with and proscribe remedies for historic properties. Although their services will, in most cases, require a fee, it will be money well spent because in the long run money is saved by preventing costly mistakes and unnecessary or inappropriate work. In some cases, such as when structural issues are involved, the local building code may require the involvement of architects or engineers (contact the Media Code Enforcement Director at 610.566.5210 or jim_jeffery@mediaborough.com).

Some areas in which an architect or engineer can help are:

- Assessing the overall building's condition.
- Assessing specific problems especially structural issues, deterioration of materials, or electrical or mechanical systems.
- Writing contract documents and specifications (instructions to contractors) for repair/restoration projects.
- Designing appropriate additions or alterations.
- Supervising and programming multi-faceted projects.

It is important to select an architect or other building professional with experience and appreciation for historic buildings. Request that a prospective architect supply references for similar projects, and check these references for the client's satisfaction with the services of the architect.

WHERE DO YOU FIND AN APPROPRIATE ARCHITECT OR ENGINEER?

The HARB may make suggestions, or ask neighbors who have used the services of building professionals for similar projects. Also check on-line sources such as:

www.preservationalliance.com/directories/restoration.php

www.oldhousejournal.com/restoration_directory/rd_home.shtml

www.thebluebook.com/pa

www.aia.org

Remember, however, the choice is ultimately that of the property owner who must check references and have all relevant questions satisfactorily answered by prospective professionals.

Contractors carry out the actual repair, restoration or construction work. Except for routine repair work, contractors should not be asked to provide design services; this is the role of an architect. And, although contractors can help determine the exact scope and nature of the work, these tasks are also best done by an independent architect. Alternatively, a detailed job description produced by a contractor can be reviewed and revised by an architect.

Although a contractor commonly obtains the necessary building permits on behalf of the property owner, ultimately it is the responsibility of the owner to ensure that proper permits are obtained.

Keep these points in mind when choosing a contractor:

- Choose contractors experienced with the special needs of older properties, and an understanding of and appreciation for historic materials.
- Ask for references for several, recent and similar projects. Check these projects for customer satisfaction, timeliness, adhering to a budget, and quality of the work.
- Competitive bids are helpful, but the lowest bid is not always the best (see above).
- Get it in writing!

Have a signed contract that includes at least:

- The full price of the work
- The specific scope of work to be done, including the type and quality of the materials and methods to be used
- A time schedule including start and finish dates
- A schedule of payments. Generally, don't advance a payment before the work begins, except for maybe the contractor's upfront cost to purchase materials needed to start the project. Retain at least ten percent of the total cost until all the work (including clean-up) has been finished to satisfaction

Like architects, qualified contractors can be found from the recommendations of the HARB, friends and neighbors, or on-line sites such as those listed above.

An experienced contactor will have an understanding of and appreciation for historic materials.

8.

GUIDELINES FOR PRESERVATION: PREVENTIVE MAINTENANCE

Neglecting to clean gutters seasonally will eventually lead to more costly maintenance.

Although the Media Historic District Ordinance does not explicitly require the pro-active maintenance of protected historic properties, the HARB provides the information in this section as part of its educational purposes.

"An ounce of prevention is worth a pound of cure" said Ben Franklin, and nowhere is his adage truer as when providing consistent and conscientious ongoing maintenance to older properties.

The upkeep of an older property can seem like a daunting and never-ending task. Many property owners feel trapped in an endless cycle one repair crisis after another. A better, more efficient and less costly approach is to commit to a systematic inspection schedule and routine maintenance program that addresses problems before they become serious and pricey. This is known as preventive maintenance and is the best tool for historic preservation.

Any building, even a new one, is in a constant, but slow state of deterioration. This is not only due to the wear and tear of daily use, but primarily to the negative effects of the natural environment – wind, sun, pollutants, animals and plants and, especially, rain, ground water and other forms of moisture.

At times architectural elements become so deteriorated by lack of maintenance that those features are forever lost, sometimes referred as "demolition by neglect". Better to maintain those historic features now rather than have to re-create them in the future. Uncorrected deterioration can lead to loss of historic features.

Consider one common situation: falling leaves clog a property's gutters and downspouts. Without a regular clean-out, the rainwater conduction system will fail: rainwater backs up in downspouts and overflows gutters. This misdirected rainwater will find it way behind eaves and cornices, under shingles, and even migrate to roof rafters and behind wall exterior surfaces. Often a property owner's first indication of the problem will be damaged plaster on interior walls or peeling paint on soffits. Further investigation may reveal rotted cornices, rafters and siding materials. What was initially a simple maintenance job – cleaning out the gutters regularly – has mushroomed into an expensive and widespread repair.

Prolonging the useful life of original historic building materials – through routine maintenance – versus replacement with newer materials not only preserves the historic appearance, but also makes economic sense. Many original materials – such as slate, copper, stone, old-growth wood – can out-perform and outlast today's replacement materials.

The first step in building maintenance is undertaking and inspecting the building's existing conditions. Remember, if deterioration is discovered, track down its root causes. Also, don't defer: **fix the problems as soon as possible.**

Included in this section are two additional resources:

1. An inspection and maintenance chart.

The chart is a "year at a glance" guide that indicates which inspection and maintenance tasks are recommended each month. Note that some items – fire detection and security systems, for example – should be inspected often, while others – exterior finishes, for example – can be inspected annually.

2. An inspection and maintenance checklist.

The checklist consists of guidelines that correspond to the items in the chart, and tell building maintenance personnel what to look at, how to identify particular problems, and what kind of repairs may be needed.

The items addressed pertain primarily to the exterior of buildings. (Also see Maintaining the Exterior of Historic Buildings at http://www.nps.gov/tps/how-to-preserve/briefs/47-maintaining-exteriors.htm.)

"A Year at a Glance": Exterior Inspection and Maintenance Chart

	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Roof, dormers				●						●		
Water conduction systems	●			●			●			●		
Cornice, eaves				●						●		
Chimeny, fireplace				●						●		
Walls, foundation				●							●	
Pest control				●					●			
Siding materials				●						●		
Doors, windows					●						●	
Exterior finishes					●						●	
Exterior stairs			●			●				●		
Organic growth				●					●	●		
Exterior paving						●						
Vegetations, lawns, gardens					●		●				●	
Fire detection, security system	●	●	●	●	●	●	●	●	●	●	●	●
Fire control, extinguish system		●										

Inspection and Maintenance Checklist for Historic Buildings

Roofs

A sound, tight roof is the first line of defense against the number-one enemy of an older building: water. If the roof is in overall bad shape, plan to repair or replace it soon. Binoculars will be useful in inspecting roofs.

ROOFING MATERIALS

1. What is the roofing material? flat roof (e.g., built-up or elastomeric materials); slate; terra cotta; asphalt shingle; other.

2. Flat roofs: Are there signs of bubbles or cracks in the asphalt or roofing felt? Any signs of standing water? If so, positive drainage must be reinstated.

3. Asphalt shingles: are mineral granules getting thin? Are there loose granules accumulating in the gutters? Are the shingles cupping? These are signs of aging.

4. Are slate, terra cotta or asphalt shingles missing, broken, or warped? If so, check for water damage in the attic, and have a professional assess condition of the roof (individual shingles or entire roof may need to be replaced).

5. Any corroded, loose, split or missing flashing around chimneys, in valleys, or on ridges? Flashing is often the weakest, but most critical part of the roof system, and damage should be corrected quickly.

WATER CONDUCTION SYSTEM

1. Are gutters and downspouts loose, deteriorated, or missing? Are there holes or cracks in the gutters and downspouts? Replace or repair as necessary.

2. Are leaves or debris clogging the gutters, downspouts, or drains? Clean out system semi-annually.

3. Are there low spots in the gutters? Does rainwater drain properly to the downspouts? Re-hanging gutters with proper drainage may be needed.

4. Is there evidence of ice damming during the winter? Mounds of ice at the eaves and extremely long icicles are two signs.

5. Do overhanging tree branches impede proper rainwater conduction? Trim back, if necessary.

6. Are there window wells at foundation-level windows? Are the side walls of the wells structurally sound? Are the sub-surface drains at the bottom of the wells functioning properly? Clean debris from bottom of wells.

ROOF STRUCTURE

1. Does the ridge or any other part of the roof sag? This could be a normal aging condition, or the result of rotted rafters. If so, have a professional inspect.

2. Are the roof rafters (visible in attic) rotted, especially at ends, or cracked? Is there evidence of damp spots in attic? If so, determine source of moisture.

3. Is the attic ventilated with a soffit, gable, or ridge vent? Unvented attics retain moisture, and shorten the life of roofing materials.

4. Do the eaves or cornices have rot, loose pieces, or show signs of badly peeling paint? These are signs of roof leaks that are allowing water into the cornice. Determine source of, and correct water infiltration.

CHIMNEYS AND OTHER ROOF STACKS

1. Is the brick or stone loose, cracked or crumbling? Is mortar missing or loose? If so, have a mason inspect and correct.

2. Does the chimney flue need cleaning? Do old chimneys flues have tile linings? (Old chimneys can be relined without having to rebuild the chimney.)

3. Is the chimney leaning? If so, it may need to be rebuilt from the roof up.

Walls (Exterior and Interior) and Other Structural Checkpoints

STRUCTURE

1. Are the walls plumb? Are there bulges in the walls (sight along walls to determine)? Check for cracks in masonry or collapsing areas or other signs of uneven settlement or structural deterioration.

2. Do doors and windows line up squarely in their frames?

3. Does the exterior siding (clapboards or shingles) undulate?

4. Are porches or steps sagging or pulling away from the building?

5. Are there cracks, crumbled plaster, gaps, or other signs of movement on interior wall surfaces at upper levels. Pay particular attention to joints between side and front and rear walls, between floors and end walls, and between partitions and ceilings.

6. All the above conditions may indicate structural flaws. Consult with a professional to ascertain underlying cause.

WATER AND TERMITE DAMAGE

1. Any signs of termite mud tunnels on exterior walls or in cellars? Any evidence of insect holes or hives? If so, have an exterminator inspect.

2. Any signs of rotted, "punky" wood? Water stains? Split or cracked wood or stucco? Check soundness of suspicious areas by probing pen knife into the wood surface. Problem areas can be wood siding and sills at or near foundations, basement windows and light wells, porches and steps. If water damage is evident, determine sources of moisture.

3. Is vegetation too close to the building, or climbing on walls? This may trap water and promote rot. Remove or trim plants away from exterior walls.

EXTERIOR SIDING MATERIALS (IF ANY)

1. Are there loose, cracked or missing clapboards or wood shingles? Reattach or replace as required.

2. Is sheet metal (e.g., corrugated) siding damaged, corroded, or loose?

3. Are stuccoed surfaces cracked, loose, or crumbling?

Exterior Masonry and Foundations

BRICK, STONE, TERRA COTTA, CONCRETE

1. Are there cracks in masonry walls? Horizontal or hairline cracks in mortar are usually not a problem; but cracks that run vertically through bricks may be more serious. Enlist a professional to determine cause.

2. Any sign of spalling (chips or fragments falling from face of masonry) or rotting (crumbling) on brick, stone, or terra cotta? These are usually signs of a moisture problem or other distress.

3. Any other signs of moisture problems such as moss or fungal growth, stains, or efflorescence (a white, salt-like powder). Determine moisture source, and correct.

4. Are terra cotta elements spalled, have rust stains, cracks, deformation, missing or loose units, exposed metal anchors? If these conditions are found, review condition of terra cotta with professional experienced in methods of evaluating and preserving architectural terra cotta.

FOUNDATIONS

1. Any signs of differential settlement (low spots) along the foundation? If so, have a professional determine cause.

2. Is ground water and downspout water properly diverted away from building with correct grading and splash blocks under downspout leaders? Regrade soil away from building if necessary.

3. Are masonry porch footings or piers sinking or leaning? If so, they may need to be rebuilt or stabilized.

MASONRY JOINTS

1. Is mortar in joints soft and crumbling, loose or missing? If so, determine root cause (e.g., moisture problem, aging), and repoint as necessary. Note: it is essential that repointing match the composition (usually soft, lime mortar for pre-1920s buildings), color, texture and tooled finish of the original.

2. Any open joints between masonry walls and doors, windows, etc? If so, caulk joints. (Note: flexible caulks or sealants – not cements – should be used in joints between two dissimilar materials, e.g., wood and brick.)

Woodwork
(DOORS, WINDOWS, PORCHES, SOFFITS, TRIM, SHUTTERS)

1. Is decorative woodwork firmly attached, and tightly caulked at joints to prevent water penetration? Problem areas include porch balustrades, columns and bases, and around door and window frames. Are stair treads and railings secured? Reattach or repair as necessary.

2. Is there any wood rot, especially at window sills and rails, door thresholds and lower rails? If so, determine cause of moisture.

3. Is window glass intact and secure? Are window panes properly glazed with glazing putty intact, and painted? If not, replace glazing putty, and paint.

4. Is there debris trapped behind storm windows or doors? Are weep holes in storm windows clogged? If so, open weep holes to permit drainage and evaporation.

Finishes
(PAINT AND STAINS)

1. Is paint powdering or chalking to a dull, powdery surface? This is usually sign of aging, and it may be time to repaint.

2. Is paint peeling, curling or blistering? This is usually a sign of a moisture problem, or of incompatible paint layers. Determine cause and correct before repainting.

3. Are there signs of mildew on finish surfaces? This is sign of excessive moisture. Correct cause, and use fungicide before repainting.

4. Are there signs of "alligatoring", checking or heavy, uneven paint surfaces? This is sign of too many old paint layers; paint may have to be stripped before repainting.

Metals
(FLASHING, STANDING-SEAM ROOFS, DECORATIVE CORNICES, WINDOW FRAMES AND SASHES, FIXTURES SUCH AS LIGHTING)

1. Are there cracks, warps or weak areas, loose seams or attachments, rust, or deteriorated finishes?

2. Are there loose, damaged or missing sections? Check substrate underneath for moisture damage, especially at attachment points.

3. Replace damaged or missing sections to match existing sections using appropriate methods for specific metals. Reattach loosened metals to masonry or wood substrate. Remove rust using appropriate methods and materials.

Site Elements
(LANDSCAPE STRUCTURES, E.G., WALKWAYS, PATHS, PATIOS, RETAINING AND OTHER WALLS)

1. Are there cracks, loose elements, loose mortar joints, moist or bulging areas? Repair as necessary. Rebuild any unstable sections of walkways, walls, or patios with particular attention to tripping or other safety hazards.

2. Are drains through walls, in catch basins, or in impervious surface areas cleared of debris?

VEGETATION AND LANDSCAPING

1. Is ivy or other vines growing onto roof cornices, rainwater conduction systems, or window and door openings? Prune back.

2. Are there puddles, or soggy areas in flat areas including lawns, particularly adjacent to building walls? Regrade so water does not pond in low spots or near building walls.

9.
RESOURCES FOR PROPERTY OWNERS

There are many resources – professional and product directories, technical information, organizations - available for owners of historic properties. Here are some web links to some of the more useful ones:

Governmental

Media Borough Historic Architectural Review Board: http://www.mediaborough.com/boardsandcommissions/historic-architectural-review-board-harb

Delaware County Planning Commission (Historic Preservation): http://www.co.delaware.pa.us/planning/historicpreservation/geninfo.html

Delaware County Heritage Commission: http://www.co.delaware.pa.us/planning/historicpreservation/heritagecomm.html

Pennsylvania Bureau for Historic Preservation: http://www.portal.state.pa.us/portal/server.pt/community/historic_preservation/3741

National Park Service Historic Preservation: http://www.nps.gov/history/preservation.htm

Non-Governmental Historic Preservation Organizations

Delaware County Historic and Preservation Network: https://sites.google.com/site/dchpnpa/

Media Historical Society: http://www.mediahistoricalsociety.com/

Preservation Pennsylvania: http://www.preservationpa.org/

National Trust for Historic Preservation: http://www.preservationnation.org/

Preservation Alliance for Greater Philadelphia: http://www.preservationalliance.com/

Delaware County Historical Society: http://www.dchs-pa.org/

Technical

Technical briefs on dozens of topics by the National Park Service: http://www.nps.gov/tps/how-to-preserve/briefs.htm

Searchable database of hundreds of restoration articles by Old-House Journal: http://www.magazine-agent.com-sub.info/Old-House-Journal/Welcome

Preservation Directory: http://www.preservationdirectory.com/HistoricalPreservation/Home.aspx

Traditional Building: http://www.traditional-building.com/

Philadelphia and Regional Restoration Directory: http://www.preservationalliance.com/directories/restoration.php

Financial Incentives and Assistance

Federal tax incentives for preserving historic properties: http://www.nps.gov/tps/tax-incentives.htm

Pennsylvania Historic Tax Credits: http://www.preservationpa.org/page.asp?id=15

Pennsylvania Historic Preservation Keystone Grants: http://www.portal.state.pa.us/portal/server.pt/community/grants/3794/keystone_historic_preservation_construction_grant_program/417951

Low Interest Loans for Media Businesses: http://www.mediaborough.com/business/resources-media-businesses