Elkhart Historic & Cultural
Preservation Commission

ELKHART HISTORIC & CULTURAL PRESERVATION COMMISSION
SPECIAL MEETING
MONDAY, OCTOBER 13, 2025

6:00 P.M. **Elkhart City Annex – 201 S 2nd St**

AGENDA

1) CALL TO ORDER
2) ROLL CALL
3) APPROVAL OF AGENDA
4) NEW BUSINESS
   A. 25-HP-01, MAP STATE-DIVISION BOUNDARIES
   B. 25-HP-02, MODEL PRESERVATION GUIDELINES
   C. 25-HP-03, PROCESS OF ESTABLISHING A CONSERVATION DISTRICT
5) ADJOURNMENT

If you are unable to attend, please contact Wendy Sonora at 574-294-5471 x 3256

Webex Information

https://signin.webex.com/join

Meeting number:
2311 266 7928

Password:
Historic1

HISTORIC & CULTURAL PRESERVATION COMMISSION MEMBERS

Name	Term	Appointed By
Ann Linley, President	January 1, 2025 – December 31, 2028	City Council (Citizen)
J.A. Whitmer, Vice President	September 16, 2025 – December 31, 2027	Mayor
William (Bill) Zimmerman	September 15, 2025 – December 31, 2026	Mayor
Robert (Bobby) Glassburn	September 15, 2025 – December 31, 2028	Mayor
David Henke	January 1, 2025 – December 31, 2025	City Council (Member)
Vacant		Mayor
Vacant		Mayor

City of Elkhart
Municipal Building
229 South Second Street
Elkhart, Indiana 46516
574.294.5471 Ext. 1018


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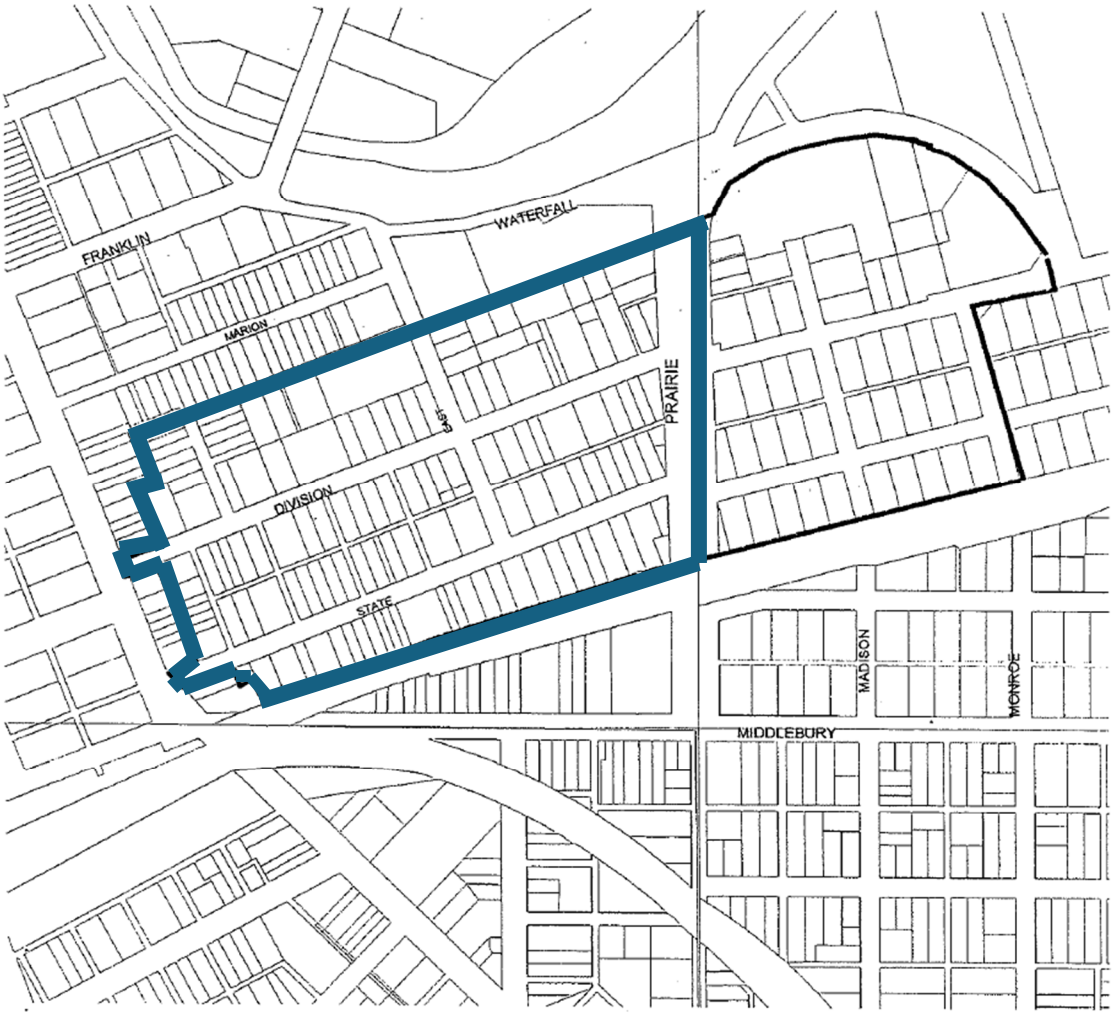

HISTORIC DISTRICT

New

Old

N

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- Solar panels, wind turbines, satellite dishes/internet communication devices
- Walls – masonry, stucco and wood
- Storefronts
- Windows
- Hazardous Materials
- Asbestos
- Lead
- Mold
- PVC and Vinyl
- VOCs
- Energy Efficiency
- Sustainability

Introduction:

What are the standards all about and how are they used?

The Elkhart Historic and Cultural Preservation Commission (Commission) has adopted the following guidelines after consulting with property owners, city officials, and others interested in preserving Elkhart's legacy buildings. Each generation is entrusted with the historical, cultural, architectural, archaeological, social, and economic heritage of Elkhart. The guidelines aim to help in this task by offering a vision for preserving the historic buildings and neighborhood by identifying features that imbue their character.

These guidelines provide direction for property owners proposing exterior repairs, rehabilitation, alterations, and additions to existing buildings and for the design of new structures in the district, moving buildings and in rare instances demolitions. They are written broadly to allow a range of best practice approaches to a variety of projects.

The Commission and the staff use the guidelines when reviewing a proposed project. Each section provides recommendations and includes a list of approaches generally not approved by the Commission.

For a deeper dive, linked sections in the text will take you to additional information on the topic. Here you will find in-depth guidance about the project you are considering, examples useful in developing a project, and information about the historic aspects of your building.

Help is always available if you would like feedback about your project, have questions, or want ideas about how to accomplish a project you envision. Reach out to the Commission: Planning Staff

Eric Trotter
Eric.trotter@coei.org
(574) 322-4479, extension 3151

Kyle Anthony-Petter
Kyle.Anthony-Petter@coei.org
(574) 338-1897, extension 3152

NAVIGATING THE GUIDELINES

Click on any blue colored text to jump to a linked section.

Just want to know what types of projects are recommended – look in the Project Guidelines Section

Want to get more how to or background information look in the For More Information Section.

FAQ's

How are the guidelines applied?

The Commission recognizes some buildings, individually or within a district, carry great architectural or historic importance and have been little altered over time. Others feature more commonplace design or many alterations. Taken together, this variety creates the building's and district's special character.

Consequently, the guidelines provide a range of options and their application. They have been developed based on best practices promoted by the National Park Service, the state historic preservation office, and historic districts Commissions nationwide.

How are buildings within the district rated?

The Commission, as required by state law, has adopted a ratings structure for the district's buildings. These ratings guide decisions about proposed changes to those buildings over time, allowing the greatest flexibility while preserving the characteristics of those buildings and the district overall that make it the special place it is today.

Each property within the district falls into one of five classes. The level of review and latitude for alternative construction materials, additions, etc., is based on the building's significance and level of change over time, called integrity.

The Commission considers integrity when reviewing proposed changes to a building, ranging from those rated most architecturally significant, or "outstanding" rated buildings, to the least significant, or "non-contributing". The Commission generally is more conservative in allowing changes to outstanding-rated buildings, offering more latitude for non-contributing properties.

What is the general philosophical framework for the guidelines?

Projects should retain and repair the parts of their building that give it its look and architectural design rather than replace them wholesale. Original materials are important, conveying the age of the building and its connection to the past. And, often, such materials are of a better quality than modern replacements.

If a part of a building cannot be repaired, then it should be replaced with a matching material of the same type and design, if possible. Sometimes new materials can be substituted but need to imitate the original. The guidelines have pre-approved material lists to help guide proposals.

Parts of historic buildings that are completely missing can be reconstructed or restored using photographs or designs from buildings of a similar age.

New construction of entire buildings or additions to historic buildings should be designed to be compatible to the overall district and/or the building to which it is added.

How do other city codes, zoning or permits relate to the district guidelines?

The guidelines address only the elements of the site and building that are related to its historic design or construction. Other city building codes, zoning, and permits may also need to be followed.

For more information about city building codes, zoning or permits contact the Elkhart Permit Center, (574)296-9331.

How Does the Commission and Approval Process Work?

To apply for a Certificate of Appropriateness (COA) contact:

Michigan City Historic Preservation Commission c/o Planning Staff
(574) 338-1897 ext. 3152
Kyle.Anthony-Petter@coei.org

When do I need a Certificate of Appropriateness (COA) from the Commission?

A COA is required for changes to any part of the building and site that can be seen from a public view. Routine maintenance does require a COA however when you are repairing a part of a building with the same material and look staff can usually approve within 24 hours.

Do I need other building permits or variances?

A COA is needed before the building department will issue a permit. However, A COA approval and these guidelines and relate only to the historic elements of the District, site and building Other city building codes may also need to be followed. Find out information about other city codes contact: (574)296-9331

How much does it cost?

General repair and maintenance – no fee
Staff approvable COA - no fee
Commission approvable COA - no fee
Retroactive COA – no fee

Do I have to have a contractor selected before applying?

No. The best practice is to have a proposed project approved prior to finalizing, signing, and putting a deposit with a contractor. Sometimes the project may change during the review process.

What information is required for a COA Application?

The Commission has created a simple form to assist property owners in outlining their project and for the Commission members and staff to have enough information to complete a review. Find an application form here.

What is the deadline for a COA Application?

Two weeks prior to the regular Commission meeting date; the first Thursday of each month, by end of business day.

What happens after I apply?

If you have not already met with a staff person, you will probably be contacted to answer any questions they may have and possibly schedule a site visit. Staff will prepare a report to the Commission detailing your proposed project, how it does/does not conform to the guidelines for the historic district. Your application will be part of the next Commission meeting agenda, where the Commission will review the staff report with your application and any supporting documents, photos, etc. There will be opportunity for you to speak about your project and answer questions the Commission may have before they vote to approve (or deny). A decision is made at the meeting.

What projects can be approved by staff and what projects must go to the full Commission?

The Commission has approved a wide range of projects that can be approved administratively by the staff. This process was created to assist owners by keeping approval time to a minimum while meeting the legal responsibilities held by the Commission. If a project follows the guidelines for the proposed project, then staff can approve the project and you don't have to wait for a full Commission meeting.

Throughout the guidelines, staff approvable items have been noted. Any projects that do not fall within the staff approval overview must go to the Commission for their review for approval.

Regular maintenance and repair project where the same material and design are being installed as part of the repair require a COA but can usually be approved by staff within one business day of submission.

When/where does the full Commission meet?

The Commission meets the third Thursday of each month at 7:00 p.m. in City of Elkhart Municipal Building, 2nd Floor Council Chambers, 229 South Second Street, Elkhart, Indiana.

Will I be notified and how does the Commission let me know about the meeting and decision?

A copy of the agenda that includes your COA application, as well as time and place of the meeting, will be emailed to you in advance. If you prefer a paper copy can be mailed to you.

Do I have to attend the meeting? Can I send someone else? Can I call in? Who can comment?

It is important that you and/or your representative attend the meeting to answer questions. COA applications can be denied for lack of information/representation. Telephone participation is not allowed. (that may vary by location). The public is also offered an opportunity to comment in support or against your project during the meeting.

Retroactive COA's - I already did the work – but did not get approval now what?
Applications for the approval of work already completed – known as retroactive applications – can be heard by the Commission. The Commission does not consider favorably retroactive applications and an additional fee may be charged. The Commission can require projects completed prior to a COA Approval be removed and the building returned to its pre-project condition. Contact staff as soon as possible to talk about next steps.

Who makes up the Commission that review the projects?
The Commission is a group of appointed community members. Commission members are appointed by the Mayor Commission members. Commission members are all volunteers and have an interest and experience working on historic buildings.

My COA was approved – what happens next? Planning will provide a decision letter to the applicant. After a decision letter has been received, the applicant and/or contractor may submit a building permit with the decision letter to the Inspection department to start the building permit process.

How long is a COA valid? Can it be extended?

1 year. Certain circumstances may qualify for extension.

What if I do not agree with a Commission decision?

Owners may appeal the decision of staff to the Commission. In such a situation the applicant must submit that appeal to be heard by the full Commission. Owners may appeal a full Commission decision by judicial review.

Accessibility

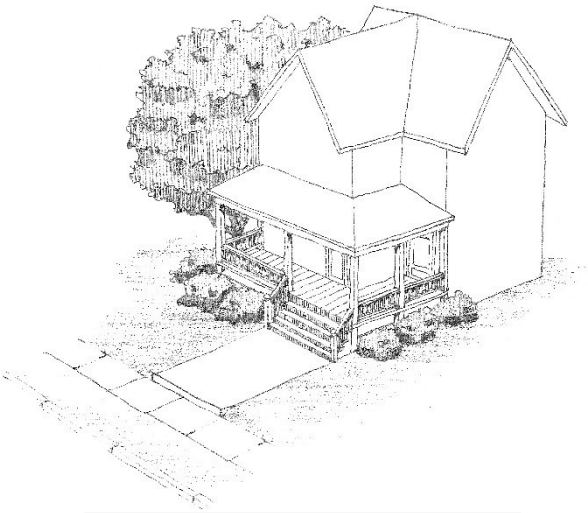
General understanding and approach

Access to historic buildings for everyone regardless of ability is an important project goal for all sites. Owners of historic properties should fully comply with the American with Disabilities Act (ADA) and other accessibility laws, while also preserving the integrity of the character-defining features of their buildings and sites. Special provisions for historic buildings exist in the law that allow some alternatives in meeting the ADA standards.

When an addition is required to allow for accessibility, refer to New Construction and Additions to historic Buildings section.

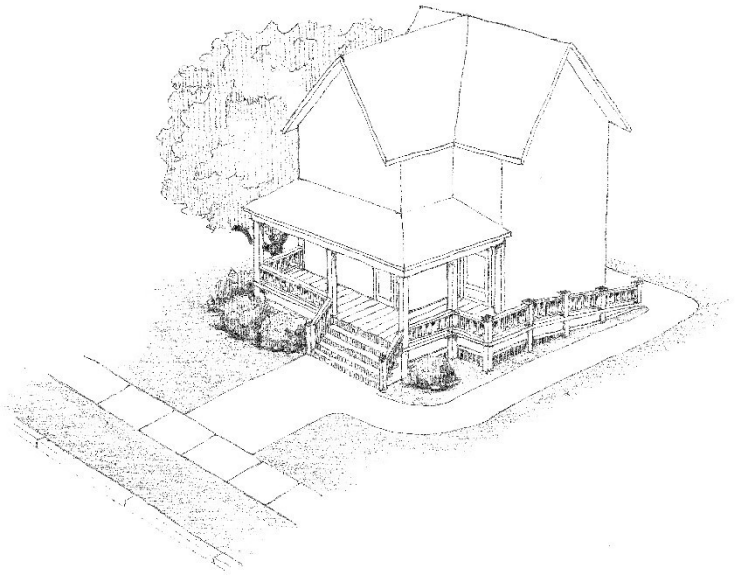
What is your project?

Adding a ramp.



Accessibility projects that involve adding a ramp should:

- Create an accessibility solution that respects character defining features and spaces of a building and site.
- Materials proposed for the ramp should be complimentary to the existing building such as using masonry for buildings that are masonry and wood where the building is wood.



- Ramps should be constructed in a manner that is reversible avoiding removal of historic materials that could not be returned if the ramp is moved or eliminated.
- If access to the front door is not possible due to the building's historic design or site limitations, the accessible entrance should be equally public.
- New accessible entrances should visually unobtrusive and complement the building's design and materials.

Modifying sidewalks and other walkways.

- Projects should consider modification of sidewalks by elevating the grade a few inches, where possible, to eliminate a step to provide an accessible entry.

Staff approval – minor modification of sidewalks to allow step free access to the front door or other accessible entrance and development of an accessible site route.

Adding railings to existing stairs.

Projects that propose to add new railings:

- New handrails should be designed with balusters and handrails that are reflective of the design of the building.
- Materials should be reflective of the building.
- New handrails on existing steps should match existing historic railings on other parts of the building.

The following is not recommended and generally not approved by the Commission:

- Removing a historic porch or stoop to install a ramp.
- Removing all historic railings and balustrades with new.

Chimneys

General approach and understanding

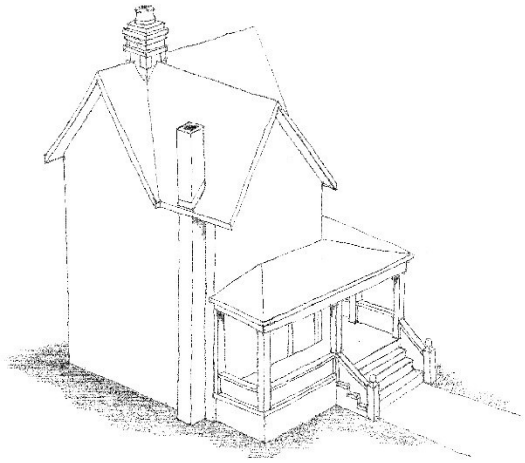
Chimneys can be distinctive features on historic buildings contributing to the overall character of a building. Preserve historic chimneys and associated ornamental features even if no longer functional.

What is your project?

Repair an existing chimney and associated decorative parts. Cap a now non-functional chimney.

- Repair chimneys and their associated decorative parts with the original materials or those that match the original in color, texture and brick face orientation.
- Mortar strength, color and joint placement should match the original.
- Capping a non-functional chimney should be done with a concrete or limestone cap in a color matching the brick.
- Vents and other piping should be terminated before the cap so as not to extend above or enclosed in a new decorative chimney pot.

Staff approval – any repairs with materials to match existing. Capping a non-functional chimney with a concrete cap in complimentary color.



Rebuild an existing chimney.

When a chimney needs complete reconstruction down to the roof:

- All historic materials not deteriorated beyond repair shall be retained.
- Any new materials should match as closely as possible in material, texture, color, and scale original materials.
- Salvage and reuse the historic brick for the outside face and utilize new masonry materials for the interior and flues.
- Corbeling or other decorative designs in the existing chimney should be replicated with the reconstruction.
- Mortar joint color and detailing should match the original.
- Decorative chimney pots or historic flue extensions should be retained and reinstalled.

- The reconstructed chimney can be capped with a concrete or limestone cap in a color complimenting the brick.

Staff approval – rebuilding a chimney and its associated decorative features with salvaged original bricks or new bricks matching the original, re-laid to match original.

Removing a secondary or non-character defining chimney.

- Secondary or chimneys that are not character defining may be removed and not replaced. Any siding behind that chimney must be repaired as part of the project.

Staff approval – removing a chimney that is not part of the architectural look of the building.

The following is not recommended and generally not approved by the Commission:

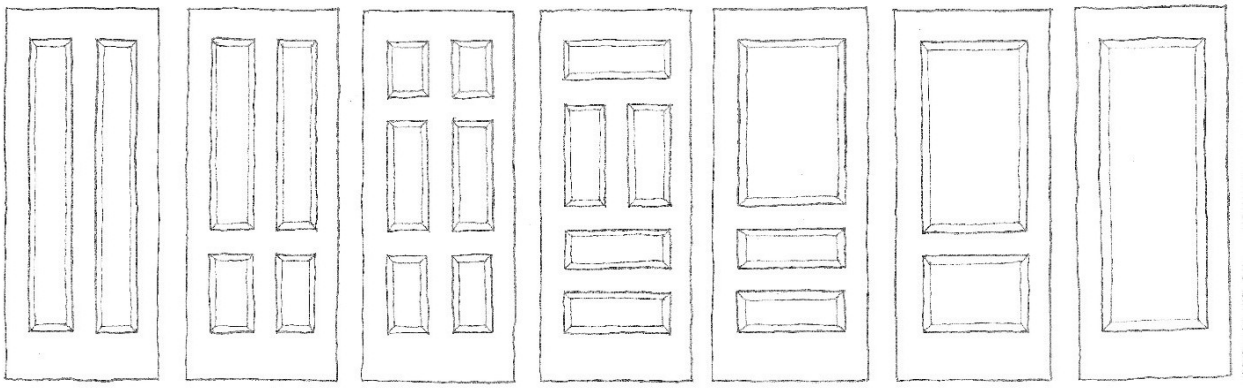
- Removal of a distinctive chimney.
- Covering with a stucco or other similar coating that obscures the brick.
- Adding non-historic elements or oversized fixtures.

DOORS

General understanding and approach

The character-defining features of a historic door, surround, distinct materials, and placement should be preserved. New door(s) should be in character with the historic building with special emphasis on the main facades. historic doors should be repaired. Installing and weather-stripping doors and associated frames is a preferred method to replacement for improving weather efficiency as are storm doors.

Staff can approve a change in swing of an exterior door required due to code or fire regulations. Instead of replacing a character defining door, re-install the door so it swings out to meet code requirements.



What is your project?

Repair a deteriorated front façade or other publicly visible façade entrance door.

- Preserve historic doors by repairing with the same material and matching decorative and functional features.
- historic details that should be preserved through rehabilitation include the door itself, any historic glass panes and related lite pattern and location, and hardware.

Staff approval – repair an existing historic door with matching materials.

Replace a deteriorated or damaged existing historic door.

- historic doors on rear or alley locations can be replaced with alternatives such as metal to provide added security.

- Doors on primary facades beyond repair, as defined as over 50% of material needing replacement, can be replaced with a new door matching the existing door in design, details, panel configuration and installation.
- Replacement doors should match the materials of the original but may be constructed with materials outlined in the following pre-approved list:

Pre-Approved Materials

Project	Material	Manufacturer
Doors	Steel	
	Fiberglass	
Trim	Cedar	
	Thermally Modified Wood	MacBeath Hardwood
	PolyAsh	Boral
	Wood Composite	LP SmartSide, MiraTex
	Fiber Cement	James Hardie
	Cellular PVC	Azek, Kleer, Fypon, Palight

Staff approval – replace a door more than 50% deteriorated matching historic door's materials, design, details, panel configuration and installation including one using pre-approved alternative materials.

Add a new door or entrance or restore an altered door and entrance.

- New entrances should be added to rear or alley facades.
- New modern entrances may be developed when historic entrances have been removed and no evidence of the original entrance exists.
- New entrances should be developed with proportions and details that are reflective of the period of the building. Starkly modern entrances should be avoided.
- New entrances proposed for the main façade should be related to the façade's overall design in proportion, materials, and window to wall ratio.
- historic main entrances and doors should be preserved.
- When proposing the reconstruction of an altered entrance, the design should be based on historic images of the building and the missing element.
- If images of the existing building are unavailable, historic images of similar age buildings from the district or the timeframe from the building's construction should be utilized to guide the design.

Staff approval – creating a new rear or alley entrance in compliance with the guidelines.

Replace or add a storm door.

- historic storm doors should be repaired with matching materials.
- If more than 50% is beyond repair, a new door should be compatible with the design and age of the building on which it is installed.
- The use of traditional wood storm doors with details compatible with the age and design of the building it is installed are preferred.
- Metal storm doors with full window/screen inserts are acceptable.
- Storm and screen door frames and cross members shall match those of the primary door behind so that there is no obstruction of door behind.
- Doors and frames should be finished to match the door behind.

Staff approval – storm doors that follow the guidelines.

The following is not recommended and generally not approved by the Commission:

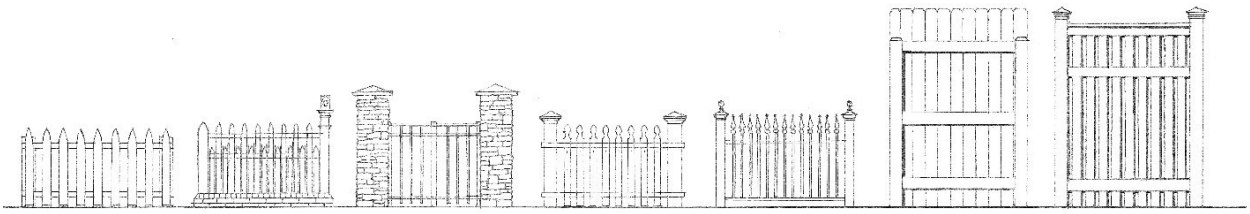
- Storm doors with silvery metallic finish.
- Security screens and bars.
- Replacement of ornate or intricate doors and hardware.
- Vinyl doors.
- Replacing a door with a shorter door or narrowing an existing historic door.
- Replacing a historically double leaf door with a single door.

FENCING AND RETAINING WALLS

General understanding and approach

Fences in front yards should be no taller than three feet and comprised of an open design as approved by the Commission (see examples below). Traditional materials such as wood or wrought iron are encouraged. Fences in rear yards beyond the back wall of a building should be no taller than six feet and have the finished face installed towards the neighboring property. Rear yard fences should be constructed of wood in approved designs (see examples below).

historic walls are considered character defining features and help to establish, a sense of visual continuity, and should be preserved. Where new retaining walls are installed, they should complement the traditional retaining walls in the District or building to which they are associated.



What is your project? Repair an existing fence.

- Existing historic fences should be repaired using the same materials and designs as the existing fence.
- Existing chain link fences requiring less than 20% repair can be repaired to with matching materials and design.
- Chain link fencing requiring more than 20% replacement should be replaced with a new fence of a design approved by the Commission. See chart and drawings below.

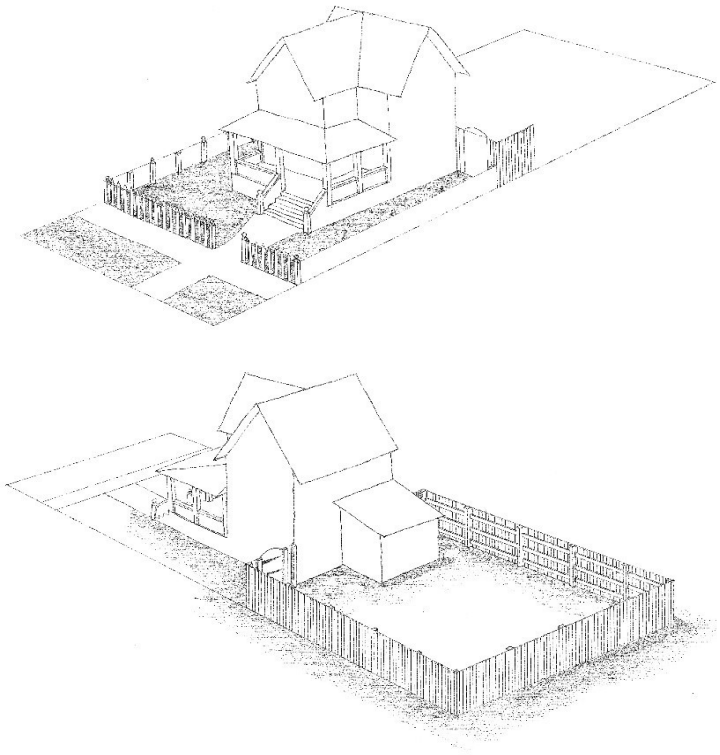
Staff approval– repair of an existing fence with the same materials and design as existing.

Replace an existing fence.

- Existing historic fences should be repaired rather than replaced.
- If an existing historic fence is beyond repair, defined as more than 50% needing replacement, then a new fence should either match the historic fence in design, material and installation or utilize one of the approved designs and materials below.

Staff approval – replacement of an existing fence with one that matches the original or with a pre-approved fence design and materials.

Install a new fence where no fence exists.



- New front yard fences should only be installed if front yard fences are a prevalent part of the district's other property's front yards.
- New front yard fences should be no more than 36 inches tall and be at least 50% open visually.
- The front yard fence should extend down the side yard to at least the front wall of the house.
- Rear and side yard fences should start no further forward on the site than the front wall of the house, no taller than six-foot- and may be solid in construction.
- New rear and side yard fences should be constructed of wood

Staff approval – fences that are from the pre-approved design and material following the guideline.

Install a landscaping screen.

- Planting windbreaks or hedgerows to function as a privacy "fences" alone or in front of a true fence may be considered, where adequate historic documentation exists, or where screening of less appropriate site amenities may be required.

Staff approval – installation of screening plantings from the pre-approved list.

Repair an existing retaining or garden wall.

- historic retaining walls should be repaired with the same materials from which they are constructed including the replication of details that give it its character.
- Repointing should be done when necessary using a mortar mix that is like that used historically and applied in a joint design that matches the original.

Staff approval – repair of existing with the same materials and design.

Install a new retaining or garden wall.

- Preserve distinctive grading features of a site avoiding grade changes greater than 12”.
- Any grade changes need to take into consideration impact to adjacent sites and the overall character of the district.
- New walls should be compatible with the character of the property and district.
- New walls should be constructed out of materials that match the house or building.
- Walls should be no taller than four feet and include a masonry cap.
- A retaining wall that defines the sidewalk edge or is used in the front yard, should be no taller than thirty-six inches.

The following is not recommended and generally not approved by the Commission:

- Unfinished concrete, concrete block or interlocking brick retaining or garden walls
- Chain-link, barbed wire, or vinyl fencing
- Horizontal board fencing

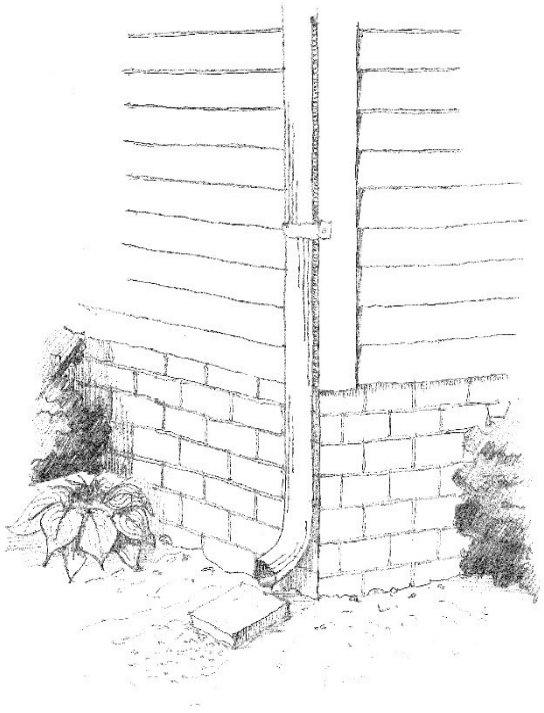
FOUNDATIONS

General understanding and approach

Foundations support a building with materials that contribute to the architectural look. The original foundation materials should be maintained to keep out water and repaired with methods and materials like the original.

What is your project?

Repair a foundation or masonry porch pier.



- Foundations should be repaired by reusing the original materials or with new materials to match the original damaged pieces.
- Re-pointing should be done with a mortar that is of similar strength and patterning as the original.
- Repair of mortar joints should replicate the original rake (look), depth and color as the original.
- Correction of leaning masonry porch piers that are otherwise sound should be considered for mud-jacking or other similar correction measures rather than demolition and reconstruction.

Staff approval – repair with salvaged materials from the existing foundation or with new materials and mortar to match in color, texture, and detailing as well as muck jacking of porch piers.

Remove an original element such as a coal chute, basement windows or exterior entrances.

- Original basement windows should be retained.
- Security measures should be installed on the interior of the basement opening leaving the original windows in place.
- Glass block infill can be considered when the existing basement windows are beyond repair or security is a paramount concern. Glass block infill should be set back to the same depth as the original and be screened with landscaping.

Staff approval – installing security measures on the inside of the basement leaving the original elements installed. Glass block infill if there is landscape screening installed.

Replace an entirely failed foundation.

- Replacement of a failed foundation should be done in a manner that preserves the look of the original building proportions including height from grade to sill
- The new foundation should match the original in materials, texture, color, and mortar joint details.
- The material of the foundation below grade should be of quality materials to ensure the stability of the house but do not need to match the original.
- The original grade should be maintained while facilitating adequate drainage away from the structure.

Staff approval – replacement of a foundation matching the original in all aspects outlined in the guidelines.

Commission approval does not include review of the structural soundness of the proposed new egress window or any other code requirements that may be required. The structural advisability of a proposed new egress window or door should be performed by a qualified engineer or architect.

Add a new egress window or basement entrance.

- New egress windows or basement entrances should be installed on rear of the building.
- Egress windows should be screened with landscaping to the extent allowable by code.

Staff approval – egress windows or entrance on the rear or non-public side.

The following is not recommended and generally not approved by the Commission:

- Egress windows on the front of a house.
- Covering historic foundation materials with a stucco or other type of similar coating.
- Painting brick foundations.
- Covering the traditionally exposed foundation with new earth and landscaping.
- Glass block to fill windows or other foundation elements on public street view facades.

PAINT

General approach and understanding

Paint is one of the most common ways to protect the exterior surfaces of historic buildings, as well as accentuate the architectural details and appearance of the building. Although paint colors are temporary and generally reversible, they are also quite visible and should be selected wisely.

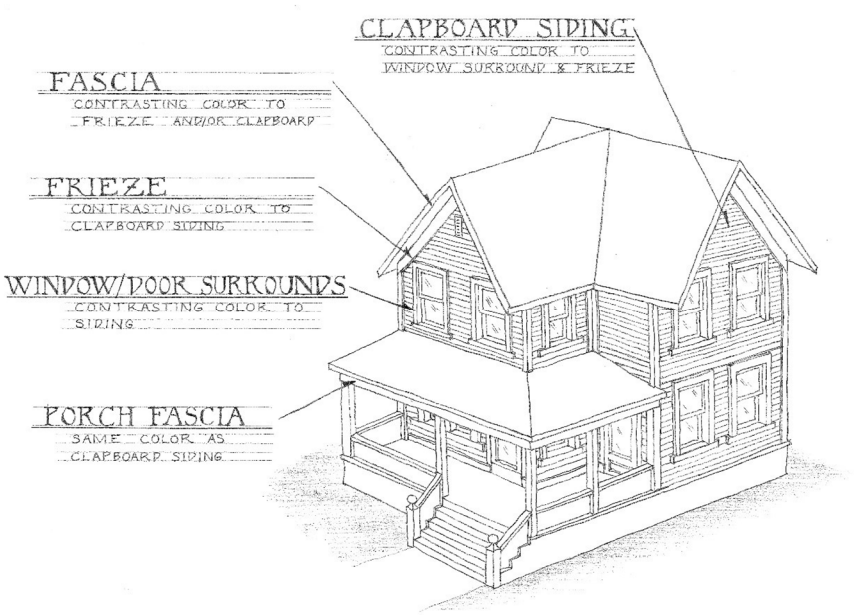
Colors should be suited to the age of the building, its style, and the District. Generally, a paint color scheme is broken down into the various parts of the building, including siding, trim, decorative details, and window sashes.

Read more about best practices for a lasting paint job and historic paint schemes

Read more about lead safe work practices and the EPA's RRP rule

What is your project?

Repaint a building



- Exterior paint schemes should reflect the period of the building.
- Paint schemes should include different color for the walls, trim and windows – with windows being darkest in color such as black, dark green or deep red.

Staff approval – Painting with approved colors.

The following is not recommended and generally not approved by the Commission:

- Painting brick walls that have not previously been painted
- Spray on vinyl or other "permanent" coatings
- Single-color for walls, trim, and windows
- Exceptionally bright or high-contrast paint schemes
- High gloss paint finish
- Murals on residential designed buildings

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PORCHES

General understanding and approach

Porches are often the most visible feature of a historic house and play an important role in the appearance of the house and surrounding neighborhood. Historic porches should be retained, maintained, and, if needed, repaired.

For the purpose of these guidelines, "porch" refers to the all the elements common to a porch, including porch roof, columns and posts, balustrades, steps, and decorative details.

What is your project?

Repair an existing porch and associated decorative details.

- Repair damaged portions of the porch and associated details in place.
- Replace only missing or deteriorated parts to match the original in design, materials, scale, and placement.

Staff approval – any repairs with materials and design to match existing.

Rebuild an existing porch.

When a porch is so deteriorated that it cannot be repaired, defined as over 50% needing replacement:

- Use remaining elements of porch as a guide to rebuild.
- If new alternate materials from the list of approved materials are proposed, then the new components must match dimensions, profiles, detailing and finish of the historic component.

Staff approval – Porch rebuilt using approved materials to exactly match existing historic porch.

Build a new porch where one no longer exists.

- Determine design based on historic photographs or by looking at similar houses in the neighborhood.
- Consider size, shape, scale, materials, massing, and color.
- Use materials that were available when the original porch was constructed.
- If new alternate materials from the list of approved materials are proposed, then the new components must match dimensions, profiles, detailing and finish of the historic component.

- If a design cannot be duplicated, create a simplified design compatible with the building, using stock lumber and moldings.

Staff approval – Porch rebuilt using approved materials to exactly match a documented historic porch.

Enclose an existing porch.

- Porches on the front of the house should not be enclosed.
- Screening with narrow wood-framed screening or clear glass may be acceptable.
- Screens or glass should be set back from porch columns and balustrade so the porch still appears as a porch, not as a closed room.

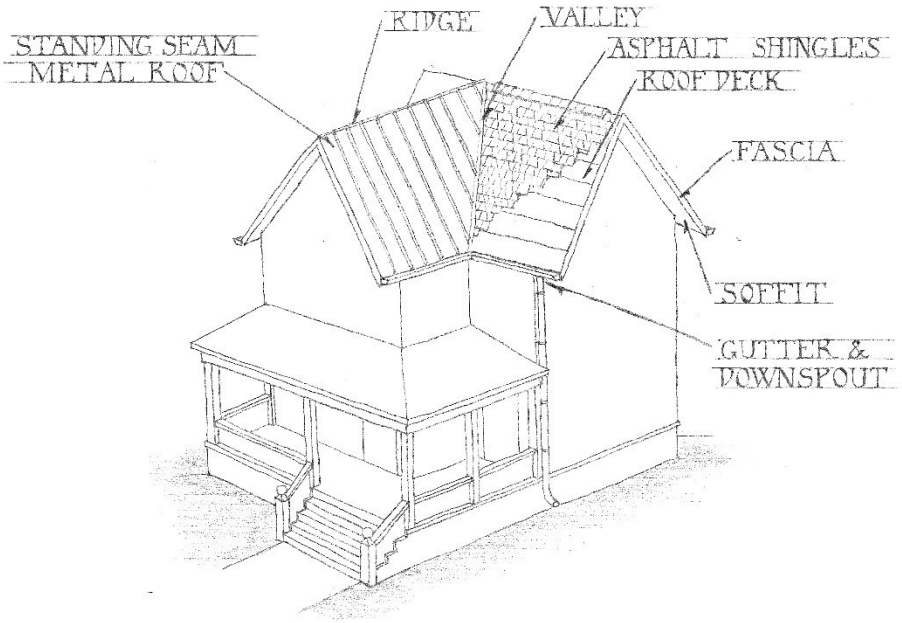
Install lighting or ceiling fans.

- Decorative lights should be a design that suits the building, limited in number, and located near the front door.
- General lighting and security cameras should be sized and located to be as unnoticeable as possible.
- Ceiling fan style should complement the building and should not have lights attached.

The following is not recommended and generally not approved by the Commission:

- Replacing balusters with contemporary deck railing panels.
- Replacing original porch details with materials from an earlier or later period of construction.
- Installation of a modern, pressure-treated deck on the front of the house.
- Pergolas over the front entrance.
- Replacing steps with a different material, such as replacing wood steps with brick.
- Vinyl lattice used as porch apron to screen area underneath porch.

ROOF, GUTTERS/DOWNSPOUTS, SOFFITS



General understanding and approach

Roof shape, material and details are character defining elements of the architectural look of a building. A roof's slope, materials, and decorative elements should be preserved through repair and maintenance and not removed during a re-roofing project.

What is your project?

Reroof an asphalt roof.

- Replace an asphalt roof with a new asphalt roof even if it previously replaced a slate or tile roof.
- A tile, slate or metal roof that has been lost to a later asphalt roof can be restored with an appropriate new material to match the original installation. Flashing for asphalt roofs should be galvanized metal or copper.
- Repair of other elements on the roof such as dormers, cupolas, and brackets should be done at the same time as the re-roofing to avoid damage to the new roof later and ensure water tightness of the flashings. Repair to those elements should follow guidelines for Walls.

Staff approval – Replacement of an asphalt roof in-kind or to match documented original.

Repair a tile, slate, metal, or asbestos roof.

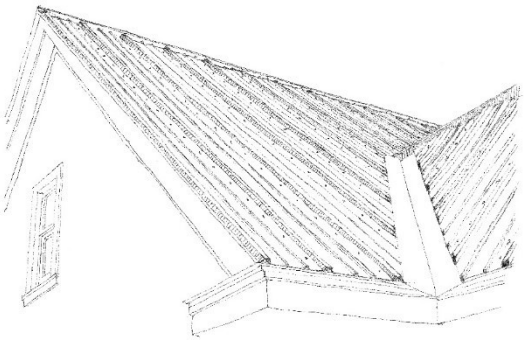
- Original tile, slate, metal, or asbestos roofs should be repaired rather than replaced. Select materials to repair the roof covering that match the original in color, shape, thickness and reveal.

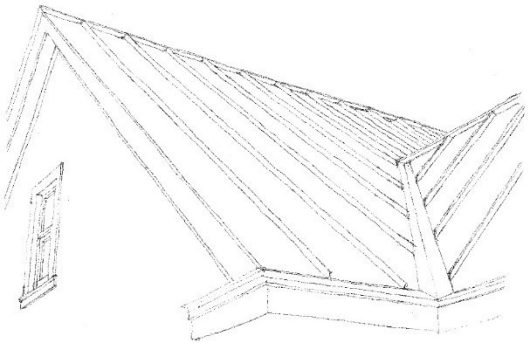
- Flashings shall be selected to be compatible with the final roof materials selected.
- Repair of other elements on the roof such as dormers, cupolas, and brackets should be done at the same time as the re-roofing to avoid damage to the new roof later and ensure water tightness of the flashings. Repair to those elements should follow guidelines for Walls.
- Copper and lead roofs may be left unpainted, terne-metal roofs should be painted traditional roof colors selected from the pre-approved palette by the Commission.
- The proportion of the seams and trim on replacement metal roofing shall match the original.

Staff approval – Repair roof with material and methods matching existing.

Remove a tile, slate, metal or asbestos roof and re-roof with a new material.

- Effort shall be made to retain historic slate, tile, standing seam metal or asbestos roofs.
- Before wholesale replacement is considered, repair of the associated flashings, valley and other weatherproofing should be explored as the source of leaking.





- Original slate, tile, metal, or asbestos roofs may be replaced if more than 50% of the original material is deteriorated beyond repair. The Commission may consider alternate materials that replicate the look of the original so long as those alternate materials have a demonstrated 20 year demonstrated satisfactory performance.
- Alternate slate materials should match tile size, thickness and gradation.
- Use the form and detailing of severely deteriorated roof features, such as cupolas and dormers, or chimneys, to create appropriate replicas.
- Roofs proposed to be covered with metal should be done with a traditional standing seam design and installation.

The Commission has approved metal roofing of a color which reasonably looks like galvanized metal. Other colors need proof of past use on the building and Commission approval.

Add a dormer or bump-up addition.

New dormers or bump up additions should:

- Be added to side or rear on roof areas not visible from the primary public street.
- Be less than 75% of the roof area on which it is added.
- Finished with wall materials matching other dormers on the house.
- Be detailed with eaves, soffits, and moldings to match either other dormers on the house or the main roof itself.
- Windows should match those of other dormers or be of scale within the overall size of the dormer with divisions like those found on the rest of the house.

Repair damaged gutters and downspouts.

- Repair damaged gutters and downspouts with new materials that match the original material and design as the damaged section.
- Retention of half round gutters are preferred over replacement with a different type.
- In limited cases “ogee” or “K style” profile aluminium gutters may be considered to replace half round gutters damaged beyond repair.
- Galvanized steel gutters and downspouts shall be painted to match the color of wall or soffit behind them to prevent rust and staining of adjacent materials and blend with the building.
- Copper gutters and downspouts should be repaired and not replaced. Copper downspouts can be replaced with coated aluminium to deter theft. The color of the downspout should be coated or integral to match a future patina color.

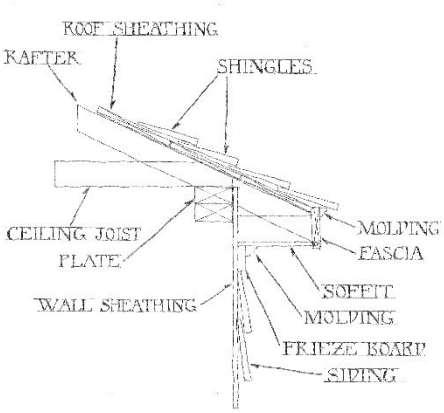
Staff approval – Replace existing with the same materials and design.

Install a skylight, satellite dish, antenna, or other roof mounted item.

- Install new roof-top mechanical or service equipment (including satellite dishes and antennas) in such a way that historic materials are not damaged.
- Skylights, including solar tube type lights, shall be installed on rear or roof planes not visible from the primary public street.

Staff approval – roof mounted equipment and skylights in compliance with guidelines.

Repair or wrap an eave or soffit with new materials.



- Original eaves, soffit, brackets, and gables should remain visible and not covered or enclosed when repairing or replacing the roof.
- Eaves or soffits that are deteriorated less than 50% should be repaired with the same material, detailing and finish as the original.
- Eaves or soffits requiring more than 50% replacement as part of a repair can use alternate materials found in the pre-approved list by the Commission or be considered for wrapping as a last resort.

Staff approval – Repair of building parts with the same materials and design as existing or with materials pre-approved by the Commission.

Install a green roof.

- Installation of a green roof should only be undertaken if its installation does not require removal of historic roof materials such as slate, tile or metal and be done if modification of the roof's look and design is not required.

The following is not recommended and generally not approved by the Commission:

- Removing original architectural features.
- Adding out of scale new elements with no historic evidence.
- Removing a slate, tile, or asbestos roof without exhausting repair alternatives.
- Use of vinyl or other plastic roof coverings.
- Installing or attaching anything other than the roofing materials and associated elements to a surface of a roof visible from a primary public street.
- Non standing seam metal roofing – exposed fastener systems.

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Site projects – garages, landscaping, parking areas, decks, driveways, sidewalks and paths

General understandings and approach

Landscaping is an evolving part of a historic district with the focus for preservation on mature and long-lived landscaping that give the district its primary character.

Remove mature trees and plantings only if diseased, dead or poses a risk to people or buildings. New landscaping and construction projects should be planned and executed to protect mature landscaping during construction.

The area surrounding a historic building and contained within an individual parcel of land is considered the building site. The site, including all associated historic features, contributes to the overall integrity of the property, and should be preserved. The relationship between the building and contributing features within the site's boundaries should be considered when designing improvements. Traditional plans that include front yard grass with defined planting beds is encouraged.

Rear and alley access drives, and parking areas are recommended. The insertion of new curb cuts and parking – both garages and driveways – should be kept to a minimum. Preservation and replication of any of the historic materials used in sidewalks, walkways, steps, and curbs is preferred. Substitute materials may be considered when other alternatives are not feasible.

If you want to construct a new garage, then refer to the guidelines on new construction.

Read more about traditional plants, history of landscaping (including driveways and sidewalks) in the district and recommendations for plantings, and landscape design and maintenance.

See also section on fences.

What is your project?

Plant annuals or add mulch to existing beds.

No review is required for the planting of annuals or short-lived landscaping such as bulk mulch.

Remove a tree(s).

> Mature or long-lived trees like oak, maple, pine, walnut, ash, should be retained and removed only when diseased, dead, or causing potential harm to people or buildings.

Staff approval – removal of a hazardous mature tree, as deemed by an arborist or qualified forestry professional or any trees listed on the approved removal list.

Install a new landscaping plan.

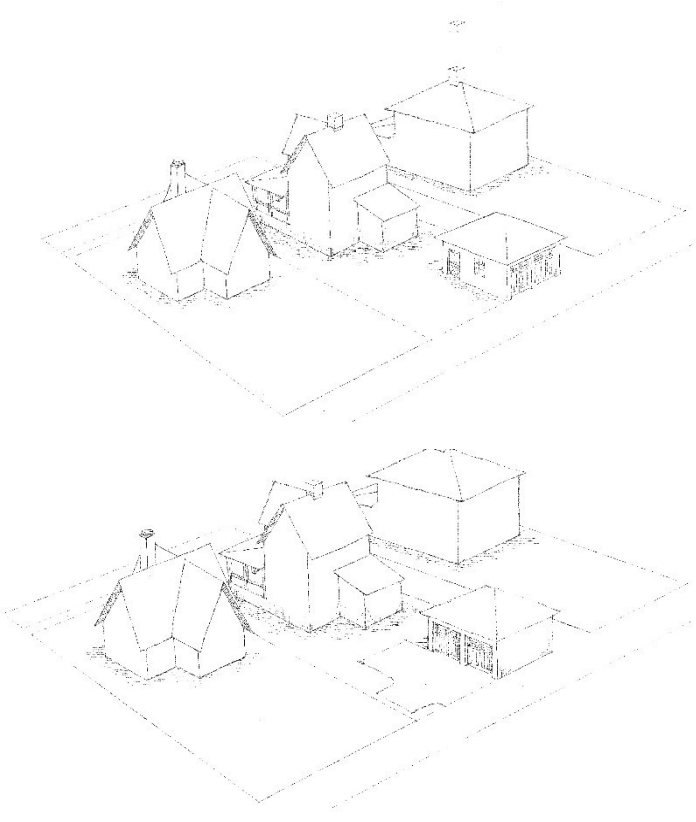
- When developing a new landscaping plan for a site, mature trees and perennials should be preserved and incorporated into the new plan.

Staff approval – plans that preserve the mature landscaping while adding in a new cohesive plan that compliments the historic building and site.

Install outdoor lighting.

- New exterior lighting should be installed to accent architectural features, primary facades or provide necessary security.
- Light heads should be screened with low landscaping plantings to hide the fixtures.
- Side and top shields should be included to limit the light from spilling onto adjacent properties.

Staff approval – new exterior lighting.



Modify a garage for modern vehicle access.

- Modifying alley facing auto garage door openings to accommodate newer cars is encouraged over demolition and new construction acceptable within the district.
- Enlarging alley facing auto garage doors for a standard modern width or relocating garage doors to a non-street facing orientation should be allowed.
- Removal of historic garage doors is allowed on non-street facing garage entrances.
- New overhead doors should reflect the period of design of the house or era of garage.
- Wood doors or wood clad aluminum doors are preferred. Aluminum doors without wood cladding may be installed if resembling the approved designs by the Commission.

Staff approval – modification of a garage door or relocation of a garage door to non-street facing walls to accommodate use by modern vehicles. Installation of a new overhead wood or aluminum door in designs as pre-approved by the Commission.

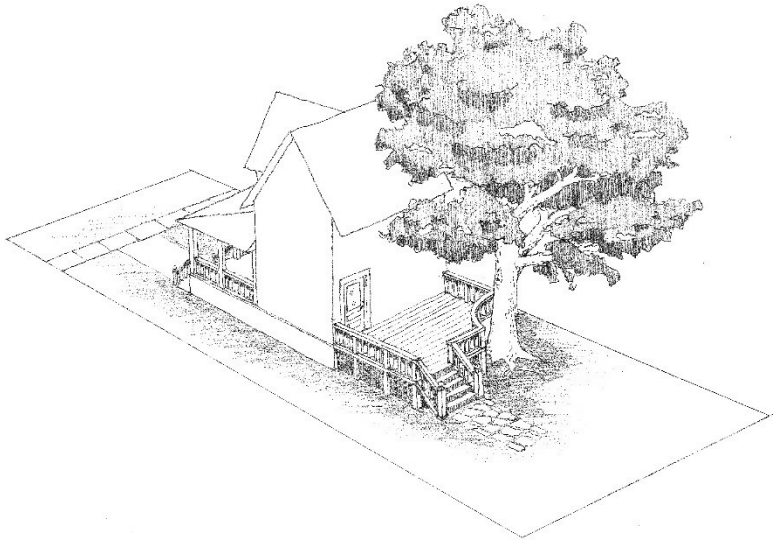
Repair a gazebo or other secondary structure on the site.

- Historic secondary structures should be retained and preserved including their placement on the site in relation to the main house.
- Repair and reconstruction of secondary buildings should follow guidance for the specific aspect of the building as would be followed for the main structure.

Staff approval – Repair to match existing per the guidelines as outlined in respective section.

Construct a new deck.

- Decks should be installed only on the rear of the house.
- Decks and associated parts like stairs, balusters and benches should be constructed of wood or composite materials and painted to blend with the house.



Staff approval – wood/composite decks at the rear of the house.

Repair an existing parking area, driveway, sidewalk, or path.

- Existing driveways, sidewalks or paths should be repaired in the same materials, width and detailing as exists at the time of repair. If physical or photographic evidence suggest an alternate finish, size, or placement then the recreating the historic construction should be considered.

Staff approval – replacement in the same materials, size and configuration as existing.

Install a new parking area, driveway, sidewalk, or path.

- New parking areas should be confined to the rear yard of the building.
- Where driveways from the front exist throughout the district, a new driveway from the front should be designed in a similar manner as exists throughout the district.
- Where historically front driveways were not constructed in the district, new driveways should be limited to rear access.
- The use of permeable paving materials is encouraged for driveways.
- New sidewalks should be designed and installed like those found throughout the district.
- Secondary paths on the site should be installed within side and rear yards.

Staff approval – New rear parking areas, sidewalks, and driveways.

Curbs, steps, and street gutters.

- Maintain historic curbs, steps, and street gutters.
- When replacement is necessary, use materials that are the same as the original materials.
- Where limestone exists but its replacement is infeasible, concrete colored and finished to resemble the original is an acceptable alternative.

Staff approval – Replacement with similar materials.

Install a geothermal system.

- Installation of geothermal system should be installed with least amount of disruption to the site as possible.
- Landscaping should be completed following the installation to repair disrupted areas and screen any visible equipment.
- Mechanical equipment should be designed, sized and located to minimize their effect on the character of a historic building and placed in locations that avoid obscuring the building or significant site features.

Staff approval – proposals for geothermal installation that are not visible to the public and repair disrupted areas.

The following is not recommended and generally not approved by the Commission:

- Plantings and trellises that attach to the building such as climbing vines.
- Stone, lava rock or other similar hardscape for planting beds.
- “Broom finish” concrete
- Asphalt
- Parking areas in the front and side yards unless found throughout the district historically
- Semi-circular drives where none previously existed or are found in the district.
- Loose stone driveways or sidewalks
- Decks in front or side yards

SOLAR PANELS, WIND TURBINES, SATELITTE DISHES/INTERNET COMMUNICATION

General understanding and approach

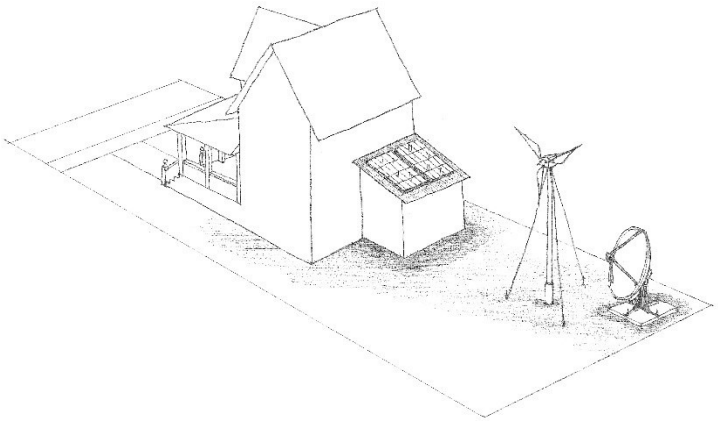
Accommodating alternative energy projects within the district is an important goal. Their integration into a historic structure or site should maintain the building and districts look and feel considering historic integrity of the site and building. Mounting and installation should be done in a manner that is reversible without harm to the historic building.

See also section on Sites.

What is your project?

Install solar panels, wind turbines or satellite dish (equipment).

- Equipment should be installed in a manner that is reversible without harm to historic materials and in locations shielded from public view.
- Equipment should be placed on the ground in the rear of the property and designed, sized, and located to in locations that avoid obscuring the building or significant site features.



  - Installation of equipment on a roof is a last resort if no suitable ground locations are possible.
  - Equipment proposed for a roof installation shall be mounted on roofs not facing or visible from a public street and installed as flush to the roof surface as possible.
  - Equipment shall not extend above the ridge line.
  - Equipment shall be placed on secondary roofs or rear wings and mounted to the rear of the roof and not towards edge.
- Exposed hardware, frames and piping should have a matte finish, and be consistent with the color scheme of the primary structure.

Staff approval – installation of equipment on accessory buildings, or secondary roofs or rear wings not visible to the public from a public street.

WALLS

General understanding and approach

The exterior walls of a building are a primary feature that gives the building its architectural look. Walls are clad in a variety of materials fashioned in a wide variety of designs, patterns, installation methods. Together the materials protect the underlying structure and produce the exterior architectural look of the building. The original materials that cover the wall should be repaired to match the original materials in type, design, installation and pattern. If matching materials cannot be secured then modern replacements can be considered if they match the look, design, and pattern of the original.

What is your project?

Repair the existing wall cladding, siding and/or trim.

Photographically document architectural features that are slated for reconstruction prior to the removal of any historic materials.

Wood:

- Repair wood siding with the same material as the original.
- If new composite siding from the list of approved siding materials is proposed, then the new siding must be installed to match original orientation, edge profile, reveal and finish of the original.

Masonry – brick, terra cotta, stucco:

- Salvage and reuse original masonry for repair.
- Repairs should be done with materials and designs that match the original look. Brick and Terra Cotta units should match the size, color, shape and finish of the original.
- Mortar joints should utilize a mortar similar in strength, color and joint rake, depth, and decorative finishes.
- Fiberglass reproductions of missing terra cotta pieces are acceptable provided a mock up sample is presented for approval prior to full scale use in the project.
- Stucco walls should match the original in texture and tooling. Modern stucco materials are allowable for recoating and repair so long as the result is not a diminished reveal for the windows, trim, doors, or other wall details.

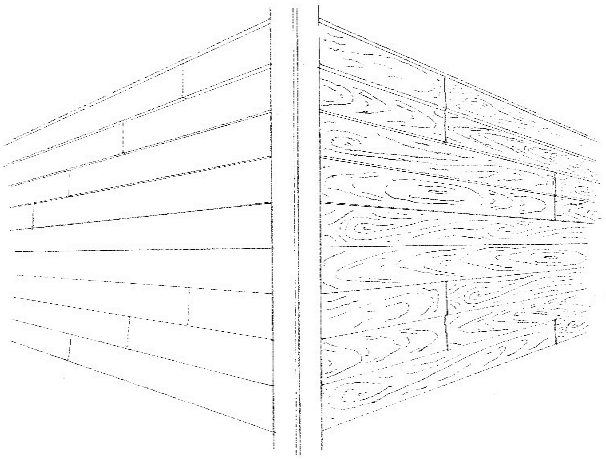
Staff review – repair of any wall with the same materials as existed or with approved alternative materials.

Replace existing siding with new siding.

If the historic siding is deteriorated beyond repair, defined as over 50% needing replacement, new siding should match the original in materials, form, size, placement, and design.

Wood:

- Replacement wood siding should match the existing profile, exposure, and thickness. New wood siding is recommended. The following alternate materials have been approved by the Commission: Boral, LP SmartSide, James Hardie HardiePlank.

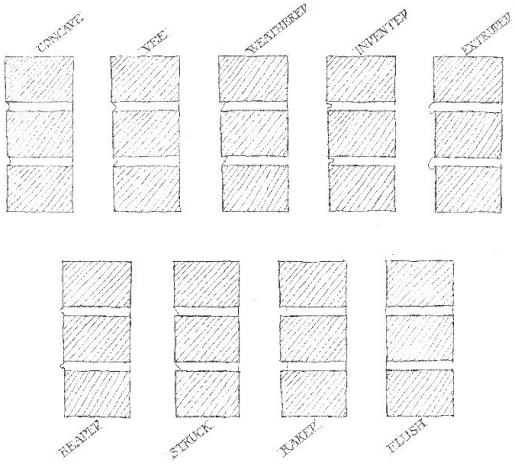


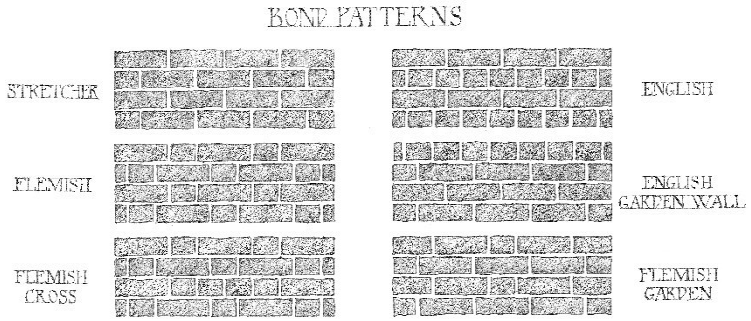
- Any alternate siding must match the dimensions of the original siding including a smooth face, lap exposure and orientation and be installed with the least damage to the original.

- Vinyl or aluminum siding should be avoided and allowed only as a last option when other approaches or solutions have proven to be infeasible.
- If vinyl or aluminium is considered, window heads or other decorative features of the exterior should not be covered but repaired and painted. Corner boards, window and door trim, eave boards, skirt boards, flared mid-wall details should be replicated in the final look by the new siding and not covered over with the primary wall siding.
- New siding must be ventilated in order to prevent deterioration of the wood siding and wall structure behind.

Brick:

- Brick walls shall be re-laid with bricks that match the original pattern. The size of the brick shall match as closely as possible to the original in face texture, width and height, mortar size, color, rake, and placement along with any decorative overlays.





Stucco:

- Failed stucco that cannot be re-attached with anchors and recoated can be considered for full replacement.
- New stucco finishes should match the existing texture and tooling.
- Traditional stucco construction methods are preferred however modern stucco coating is allowable for recoating and repair so long as the result is not a diminished reveal for the windows, trim, doors, or other wall details.

Staff approval – replacement of all siding with same as original or with materials in approved materials list.

Projects involving lead remediation.

The following pertains only to the nature of the work as it pertains to historic aspects of the project. Owners or their representatives must ensure when conducting lead remediation, that all work complies with local, state, and federal standards.

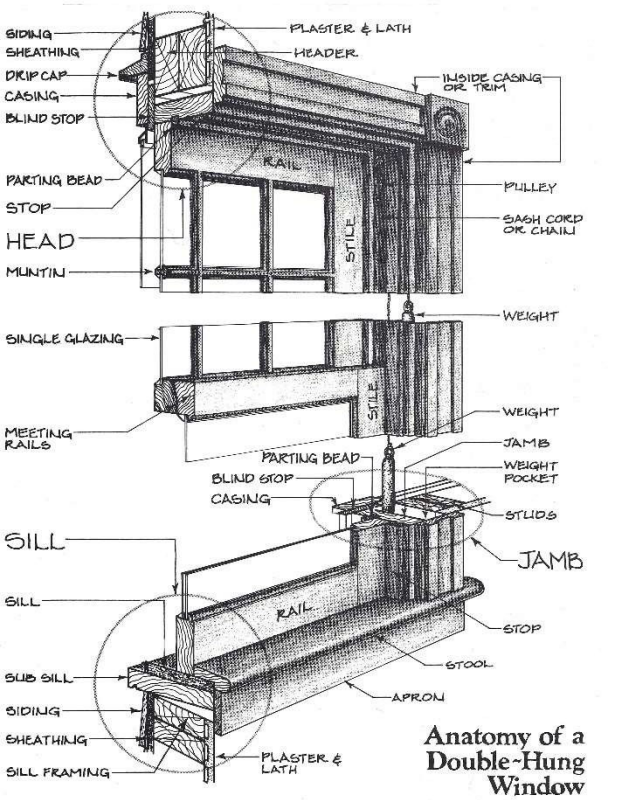
- Original wall cladding that contains lead should be maintained and repaired rather than removed and replaced.
- Encapsulation and/or removal of lead paint using safe tools and techniques before applying a new non-lead paint is the preferred project approach over wholesale replacement of original materials.

The following is not recommended and generally not approved by the Commission:

- Replacing missing wood features with conjectural or falsely reconstructed or with newly-designed elements that are incompatible with the building's size, scale, material, or color.
- Covering brick or stucco with a modern insulating system including insulation board.
- Textured plywood (T-111) vertical siding.
- Artificial stone, asbestos singles, or asphalt shingles over or replacing historic siding.
- Vinyl or aluminium siding to replace historic material.
- Obscuring or damaging historic ornament, or decoration, such as fish scale shingles, window casings, sills, hoods, brackets, or corner boards when installing new siding.
- Blown in insultation without the proper interior vaper barrier installed.
- Removing paint from traditionally painted materials and leaving uncoated.
- Encapsulating lead paint with vinyl or aluminium siding.

WINDOWS

General approach and guidance



Courtesy Old House Journal

Windows are a primary feature defining the architectural look of a building and are themselves individually important historic pieces of a building. Original or early windows should be preserved and not replaced unless beyond repair – defined as over 50% of the original materials needing to be replaced. Features of windows that are important to the architectural look of a building include their materials, placement within the facade of a building and their overall operational design – i.e. double hung, casement, hopper or fixed.

Repairing, weather stripping, and/or insulating around the window fame within the wall has been found to be as or more energy efficient, less expensive, and maintains the architectural look of a building while achieving energy efficiency. If windows are not able to be rehabilitated then new windows should match the original in materials, operation, placement, and opening size.

What is your project?

Repair existing windows, sash, or jamb.

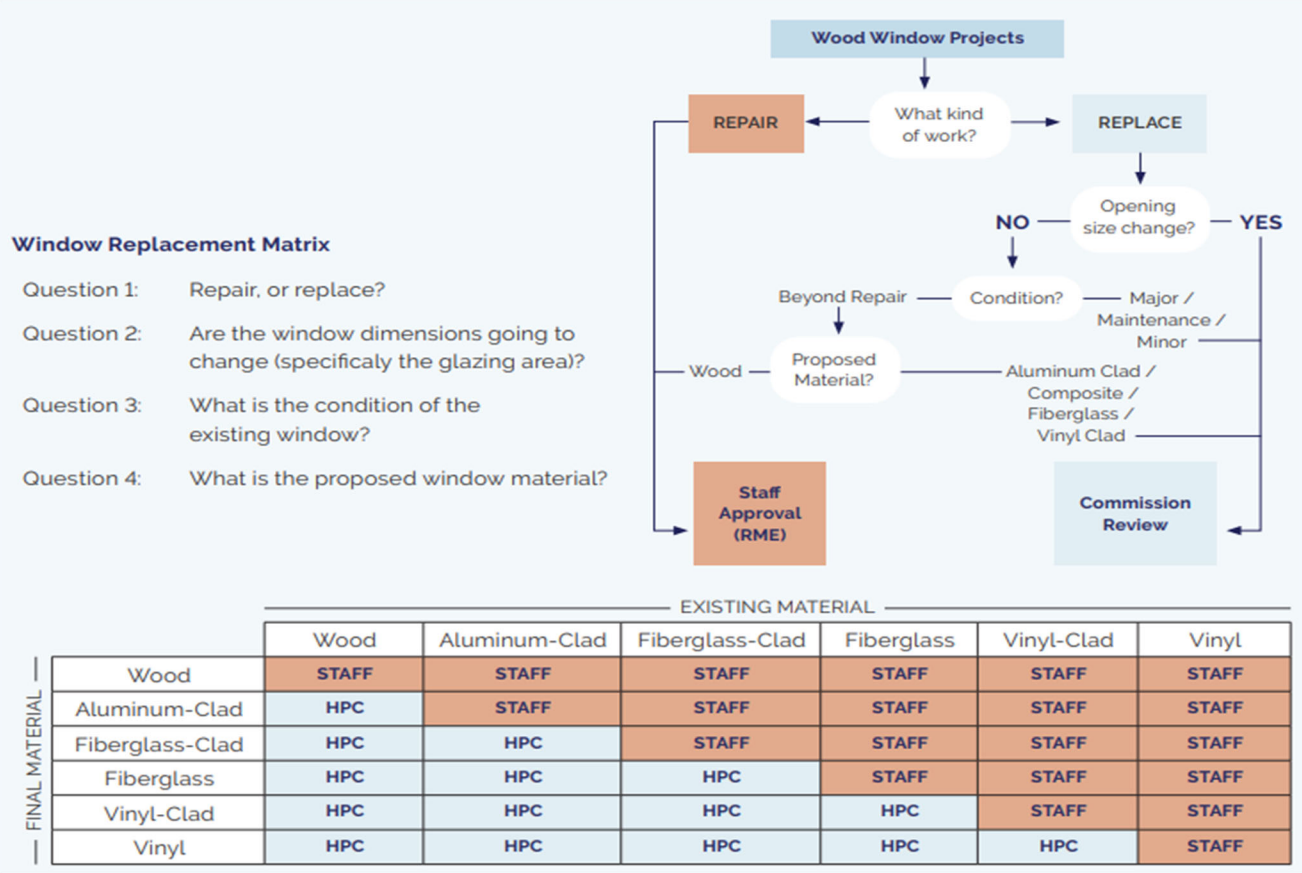
- Original or early windows should be repaired using the same materials as original. Epoxy or similar repair consolidates are recommended.

Staff approval – repair of windows using the same materials, or a combination of original materials and epoxy.

Replace fewer than all the windows.

- Original or early windows should be repaired using the same materials as original. Epoxy or similar repair consolidates are recommended.
- Where some but not all windows in a building are beyond repair, as defined as over 50% of the original window material requiring replacement, proposed replacements shall match the existing windows that will remain in size, shape, lite division, operation and materials.
- When some windows need replacement on different facades, and a phased plan is proposed, replacement projects should be undertaken one entire facade at a time. The applicant should specify which facade and the planned project timeframe.
- Phased projects should be completed in less than three years to avoid colors that don't match over time or manufacture's that change product lines.

The Commission has adopted the list below of approved windows and systems below.



FINAL MATERIAL \ EXISTING MATERIAL	Wood	Aluminum-Clad	Fiberglass-Clad	Fiberglass	Vinyl-Clad	Vinyl
Wood	STAFF	STAFF	STAFF	STAFF	STAFF	STAFF
Aluminum-Clad	HPC	STAFF	STAFF	STAFF	STAFF	STAFF
Fiberglass-Clad	HPC	HPC	STAFF	STAFF	STAFF	STAFF
Fiberglass	HPC	HPC	HPC	STAFF	STAFF	STAFF
Vinyl-Clad	HPC	HPC	HPC	HPC	STAFF	STAFF
Vinyl	HPC	HPC	HPC	HPC	HPC	STAFF

Staff approval– replacement of windows of the same size and design included within the adopted list including a proposal for a phased project that is less than three years that proceeds facade by facade.

Replace all the windows in a building.

- Original or early windows should be repaired using the same materials as original. Epoxy or similar repair consolidates are recommended.
- Where windows are beyond repair, as defined as over 50% of the original window material (not including glass) needing replacement, any new windows should match the original or early windows in size, shape, lite division, operation and materials.
- The use of aluminum clad wood systems or composite (non-vinyl) windows on primary elevations may be permissible if the new windows closely match the original.
- New sash utilizing applied grids on the exterior and interior to simulate original divided lite windows should also have a black internal divider matching the grids.

The Commission has adopted the following list of approved windows and systems below.

Pre-Approved Replacement Window Products*

Disclaimer This information is provided to assist property owners. It is not an endorsement of products or exclusionary of similar products that may meet the standards in the Historic District Ordinance

- Andersen
  - E-Series – aluminum-clad
  - A-Series – fiberglass-clad
- Kolbe
  - VistaLuxe – aluminum-clad
  - Ultra – aluminum-clad
- Marvin
  - Signature Series – Ultimate (all wood or aluminum-clad) and Modern, Tilt-Pacs
  - Elevate – fiberglass-clad
  - Essential – fiberglass
- Parrett
  - Wood and aluminum-clad wood
- Pella
  - Architect Series – all-wood
  - Impervia – fiberglass
- Windsor
  - Pinnacle – aluminum-clad
  - Legend – composite

**Note – guidelines specify that repair is recommended over replacement. When over 50% of the existing window would be replaced due to repair needs, then replacements would be in order. The chart provides a list of pre-approved products that staff could work with an applicant to approve if the proposed replacements match size and configuration.*

See approved list above for pre-approved new windows systems following talking with staff. (Do not purchase or order before final approval)

Staff approval – replacement of windows with new windows that match the original period of the building and are compatible with the original opening size. Approval of any windows beyond repair that are utilizing those in the approved list.

Restore windows where the original windows have previously been replaced.

- Where original or early windows have previously been replaced, new windows should be based on surviving windows still extant on the building, photos of the building with the original windows or similar windows found on buildings of the same period and/or in the district.
- New windows should match windows of a similar aged building in size, operation, glass to frame proportion and frame to sash proportion/opening.
- Aluminum clad wood windows systems or composite (non-vinyl) in colors approved by the Commission are allowable if they following other aspects of the guidelines. The chart above outlines windows pre-approved by the Commission:

Staff approval – replacement of previously replaced windows with new windows that match the original period of the building and are compatible with the original opening size. Approval of any windows beyond repair that are utilizing those in the approved list.

Add a new window and opening to accommodate a use inside the building.

- New windows openings should only be added to side and rear facades.
- New openings and windows should match those that are on other facades.
- Where a smaller opening is proposed, it should be in proportions like the existing window.
- Kitchens and bathrooms should be located where their windows would be on the side or rear elevations of a house to avoid a smaller window on the front façade.
- Where bathrooms and kitchens may necessitate adding a window, the new window should match those that are on other facades.

Staff approval – adding a new opening to the rear or non-public view side that follows the guidelines.

Fill in or obscure an existing original window.

- Original window openings should remain in place.
- A window sash not needed due to interior use conflicts should be fixed in place with glass blacked out leaving the exterior of the window exposed and covering over on the interior is preferred.
- If an opening is approved for in-fill, the exterior wood siding should be installed with staggered joints to blend the filled opening in with the surrounding siding. Brick infill should be toothed in to match the adjacent brick installation pattern. See also Walls.
- Kitchens and bathrooms should be located where their windows would be on the non-public side or rear elevations of a house. Where bathrooms and kitchens may necessitate covering over a portion of a window's original size, the original window

should remain in place with the lower portion blacked out on the glass and covered over on the interior while the exterior remains exposed.
- Windows shall not be re-sized to accommodate interior dropped ceilings. Where interior ceilings are being dropped, the ceilings should be bulk-headed or held back from the window to avoid shortening the window or visually obscuring its overall opening.

Staff approval – blacking out an existing window, adding a new opening to the rear or non-public view side.

Install new storm windows.

- New storm windows should match the windows on which they are installed in the material, size, frame to glass proportion, the divisions of the sash, and color.
- Storm windows should only be full view and not include divisions to match any divided windows behind.
- Double or triple track aluminum storms are acceptable if they match the underlying trim and window color.

Staff approval– new wood storms that match the profile, size, and color of the windows on which they are installed. New double/triple track aluminum storm windows in colors that match the windows on which they are installed.

Repair or install shutters by windows where no shutters exist.

- Shutters should not be installed on buildings where no evidence of their original installation exists.
- Existing shutters should be repaired with the same materials.
- If historic shutters are deteriorated beyond repair, new shutters should be made to match the originals in material, size and installed the same way as the originals were installed.
- Composite materials for the replicated shutters may be considered if the design, profile, and installation match the original.

Staff approval – replacement of existing shutters with new that match in materials, design, and installation method.

Repair or replace deteriorated decorative windows such as leaded, stained glass panels.

- Decorative windows shall be retained and repaired.
- When deteriorated beyond repair as determined by an expert with experience working on the window type, restoration should include retaining the glass within a new frame that matches the original frame in size, materials, and design.

Staff approval – repair of deteriorated decorative windows with materials that match the original.

Projects involving lead remediation.

The following pertains only to the nature of the work as it pertains to historic aspects of the project. Owners or their representatives must ensure when conducting lead remediation, that all work complies with local, state, and federal standards. Read more about the EPA RPP rule on lead remediation here.

- Original wall cladding that contains lead should be maintained and repaired rather than removed and replaced.
- Encapsulation and/or removal of lead paint using safe tools and techniques before applying a new non-lead paint is the preferred project approach over wholesale replacement of original materials.

The following is not recommended and generally not approved by the Commission:

- Vinyl clad or full vinyl sash/frame insert replacement.
- Sashes that are smaller than the original frames, openings, glass size to frame ratio.
- Sashes that are larger than the original frames, openings, glass size to frame ratio.
- Changes in operation such as double hung to casement, steel fixed to double hung, double hung to jalousie
- New windows that have applied glass divisions but do not have an interior divider in the insulated glass.
- Glass block in operable window openings.
- Permanent removal of sash and frame and in-fill of openings.
- Replacing multi-pane windows with true divided lites with thermal glazing windows that have false “snap-in” or applied muntin and mullions or sash with no divided lites.
- Smoked, tinted, or reflective glass on building facades that can be seen from the public street.
- Filling in or removing transoms or side lites.
- Install new floors or dropped ceilings that block the glazed area of historic windows. If such an approach is required, the design should incorporate setbacks that allow the full height of the window to be seen unobstructed.
- Single hung storm windows where the window behind is a double hung or other multiple sash operation.
- Storm windows that do not match with the window behind in color or sash division.
- Permanently remove or alter original sash to install a window air conditioner.
- Security bars located on the exterior of the window opening.

New Construction

General understanding and approach

A new residential building should be compatible with its context and reflect design features found in traditional District residential buildings. This includes building setback, scale and overall height, the number of stories, massing, foundation height, roof form, window and door sizes and placement, and porches.

Building setbacks within a typical residential context reflect a transition from public to private space. This transition begins at the street, which is the most public space, then proceeds through semi-private front yard, and ends at the front door, which is the start of private space. This sequence should be maintained, because it enhances the pedestrian environment and contributes to the character of a residential District.

The massing of a new building should fit within existing patterns but need not directly copy them. Variables in massing include varied heights, articulated masses, and entryways. Building massing should continue to provide a variety of pedestrian-friendly scales and visually appealing forms. Buildings should not be monolithic in scale or greatly contrast with the existing scale of the area.

To achieve a sense of human scale with new development, it is important to focus design on aspects most directly experienced by pedestrians, such as the scale of buildings and architectural details at the street level. For example, providing a front porch in a residential setting creates a human scale. These features should be respected in new construction.

In most Districts, a similarity of building and roof form also contributes to a sense of visual continuity. To maintain this characteristic, a new building should have basic building and roof forms like those seen in the District.

Most residential buildings have similar amounts of glass, resulting in a relatively uniform solid-to-void (window to wall) ratio. The amount of façade devoted to wall surface on a new building as compared to that developed as openings, should be like that of other buildings within the District. A new residential building should appear to be clearly connected to the street.

Building materials for new structures and additions to existing buildings should contribute to the visual continuity of the District and appear like those seen traditionally.

The Standards

SETBACKS AND SITE PARAMETERS

- Design characteristics of typical existing buildings help define rhythms that may contribute to the character of a neighborhood. Specific features that should be used in defining physical context include: building age, style, design character, materials, the relationship of openings to solid wall areas, building use, roof lines, eaves, location of entries, and the placement of accessory structures.

- Reflect the traditional setbacks seen within the block. Place the façade of the building at the property line. This should only vary in special circumstances, such as local precedence with treatments for large public buildings and places of worship.

MASSING AND SCALE

- Maintain the average perceived size of buildings at the sidewalk.
- Façade heights of new buildings should fall within the established range along the block and respect traditional proportions of height to width. Floor-to-floor heights should appear like those of traditional buildings in the area.
- Traditional spacing patterns created by the repetition of uniform building widths along streets should be maintained. New façade widths should reflect the established range of the building widths seen along the block. Reference historic examples for double and triple lot buildings.
- Where a building must exceed this width, use a change in design features to suggest the traditional building widths. Changes in façade material, window design, façade height or decorative details are techniques that may be considered. These variations should be expressed through the structure, so the composition is a collection of smaller buildings.
- Position taller portions of a structure away from neighboring buildings of lower scale.
- Where permitted by zoning, taller structures should be located to minimize looming effects and shading of lower-scaled neighboring. Taller buildings should step down towards lower-scaled neighbors, including adjacent historic properties and Districts.
- Establish a sense of human scale in building designs. Use vertical and horizontal articulation to break up large facades. Incorporate changes in color, texture and materials in building designs to help define human scale. Use architectural details that create visual interest and convey a three- dimensional façade. Use materials which help to convey scale through their proportions, detailing and form. Size and locate signs to engage pedestrians and help define building entries.
- Roof forms should be like those historically found in the District.
- Use a ratio of solid-to-void (wall-to window) that is like that found on traditional commercial structures. Large surfaces of glass beyond the storefront is not recommended.

ARCHITECTURAL CHARACTER

- Design a new building to reflect its time, while respecting key features of its context. Use contemporary interpretations of historic architectural building types when designing a new building.
- Open porches on the main façade area a primary design requirement.
- Contemporary interpretations of traditional designs and details should be considered.
- Special features which may be used in defining physical character: building height, building form, roof form, variations in wall planes, and the relationship of building area to lot size.
- Use similar window and door proportions to those seen traditionally. Upper story windows

with a vertical emphasis are encouraged. A general rule is that the height of the window should be twice the dimension of the width. If a larger window is needed, combine sets of vertically proportioned windows.

- Maintain the general alignment of horizontal features on a building front. Typical elements that align include window mouldings, tops of display windows, cornices, copings, and parapets at the tops of buildings. When large buildings are designed to appear as several buildings, there should be some slight variation in alignments between the horizontal façade elements.
- Maintain the traditional spacing patterns created by upper story windows. Maintain the historic proportions of windows. Window headers and sills on new buildings should maintain the traditional placement relative to cornices and belt courses.
- Maintain the pattern created by recessed entryways. Set the door back an adequate amount from the front façade to establish a distinct threshold for pedestrians. A recessed dimension of four feet is typical. Where entries are recessed, the building line at the sidewalk edge should be maintained by the upper floor(s). Use transoms over doorways to maintain the full vertical height of the storefront.

MATERIALS

- Use masonry that appears similar in character to that seen historically. Brick should have a modular dimension like that used traditionally. Brick larger than the nominal 2-3/8" x 8" is discouraged. Brick should also appear structural in its application as load bearing and should be detailed accordingly.
- Stone, like that used traditionally, is also appropriate.
- Alternative materials should appear similar in scale, proportion, texture, and finish to those used traditionally for that building type.
- Use high quality, durable materials proven to be durable in the local climate.
- Façade materials should maintain an intended finish over time or acquire a patina which is understood to be an outcome of normal interaction with the elements.
- Use materials that match the historic building in look and detailing. The following materials have been pre-approved by the Commission for use on addition

Pre-Approved Materials

Project	Material	Manufacturer
Doors	Steel	
	Fiberglass	
Trim	Cedar	
	Thermally Modified Wood	MacBeath Hardwood
	PolyAsh	Boral
	Wood Composite	LP SmartSide, MiraTex
	Fiber Cement	James Hardie
	Cellular PVC	Azek, Kleer, Fypon, Palight
Siding	PolyAsh	Boral TruExterior
	Wood Composite	LP SmartSide
	Fiber Cement	James Hardie HardiePlank

The following is not recommended and generally not approved by the Commission:

SETBACKS AND SITE PARAMETERS

- Demolishing contributing structures in a historic District to make way for new or large-scale construction.
- Locating entire building fronts behind the established set-back line.

MASSING AND SCALE

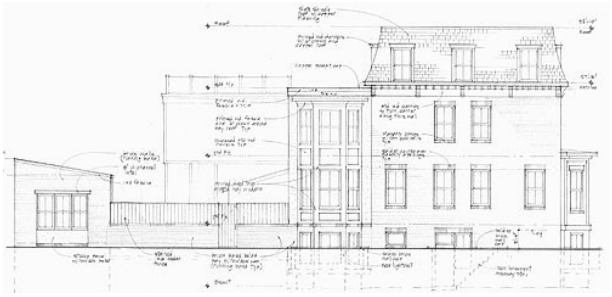
- Exotic roof forms, such as A-frames and steep shed roofs.

ARCHITECTURAL CHARACTER

- Odd window shapes such as octagons, triangles, and diamonds.
- Undersized trim around windows and doors, corners and

eaves. **MATERIALS**

- Vinyl and synthetic materials.



ADDITIONS

General understanding and approach

When planning an addition to an existing building, consider the effect it will have on the structure.

The guidelines are intended to direct design of additions that positively contribute to the original characteristics and style of a building as well as any later, appropriate alterations that occurred over time. Later, inappropriate alterations that are not in line or compliment the original characteristics of the house should not be considered in design of an addition.

The design should take advantage of existing site features, the orientation of the property, and its prevailing wind or solar patterns.

The Standards

Massing

- Design the mass of a new addition to remain compatible but no overpower the primary structure.
- The loss of historically significant features, where they exist, should be avoided.
- An addition should be simple in design to prevent it from competing with the primary façade.
- The addition should be distinguishable from the historic structure upon close inspection, while not drawing contrast as to detract from the historic structure.
- A new addition should fit within the range of stories, size, and scale, that help define the character of the building and District.
- Generally, the original orientation of a building should not be altered when constructing a new addition. An addition should not turn a secondary façade into a primary façade.
- New additions should be reflective of their own time and not create a false historic look.

Relationship With Historic Structure

- Place an addition at the rear of a building or set it back from the front to minimize its visual impact. This will allow the original proportions and character to remain prominent.
- An addition should be compatible in scale, materials, and character with the main building.
- Design any addition so that it is subordinate to the original building. Generally, additions should not exceed half of the original building's total floor area or building footprint.
- Additions shall be attached to secondary or tertiary elevations and should be set back from the front façade, so as not to damage or obscure character-defining features.

- While a smaller addition is visually preferable, if the addition is to be significantly larger than the original building, one option is to separate it from the primary building, when feasible, and then link it with a smaller connector.
- For a larger addition, break up the mass of the addition into smaller modules that relate to the scale of the parts of the historic structure.
- Use materials that are the same as or subordinate to the primary material of the original building.
- Use materials that match the historic building in look and detailing. The following materials have been pre-approved by the Commission for use on additions:

Pre-Approved Materials

Project	Material	Manufacturer
Doors	Steel	
	Fiberglass	
Trim	Cedar	
	Thermally Modified Wood	MacBeath Hardwood
	PolyAsh	Boral
	Wood Composite	LP SmartSide, MiraTex
	Fiber Cement	James Hardie
	Cellular PVC	Azek, Kleer, Fypon, Palight
Siding	PolyAsh	Boral TruExterior
	Wood Composite	LP SmartSide
	Fiber Cement	James Hardie HardiePlank

- Respect original roof forms when designing an addition. Additions should complement existing forms, not overwhelm them.
- Design any new addition so that the first-floor height is equal to or slightly lower than the original building. The floor-to-floor heights should be equal to or up to ten percent (10%) less than the original building. In no case should the floor heights exceed those of the original building.
- Design additions to have the same relationship of solids (wall surfaces) to voids (window and door openings) as the historic portion.
- Design additions so that there are subtle distinguishing characteristics between the historic portion and the new. This may include simplifying details, changing materials, or slightly altering proportion.

Rooftop Additions

- Vertically additions are encouraged on side or rear roofs to minimize the impacts of additions and preserve rear yards.
- The roof form of a dormer addition should be in character with and subordinate to that of the primary building.

- Repeat the roof lines and slopes, and details found on the primary structure. Typically, gable hip and shed roofs are appropriate for residential-type building additions. Flat roofs may occasionally be appropriate when no other option is feasible, or on international style structures.
- When constructing a rooftop addition, keep the mass and scale subordinate to the primary building and to the overall roof mass and should be in scale with those on similar historic structures
- Dormer additions should not overhang the lower floors of the primary building.
- Rather than oversized dormers or large bump up additions an addition to the rear of a structure should be considered.
- The ridge of a dormer addition should be below the ridge line of the primary structure.
- A dormer should be similar in character to the primary roof form.
- Use materials that match the historic building in look and detailing. The materials above have been pre-approved by the Commission for use on additions:
- The number and size of dormers should not visually overwhelm the scale of the primary structure.

Demolition, Deconstruction and Moving of a Building

General understanding and approach

Demolition and deconstruction, herein referred to as demolition, are considered only when fire, winds, flooding, or other natural disasters cause unrepairable extensive damage to a building and/or its structural framework. Demolition is defined as the razing, wrecking or removal by any means of the entire or partial exterior of a structure. Demolition by neglect occurs in the absence of ordinary and routine maintenance, jeopardizing the structural integrity of the building.

Demolition of a contributing building within the historic district is a last resort and approved only in rare circumstances such as when a building has become a hazard to the safety and welfare of the public and repairs are not possible.

When demolition is considered, salvage of character defining features is encouraged along with a plan for the use/development of the site post demolition.

Commission approval is required for all demolition proposals including a situation where a collapse may pose a threat to public safety. In such an emergency the Commission staff should be contacted, and an emergency meeting of the Commission may be called either in person or virtually. Except in extreme situations, before a demolition can proceed, an opinion by a licensed structural engineer familiar with the historic building type must be provided.

What factors are considered by the Commission when reviewing an application for demolition?

- Failed or inadequate foundation.
- Collapsed roof and/or floor supports.
- Wall members, partitions or other vertical supports that split, lean, list or buckle.
- Structural members of ceilings and roofs, or other horizontal elements which sag, split, or buckle.
- Lack of weather protection to the walls, roof, or foundation.
- Despite marketing the property, no one is interested in its rehabilitation – evidence of marketing will be required as part of the COA submission.
- Estimates for the cost of renovation.
- Appraisals for the market value of the building after renovation.

The architectural and historical significance of the building and its relation to the street shall be considered as it fits in with the street and overall district.

In instances where the demolition of a historic building is approved by the Commission, owners are encouraged to salvage character defining materials and other reusable items.

Moving A Building

On rare occasions where a building is not beyond repair and no alternative exists to incorporate it into a new development, then relocation shall be considered. The first preference is to relocate a building within the same district as it currently exists. If no suitable locations exist within the district, then a site should be selected in another historic area that is of a similar era and allows the positioning of the relocated building on the new site in a way that is similar to its original location. Important considerations include the elevation from street level set back from front and or side streets. Before demolition is approved absent relocation, the applicant shall provide evidence that redevelopment of the existing building or relocation is not feasible.

The following must be submitted by the applicant in support of their effort to identify a party interested in redeveloping the building in place or its relocation:

- Statement about the reason the building cannot remain in its present location, cannot be included in a new project including design and use program constraints.
- Advertisements or other evidence of efforts to inform the public of the availability of the building for either redevelopment or relocation.
- Sites considered as potential new location along with reasons each site was eliminated.

HISTORIC DISTRICT CONTEXT AND INTEGRITY

A key tenant of historic district designation relates to the context of the building and neighborhood. The building setting - the area or environment in which a historic structure is found – coupled with the design of the individual buildings forms the basis for all review.

The elements of setting, such as the relationship of buildings to one another, property setbacks, fence patterns, views, driveways, and walkways, together with street trees and other landscaping features create the specific character of the neighborhood. The guidelines aim to achieve the following goals:

- Preserve key features that are important in defining the district's traditional character of the setting. Those features include roads, and streets, furnishings, and fixtures, natural or topographic aspects, key views, and vistas.
- Retain the historic relationship between buildings, streets, and landscape features.
- Avoid the removal, relocation, or substantial alteration of any streetscape or landscape element that contributes to the traditional character of the setting.
- Avoid changing the historic relationship of a building to its setting.
- Removal and replacement of existing historic features with new materials, when it is economically feasible to save and repair originals, is inappropriate.

Building Integrity and Ratings

At the individual site level, the integrity of a building (how much or little a historic building has changed over time) is a primary consideration of the Commission when reviewing projects. This rating system is required by the enabling law guiding the Commission.

The rating system involved evaluating each property within the district and classifying them into one of five classes based on the building's integrity. Integrity is the word used to frame the discussion about proposed changes to a building. It is a term used in historic preservation to help owners, architects and Commission members get a sense of how much the building has changed over time. Buildings with a high level of historic integrity have retained a high amount of original materials and their original design. Those with a low level of integrity have many changes. And there are buildings along a spectrum in between.

When reviewing proposed changes to buildings in the District, the rating system helps determine the latitude of proposed changes to the building. More latitude comes to buildings with more changes. Projects involving buildings with a high level of integrity tend to focus on preservation and less change. The ratings come out of a city-wide survey of all built structures. Generally, buildings 50 years old and older were evaluated. From that the City's most important historic areas were identified, and the local district created.

What are the ratings?

Outstanding (O)

Properties that are architecturally distinctive and are largely unaltered. They may have additions or minor changes sympathetic to the original design. Outstanding rated building generally have an integrity of 90% original or higher. Outstanding rated building are often eligible to be listed on the National Register of Historic Places as an individual site for their architectural or historical merit.

Review of projects proposed for Outstanding buildings will prioritize retention of original materials instead of replacement. Additions are fine when their design is highly refined and compatible with the original

Notable (N)

Properties that were built around the time the district was developed or later that possess a high degree of original design and retain a high level of original materials. Notable buildings may have additions or minor changes which are sympathetic to the original design. Notable buildings will generally have an integrity of 80% or higher. The integrity would include original fenestration, wall finishes, and roofing patterns. Additions and alterations may be present with related architectural features and materials.

Review of projects involving Notable rated buildings will favor retention of original materials and form over replacement. When retention is not possible then replacement will prioritize use of similar materials to those originally used. Additions are fine when the design is compatible with the original.

Contributing (C):

Properties that were built around the time the district was developed or later that retain their basic form and contribute to the historic feel of the neighborhood. These buildings may have changes such as windows, siding or closed-in porches. Such properties are important to the density or continuity of an area's historic fabric, without detracting from the integrity of the whole. Contributing rated buildings have 50% or higher integrity.

Review of projects involving Contributing rated buildings will focus on the retention of original materials and design when intact and the preservation of the basic form and design of the house as originally constructed. More latitude is allowed for replacement materials and details of an addition.

Contributing/Non-Historic (CNH) -

Properties that have been built as new construction in the district which have been reviewed and approved by the Commission. The resulting building is considered compatible and contributes to the district in terms of scale, massing, materials, detailing, and site placement. As a building considered a product of its time and architectural development of the historic district, review is undertaken in a similar manner as contributing-rated historic structures in the district.

Review of projects involving a Contributing/Non-Historic Building will focus on the retention of its design in terms of scale, massing, materials, detailing, and site placement with broad latitude for replacement materials that confer the design intent.

Non-contributing (NC)

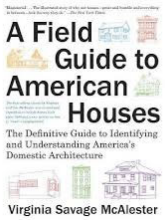
Buildings constructed after the date the district was developed, or buildings from the district's time of development that have substantial alterations that have completely changed the design of the building, obscuring its original architecture, or otherwise incompatible with their historical surroundings. The integrity is severely decreased, fenestration elements, cladding, and roofing have been replaced, removed, or covered over with no correlation to the original patterns, profiles, or other character defining features. Non-contributing buildings will have an integrity of less than 50%.

Review of projects involving non-contributing buildings will follow guidance as found under new construction.

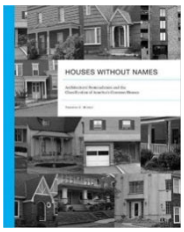
WHAT DESIGN PERIOD IS MY BUILDING?

Like the style of clothes or the newest car model, buildings built at different times reflect the popular design trends at the time they were built. These different design periods are popularly referred to as "styles". You can figure out the style of your building as you embark on a project to help ensure the preservation of the important things that give it its look and feel; details known as character-defining features. These features are used when reviewing changes to your building. The following resources can help you figure out the character-defining details on your house:

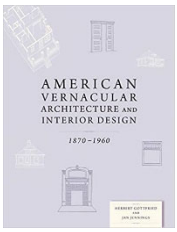
Residential architectural design



One of the best sources for architectural styles is A Field Guide to American Houses, by Virginia Savage McAlester. This newly updated guide has been a compass point for historic preservation for decades.



Hubka's Houses Without Names is a very good resource for catalog and tract housing of various years, including contemporary – here.



American Vernacular Buildings and Interiors by Gottfried and Jennings is also good and well-illustrated with line drawings – here.

Digitally, here are some good sites to consult.

Indiana Landmarks offers the following site that identifies many common residential styles found in Indiana – here.

The Indiana Division of Historic Preservation and Archaeology offers a residential style guide – here.

Old House Journal's online platform looks at styles – here.

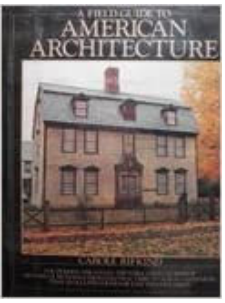
If you are interested in periods from the modern era, often referred to as mid-century modern –

Docomomo offers a guide to the modern era here.

The Georgia state historic preservation office was one of the first to type mid-century houses – find their guide – here.

Commercial Architectural Design

Commercial architecture follows a similar trend line as found in the residential realm with many design details being found in both commercial and residential buildings. For more about commercial architecture's specific attributes go here. Or from the National Main Street Center – here.



While out of print, used copies are often available, Rifkind's Field Guide to American Architecture is one of the few that includes commercial and religious buildings – here.

Wisconsin Main Street created the following guide – here.

The Washington Department of Archaeology and Historic Preservation has this guide that looks at both residential and commercial – here.

WHAT IS THE HISTORY OF MY BUILDING?

Discovering the history of your building can uncover fascinating connections to the past. A bit of investigative inquisitiveness is required, but anyone can do it. Here is a link to a great resource to walk you through the steps – here.

Planning a Preservation Project and Hiring a Contractor

When you decide it is time to do some work on your building, some simple steps can help you develop a project that accomplishes your goals, protects the historic look and feel of your property and gets it done by a qualified contractor. Below is an overview with some links for your assistance.

PLANNING A PROJECT

What gives your building its historic look and feel?

Projects involving historic buildings include a range of activities, such as maintenance of existing historic elements, repair of deteriorated materials, replacement of missing features and construction of new additions. When planning a preservation project consider the following steps:

- What is the historic significance of the building and the various building parts that will be part of the project?
- How much has the building changed over time- something called integrity.
- What historic elements are important for preservation during the project?
- Determine use requirements of the building prior to outlining a strategy and project scope.

It is often helpful to take this approach to help you figure out the important aspects of the building and district that might be impacted by a project. Of course, for simple repairs and small changes some of these steps might not be necessary.

- Look from a distance. Stand across the street and look at the building – what stands out to you about its design, size, shape, materials? From down the street note the same things.
- Get closer. From the site, look at the building, its materials, size, shape, and placement. What stands out to you?
- Get up close and detailed. What materials, shapes (profiles), finishes (flat, curved etc), placements impact your feel of the design of the building? What changes can you see evidenced by different materials, breaks in the materials lines, missing pieces, or parts?

This National Park Service briefs help you learn more about how to read a building, go here.

What is historic significance?

When developing the survey of sites within the City of Elkhart, the following criteria were used:

- At least 50 years old - exceptions do exist when a more recent property has clear architectural or historical association value.
- Association with events that have made a significant contribution to the broad patterns of our history - for example, the neighborhood was constructed all out of kit houses.
- Association with the lives of significant persons in our past.
- Distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction or,
- A structure that yields or may be likely to yield archaeology discoveries.
- A structure, property, object, site, or area with sufficient integrity of location, design, materials, and workmanship to make it worthy of preservation or restoration, or
- An established and familiar natural setting or visual feature of the community.

Assess Integrity

In addition to being historically significant, a property's integrity plays a role in the development of a project plan. Integrity is a measure of how much change a building has had since it was constructed. A building with little change is considered to have a high level of integrity. One with a lot of change will be considered to have a low level of integrity.

Most of the building's structural system and materials should be from the period of its construction or other important changes, and its character-defining features should remain intact. These may include architectural details such as storefronts, cornices, moldings and upper-story windows on commercial buildings, and dormers, porches, ornamental brackets, and moldings on residential buildings. The overall building form and materials should also be preserved intact. These elements allow a building to be recognized as a product of its own time. Integrity is the basis of these guidelines in determining to what degree alterations, substitute materials, and new construction may be appropriate.

The Commission staff is available to assist you in this assessment and to help map out a project plan. Contact:

KyleAnthony-Petter Kyle.Anthony-Petter@coei.org (574) 338-1897, extension 3152

HIRING A CONTRACTOR

There are many good contractors that you can tap to carry out your renovation plan. The best contractors for your historic building are those who have experience working with historic buildings. The following outline helps you with a best practices approach to hiring a contractor.

Here are some tips:

1. Define your scope of work – i.e. what do you want to do?

The scope of work describes what you want a contractor to do in written form. A clearly written scope of work allows each contractor to submit a bid based on the same information; it will form the basis for your contract so you both understand the expectations of what is to be done for the price contracted.

Make sure to include who will get permits, dumpsters and be responsible for clean-up and debris removal. If you are having trouble defining or articulating your project, try clipping magazine pictures, layouts, materials, or other examples that you can show.

2. What is your timetable for the project?

Contractors are busy! Do not expect a contractor to be immediately available the next week to start your job. Begin planning early and give time for contractors to get your bid together. Rushing bidding or setting a timeline that does not allow for your project to be worked into a contractor's schedule will result in either no bids returned or pricing for the work to be higher than necessary.

Things that you will want to include for the contractor – when would you like the work to start and finish? Are there any special timing considerations? Consider scheduling indoor work for the winter when contractors need such jobs.

3. What is your budget – how much do you hope to spend?

Be realistic about the amount of money you can spend and include at least a 10% cushion. You should consider not only how much you can afford but within that amount what is realistic to expect to be completed for that budget. Keep in mind, it is almost always more expensive than you first believe it should be. Popular media shows are not a good barometer of real-world costs.

4. Research contractors

One of the most difficult things is finding the right contractor who can or will do your project. Consider on-line sites who can help with referrals. Neighbors who have recently had work done may be another. Always ask for references and follow up when securing bids. Connect with the local Better Business Bureau and building department. The lowest bidder may not be the best contractor for the job.

5. From your preliminary list – consider two or three contractors to look at your project.

Interview your short list at the project site. Listen to how they would approach the project, their observations about the challenges, their overall attitude about the project. Consider your connection – could you work with this person for the duration of the project? Ask them who specifically would be on your project. Are they punctual? Organized? Prompt in returning calls. These factors may be an indication of how the contractor approaches projects, and the firm's attentiveness to detail and schedule. Most of all, trust your gut reaction to the first meeting. If you are not comfortable with a contractor keep looking.

In the interview, ask questions about their project history, approach to managing jobs, and your project. Discuss your expectations, especially regarding the project cost and schedule, to get the contractor's initial reaction. Be sure to ask the contractors how they handle change orders, which document time and/or material alterations to the original bid.

Here is a sampling of questions you might ask:

- What are your current projects?
- Have you done projects like my project?
- How long have you been in business?
- How many people will be on the job?
- Can the job be completed within the proposed schedule?
- Will you hold weekly meetings with me about the project status?
- Will the supervisor be on site?
- Do you arrange for building permits and debris removal?
- What labor and material warranty do you offer?
- What are your payment terms?
- Will you share references that I can contact?
- Do you carry commercial liability and workmen's compensation insurance?

6. Ask for Bids

Ask for a bid in writing due by a specific date. Contracts will give a bid as a lump-sum amount, a cost-plus amount, an amount based on time and materials, or a combination of these types. If the project is well-defined and straightforward with little changes of unforeseen problems, a simple lump-sum bid should be possible. However, if the project calls for one of the other bid types, agree to a mark-up of no more than 10%-15% for materials prior to bidding. Consider penalties for projects not completed on time. Or, consider a bonus for a project completed early.

Most contractors require a down payment of 35%-30% of the contract total. DO NOT PAY IN FULL IN ADVANCE. Upon substantial completion, 90% of the contract is due with the balance paid after the final punch list is completed. Make sure to define and agree to what constitutes substantial

completion of the project scope of work.

Get a copy of the firms' insurance certificate showing commercial liability and workmen's compensation and provide that to your insurance agent for review of adequacy.

7. Check References

Check the contractors' references by phone and in person to gauge the customers' satisfaction and if the details of the work meet your standards. You might also call the Indiana Secretary of State's office to make sure no complaints have been lodged against the contractor. Questions you might ask:

- Were you satisfied with the work?
- Would you hire the contractor again?
- Was the crew timely and professional?
- Did the crew observe safety procedures?
- How did the contractor handle problems?
- Was the job completed on time and within budget?
- Were change orders handled promptly?
- Did the crew maintain a neat and clean job site?

8. Compare bids and select a contractor

Once bids are returned, compare them with your scope of work and initial budget. Base your selection on bids you receive and on the results of your reference checks. If a bid is unclear, or does not appear to include all elements of your scope of work, ask the contractor for a written clarification.

Once you have made your choice, ask the contractor to draft a schedule that will allow you to gauge the progress of the project. Make sure you get copies of the contractor's insurance certificate, with your name listed as an additional insured. And be certain you understand and agree on the payment terms and approach to change orders.

9. Document

Take photos before and daily during including video to develop a record of the progress. Document phone conversations and on-site conversations with an email follow up stating the agreement that you reached. Set up regular progress meetings with the contractor to review progress and discuss any problems or concerns that might have arisen. Regular, face-to-face communication ensures mutual understanding of the project and a cooperative contractor-client relationship.

Some other resources:

- Homeadvisor.com offers a good overview here.
- Recommended Books:

Poore, Patricia, ed. The Old House Journal Guide to Restoration. New York, Dutton, 1992.

Litchfield, Michael W. Renovation: A Complete Guide, 5th addition. New York, John Wiley & Sons, Inc., 2019.

Project Checklist		
What makes your building		
_____		list of important design
_____		changes over
Preparing for contractor		
		Have you
_____		scope of
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_____		questions to ask
During Interview		
_____		show and describe
_____		supply written
_____		ask questions you
_____		ask for
_____		ask for written bid by date
Before choosing		
_____		check references by
_____		asked BBB or other
_____		compared bid to scope of
Once contractor		
_____		contractor provided written
_____		certificate of Insurance in
_____		project meeting schedule
_____		document project with
_____		email confirm

FINANCIAL INCENTIVES FOR HISTORIC BUILDINGS OWNERS

There are a few incentives for historic building owners. Most such incentives require that the building be listed on the National or State Register of Historic Places. The State of Indiana maintains an easy to use database that you can access to look up the status of your building. Go to that database here. So, that is your first step. If it is listed, then review the information below or the pdf that you can find on resources here.

TAX CREDITS FOR COMMERICALLY USED PROPERTIES

The federal government encourages re-use of historic structures by offering as incentives tax credits for restoration. Tax credits work like this: 20 percent of what a property owner spends to rehabilitate a historic, income-producing property comes off the bottom line of the taxes paid to the federal government. If you spend $100,000 to restore an old hotel, for example, you pay $20,000 less in federal tax. Rules govern what types of buildings and what kind of work qualifies. It is best to seek the advice of a tax attorney and preservation experts before moving forward with a project.

An owner who renovates a qualified historic commercial or residential property following preservation standards may apply for a federal tax credit. To qualify for the Rehabilitation Investment Tax Credit (RITC):

- The building must be listed in or eligible for the National Register of Historic Places, either individually or as a contributing structure in a designated historic district.
- The property can be a commercial building, a factory, or even an old house—but it must be income-producing, not a private residence.
- The project must involve a "substantial rehabilitation," which means spending more than $10,000 or the property's adjusted basis, whichever is greater, over a specific period, typically 24 to 60 months.
- The renovation work must qualify as a "certified rehabilitation," meaning that it complies with the Secretary of the Interior's Standards for Rehabilitation. As a general approach the Standards suggest:
  - Do not change anything you do not have to change.
  - If you must change something, make sure it does not alter the significance of the property.
  - Make changes reversible.
  - Make repairs with the same materials as those being replaced.
- The work must be approved before starting construction. To ensure that proposed work will be approved, before any demolition or renovation work begins, property owners applying for the federal credit should submit plans to the Indiana Division of Historic Preservation and Archaeology (DHPA).
- It is always a best practice to consult your accountant or tax attorney regarding a project. Find out more information about the Tax Credit programs at the Indiana Division of Historic Preservation's web page - here.

TAX CREDITS FOR OWNER OCCUPIED PROPERTIES

A property owner who rehabilitates a primary residence may qualify for the Indiana Residential Historic Rehabilitation Credit. The incentive allows an owner-occupant to take a credit against state income tax liability equal to 20 percent of "qualified" preservation or rehab expenses. To qualify the following general thresholds must be met:

- The property is listed in the Indiana Register of Historic Places either individually or as part of a district.
- The project cost must exceed $10,000 and cannot include such items as the cost of enlarging an existing structure, paving, or landscaping.
- All work must be approved in advance. To determine what expenses qualify, property owners must submit a preservation or rehabilitation plan to Indiana Division of Historic Preservation and Archaeology.
- Work must be completed within a specified period, ranging from two to five years.
- If the credit exceeds a homeowner's state tax liability, the remainder may be carried over for up to 15 years. The residential credit is subject to recapture by the state within five years of the completion—triggered if the homeowner sells the property or completes any additional work that does not meet the DHPA's standards.
- Contact your accountant or tax attorney well in advance.

Find our more information about the residential tax credit from the Indiana Division of Historic Preservation and Archaeology web site - here.

GRANT FOR COMMERICALLY USED PROPERTY

The state of Indiana offers the Historic Renovation Grant program through the State's office of Community and Rural Affairs. The program is a downtown economic development incentive that provides grant money to owners rehabilitating a historic building.

To qualify:

- The building must be at least 50 years old and listed in the State or National Register of Historic Places.
- The building must be actively used and income producing.
- The renovation must follow the Secretary of the Interior's Standards for Rehabilitation.

Once a year, OCRA awards grants up to $100,000, limited to 50 percent of eligible project costs (exterior only), with proof required for the 50 percent match. The process requires submission of a letter of intent, followed by a formal application. Find out more information here.

ACCESSIBILITY

Access to historic buildings for everyone regardless of ability is an important project goal for all sites. Owners of historic properties should comply as fully as possible with the Americans with Disabilities Act (ADA), State and local accessibility codes while preserving the building's historic integrity – the materials and designs that give it its look and feel.

Special provisions for historic buildings exist in the law and building codes allowing alternatives in meeting the ADA standards. Remember that ADA is not only for wheelchairs, but owners are advised to consider signage for the site impaired, and color for those with color blindness.

The National Park Service offers guidance and recommendations for designing accessibility solutions here.

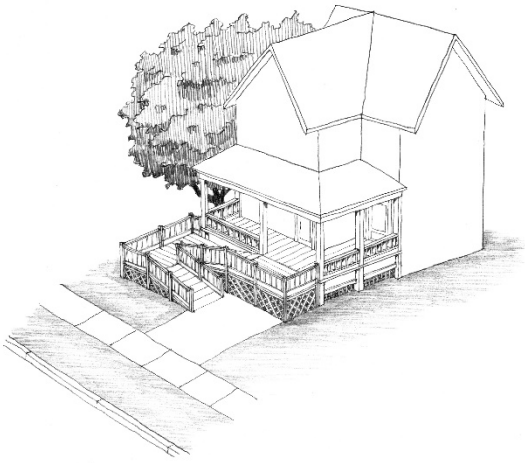
If an addition is contemplated to provide accessibility, the following National Park Service Technical bulletin may be helpful – here.

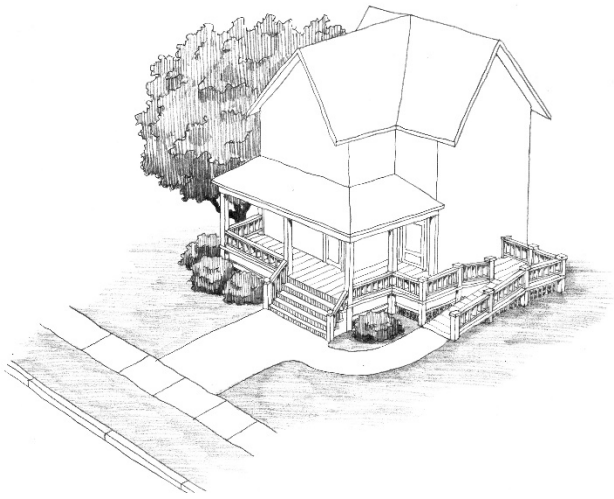
Additional Resources can be found:
Structure Magazine
Old House Online – Adapting your old house as you age
Old House Online – Updating for accessibility

Adding a Ramp

Ramps provide the most common form of entrance modification to allow barrier free entrance to the main floor of a building. They can be designed as a compliment to the historic building.

Or they can be a detriment – this approach would not be approved by the Commission





Modifying Sidewalks and Other Walkways

If the entrance has one or two steps and sufficient area in front and to the side of the entrance, consider modifying the grade to slope it up (no more than 1” in height to 12” in run) to eliminate the steps.

Adding Railings to Existing Stairs and Landings

New handrails should be designed with balusters and handrails that are reflective of the design of the building. Materials should be reflective of the building – aluminum and wrought iron should be considered for masonry buildings and wood railings fashioned in a similar manner as any other porch railings for wood buildings.

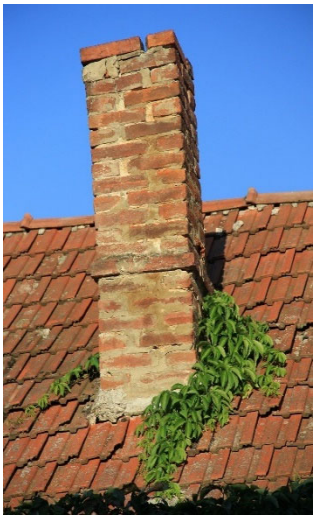
CHIMNEYS

A functional part of a building installed to remove smoke from an interior fireplace, on the exterior historic chimneys are often distinctive features that contribute to the overall architectural look of the building. Today, many chimneys are no longer functional but should be retained for their character. However, their non-use can create problems as the hot gasses and moisture that used to move up through the flue is no longer present to keep mortar pliable.

Since chimneys are masonry constructions – it is best to follow guidance about masonry repair and maintenance when considering a project.

The National Park Service offers the following when embarking on any masonry repairs here.

Best Practices:



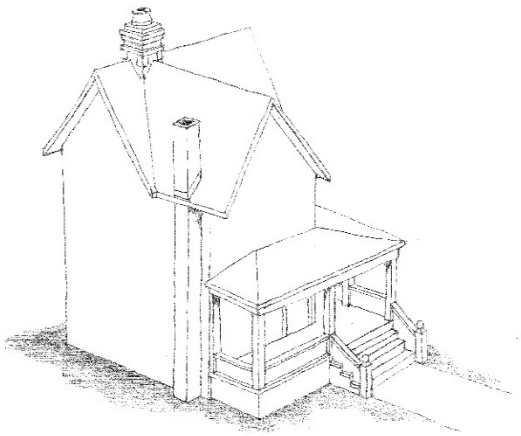
Maintain chimneys to avoid future roof damage.

Non unused chimneys should be capped with masonry caps while maintain their design. This will help keep water and critters from entering.

Decorative shapes can include corbelling – the slight projection of different rows of bricks - or perhaps a clay chimney pot.

Since chimneys are exposed to the elements on all four of their sides, the masonry will deteriorate faster than other surfaces and parts of a building, necessitating regular maintenance and repair.

Not all chimneys are important, though. Some are added to the side of a building when a later boiler or furnace was installed. These are not important to retain and can be removed.



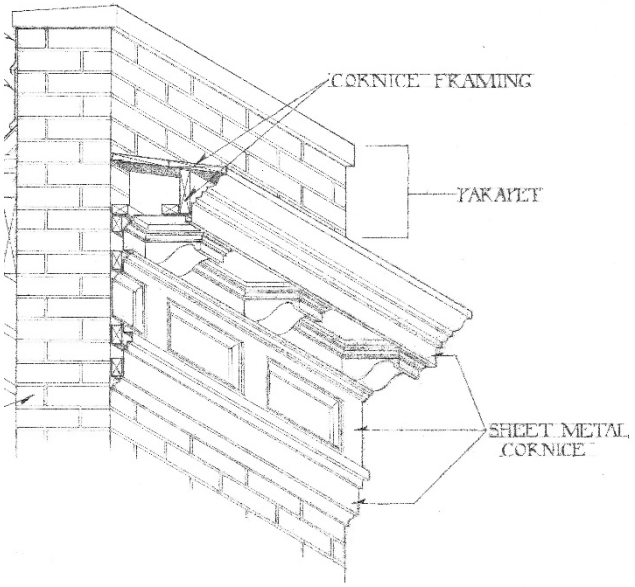
Tuckpoint a chimney as soon as mortar joints begin to show evidence of deterioration.

Cover a roof during masonry repairs to avoid damaging the covering.

Keep flashings around a chimney/roof connection watertight.

CORNICES AND PARAPETS

Cornices are the decorative overhangs at the top of a storefront or building. They are features that define the architectural look of a historic building and should be preserved. Traditionally cornices are made of pressed metal secured to a wood frame that is attached to the building. Cornices can also be made from the materials of the building itself such as a projecting brick, stone, terra cotta and, on older buildings, can even be wood. These caps to commercial building facades work together along the street to provide a repetition that builds the character of the district and the visual continuity of the block.

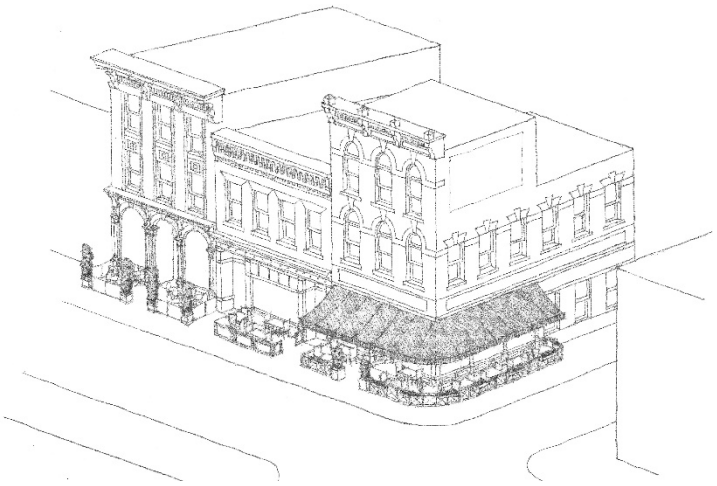


The National Main Street Center offers the following guidance on cornices here.

Best Practices:

If your building has lost its cornice – removed entirely or stripped of some of the details, then consider restoring it. Spend some time looking for historic images of your building or the downtown to gain a glimpse of what may have been in place originally. Absent direct evidence look for examples on similar-age buildings and design guides as you will find links to below.

Budget constraints may limit the ability to replicate a missing cornice. In that situation, a simplified interpretation may be appropriate if evidence of the original is not available, or incomplete. Removing or replacing an original cornice with an alternative material is discouraged, replacing with synthetic materials such as vinyl and fiberglass deemed inappropriate. Keep your metal or wood cornice painted and maintain mortar joints on masonry cornices. Inspect the cornices on the roof side to ensure that water is kept out. Water that gets behind the cornice will lead to failure.



DOORS AND ENTRANCES

Historic doors come in a variety of shapes and configurations. They may have glass or be solid with panels. Some are single, while others get paired for a wider opening. Primary entrance doors provide the focus for the entrance, while secondary doors will be of lesser importance visually, such as those to a second floor or side entrance.

Doors are a character-defining feature of a historic building and should be preserved if they are not deteriorated beyond repair. Rather than replace a door for energy efficiency improvements undertake less expensive weather stripping and repair.

There are several makers of wood epoxy that can be used for repair. One example can be found here along with a video showing how wood can be repaired – here.

The National Main Street Center provides a good overview of historic doors here.

The National Park Service offers the following information on doors and entrances:
Adding New Entrances
Advice on how to approach entrance design and restoration
Advice on when you need to replace your doors and entrances
Add a new vehicle entrance

Best Practices:

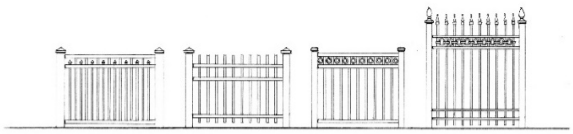
Residential and commercial doors generally have a much different character and appearance. Use the proper type of door for the type of building.

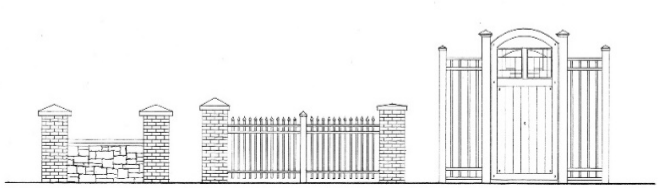
Don't shrink an opening to insert a smaller size door.

Keep exterior doors and associated trim painted to prevent deterioration. Double-check caulking and other sealants.

FENCES AND RETAINING WALLS

While fences are said to make good neighbors, their design is an important consideration for a historic site or district. Retaining walls, fences and site walls are typically associated with residential contexts; however, they are sometimes used to screen parking and service areas in commercial-use sites. In residential settings, retaining walls are typical features in neighbourhoods where the primary structures are elevated from the street, due to a change in topography.





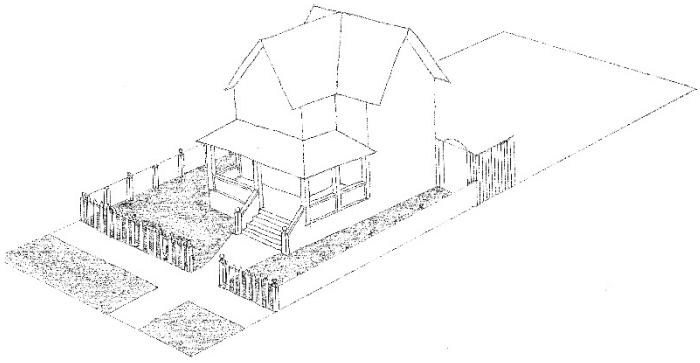
Here are some examples of fences that the Commission has pre-approved for installation with staff review and approval.

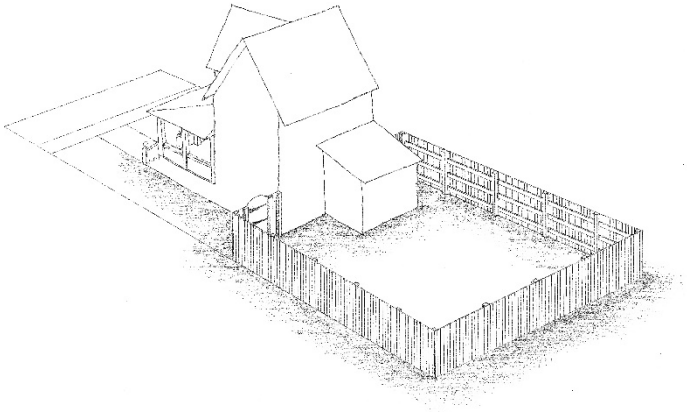
Best Practices:

Fences in front yards are not common and generally not approved.

Front yard fences should be short (3' or less) and open – picket, wrought iron, etc.

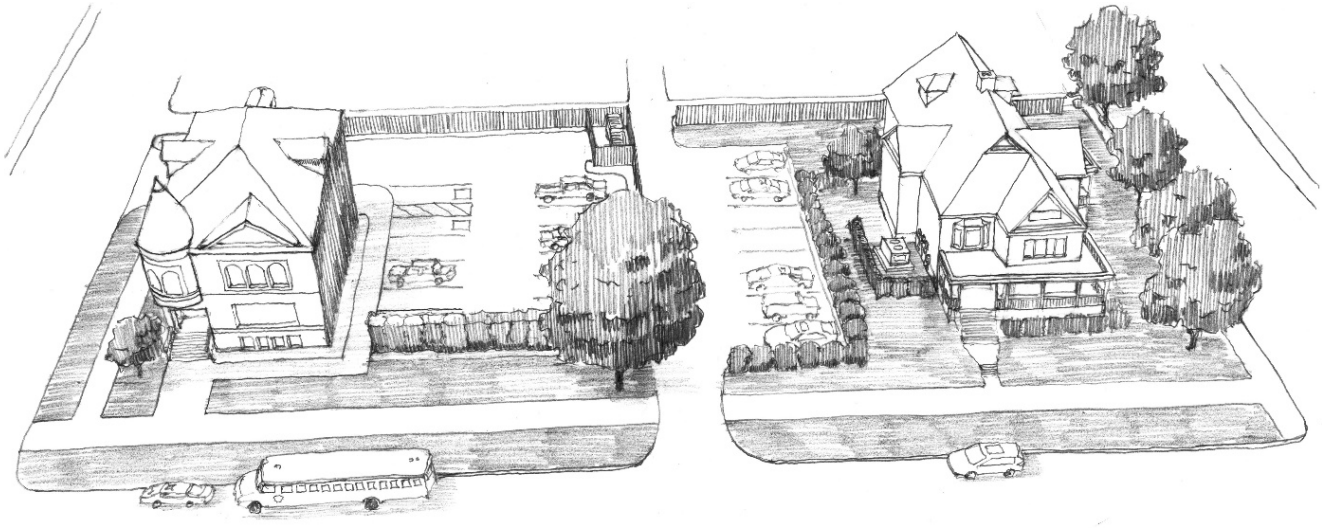
Traditional materials such as wood, wrought iron and masonry are approved for the Historic District. In some cases, aluminum fences with a traditional design can be approved. Vinyl is not an acceptable material for fences in the District.





Fences should be installed with supports facing to the yard with the finished side facing out to the public.

It is advised to consider the impact of parking and support areas like trash areas when proposing to convert a former residence for commercial use. Here are a couple of examples of how that parking could be handled. Removal of buildings to create a parking lot is not approved by the Commission. Screen parking with fences and landscaping.



FOUNDATIONS

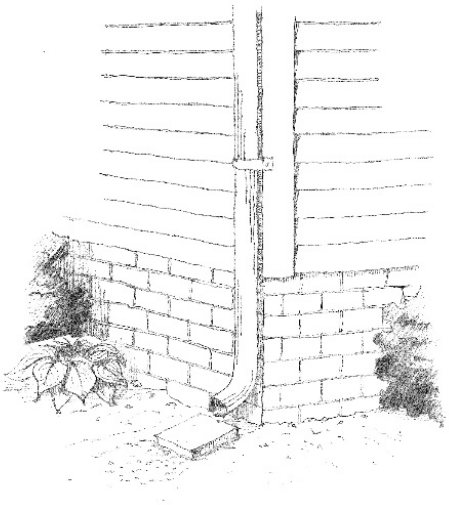
Many building foundations contribute to the character of a historic property. These may include rusticated stone, brick, or pressed concrete block. Keeping moisture away from the foundation is a primary objective. Common problems with foundations can often be traced to water – grading that is not directing water way from the foundation, water coming out of downspouts that is not directed way from the foundation, or water overtopping gutters and coming down along the foundation.

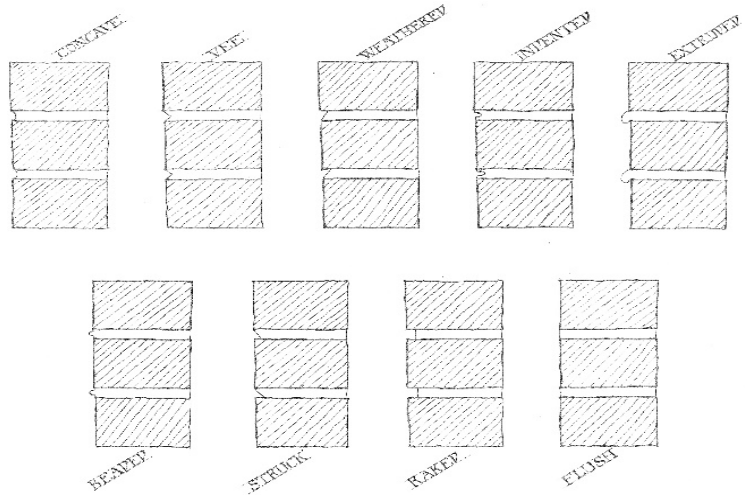
The National Park Service offers several excellent resources on the repair of masonry.
[Repointing mortar joints]
[Cleaning and sealing masonry]
[Dangers of sandblasting and other abrasive cleaning]
[Dealing with the deteriorated Masonry]

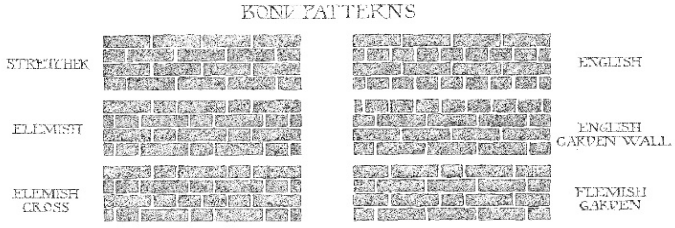
Best Practices:

There are many different types of brick and how their mortar joints were created. Match the brick but more importantly, match the type of joint that was used. Below is a graphic of the different types of mortar joints. It is also important to use the right strength of mortar – Portland cement is NOT the right mix as it is too strong for historic brick. Consult a local masonry supply store to obtain the correct mortar and advise any contractor proposing work to ensure they are using the correct material.

It is not recommended coating the foundation with stucco or other materials – they can trap moisture and cause damage. Maintain foundation by diverting water with well-maintained gutters and downspouts





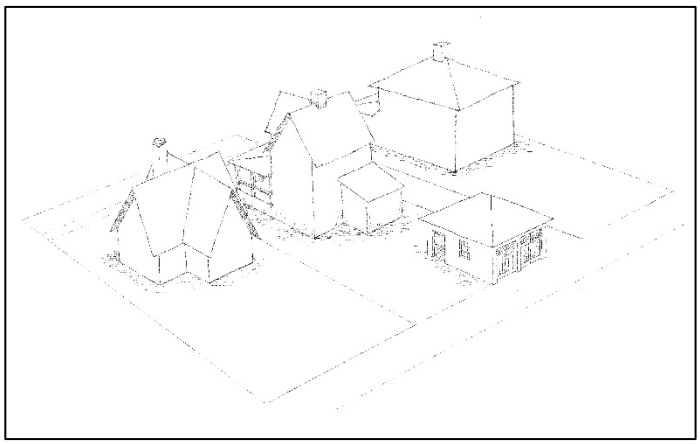


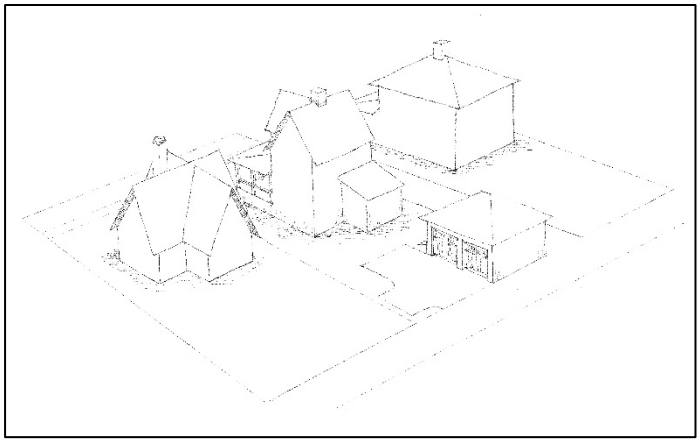
SITES, GARAGE, LANDSCAPING, SIDEWALKS, PATHS

Beyond the primary building on a site, many properties contain other historic elements such as garages, sheds, landscaping, and sidewalks that work together to give the site its look and feel. Although not every garage, shed or other building in the yard building is considered important, many are, so consideration of their place in the history of the site should be undertaken when planning a project. When working on a historic ancillary building – refer to the appropriate sections on walls, roofs, masonry for best practices when working on those parts of the building.

Garages

- Garages are secondary structures – they should not compete in size or height with primary structure.
- Historic garages often have vehicle doors that are too small for modern cars. Rather than demolishing the entire garage, consider widening the doors to allow for a larger car.
- If the vehicle doors face the alley and pose a problem for entering and existing, then consider moving to doors to a side wall and then covering over the original opening as shown below.





Sheds and other Small Structures

Small modern structures can be functional and increase enjoyment of the property but can also affect the historic setting. Small structures are generally less than 100 square feet, such as tool/garden sheds, playhouses, dog houses, and gazebos. Care should be taken in design and location to produce a suitable building:

- Locate in rear yard to minimize visibility from the main street, screen if necessary.
- If visible, structures should have walls and roof of materials similar to the main building.
- Pre-manufactured sheds that are visible from the street, especially those with metal or vinyl siding, are discouraged.

LANDSCAPING

Landscaping is a part of the District whose importance may be overlooked. But do not worry. The vision for the District is more about preserving those things that are long lived and cannot be replicated – large mature trees, spacing of tree lawns, front yards – rather than temporary things like annual plants.

Tastes change and environmentally we are more aware now of types of plants are appropriate. Be aware of what are considered invasive species. In many cases, there will be alternative plant materials that can convey the general character seen historically while meeting new standards for sustainability and invasiveness.

The area surrounding a historic building and contained within an individual parcel of land is considered the building site. The site, including all its associated historic features, contributes to the overall integrity of the property, and should be preserved. As a result, the relationship between the building and contributing features within the site's boundaries should be considered when designing improvements. All these factors are considered by the Commission when reviewing a Certificate of Appropriateness.

Plantings
Preserve traditional plant materials, when feasible. Consider reconstructing planting schemes that have historical significance. Install new landscaping that meets the requirements of the city's landscaping ordinance and that conveys the general character of the historic planting scheme when feasible. Avoid planting schemes that are out of character with the district. Avoid new planting schemes that may pose a hazard to the health of surrounding landscape features, or to public safety. Also avoid planting schemes that may contribute to the deterioration of nearby structures or streetscape features.

Trees
Preserve and maintain mature trees, replacing them when they become diseased or die. Avoid removal of mature, character-defining plantings and beds unless damaged, aged, or diseased beyond preservation. The Commission considers trees more than 12" as mature.

Exterior Lighting
Lighting can highlight a building and provide security. Some things to keep in mind- use shielded and focused light sources to prevent glare. Light fixtures should incorporate cut-off shields to direct light downward. Luminaries (lighting fixtures) should not be visible from adjacent streets or properties. Avoid excessive light spill from buildings.

Site Features
Sites that have features that contribute to its feel might include its topography, sidewalks, historic walls, and terraces. When planning work on a site, take a survey of those things that give it its look and feel. Retain the historic relationship between buildings and secondary structures, and between buildings and landscape features.

Here are some tips.

- Retaining a landscape architect familiar with historic landscapes and sites.
- When removal and replacement of an existing historic site feature is necessary (and replacement in-kind is not economically feasible) replace it with substitute materials that simulate the original in appearance.
- When it is not economically viable to save and repair an original feature or to use substitute materials that simulate the original in appearance, then new or common materials may be used.
- Devise plans for the repair, maintenance, and long-term protection of these features.
- Avoid removing or altering any site feature that contributes to the historic character of the site.

NEW CONSTRUCTION AND ADDITIONS

New construction – including adding on to historic buildings – is a vital part of a healthy real estate market in the district. Filling in empty lots where buildings once stood or replacing non-historic buildings or historic buildings that cannot be repaired is encouraged when the proposed new designs compliment the district. Additions to historic buildings help meet new uses and additional space enabling the continued use of the structure.

Much has been written about best practices when considering a new building in the district or an addition to a historic building. Rather than try to recreate existing advice below are several excellent resources to help inform your decisions.

Designs for new construction/additions should:

- Involve an architect who has experience working with historic buildings and in historic districts.
- Be reviewed by Commission staff at the beginning and during development to solicit feedback with relation the Commission's guidelines. Be proactive and not wait until plans are completed.
- When constructing an addition attach it in a way that if removed the historic building could be restored.
- Not demolish a historic building or other character defining features of the site to build a new building or addition.
- Reinforce the height, setbacks, and lot coverage.
- Have similar opening sizes and placement as found throughout the district.
- Compliment architectural designs but not be wholly duplicative. The public should be able to tell if a building is new or historic.
- Use materials found throughout the district.
- Use colors found throughout the district.

Lead Paint

Historic buildings may have lead paint – refer to the section on lead paint here to understand lead safe work practices.

Additional resources for residentially designed buildings:

National Park Service - General guidance on a new addition
Rear additions to historic houses

Old House Online – Old House Additions

Additional resources for commercially designed buildings:

National Park Service
General guidance on a new addition
Guidance for a new addition
Adding a stair tower

The National Main Street Center offers the following on new construction in commercial areas here.

PAINT

Many good resources exist to help you with developing a long-lasting paint job. Paint is meant as a protective coating for the underlying material – wearing out over time instead of the material itself. As such, regular maintenance is a key part of any long-lasting paint application. Proper preparation is a key

ingredient as well as using high quality product. Colors and their placement can make or break a successful result. Well placed colors highlight a building and its character, helping it contribute to the District's look.

A primer on a good exterior paint job can be found here.

The National Park Service offers this Preservation Brief focused on paint problems on historic woodwork - here. And offer guidance on lead paint here.

For some additional information about painting and buildings.

The following resources provide additional guidance on paint.
Old House Online – How to prepare for repainting.
How to Fix Peeling Paint
Sources on color and paint finishes

The Craftsman blog has several posts on paint here

The National Main Street Center offers the following on historic commercial building paint projects here.

Here are some cautions to help protect the materials of your historic building when preparing for a new paint job.

- Retain and renew paint coatings on historically painted wood features. Such coatings inhibit deterioration caused by ultraviolet light, moisture, and the elements. If chosen and applied with care, paint will help maintain the historic appearance of the building and its components.
- Applying waterproof coatings on masonry above the surface grade level is discouraged.
- Painting previously unpainted historic brick or stone is discouraged because the paint can cause underlying damage to the masonry by trapping water. It will also change how the building historically looked by covering the workmanship, colors, texture, masonry, and joint patterns.
- High pressure washing should not be undertaken as it drives water into the material and open joints, setting up the paint coating for future failure as the water migrates out. Hand washing with mild detergent and bristle brush with hand scraping and sanding is the recommended method of paint removal.
- Carefully use any mechanical tools. Rotary disks can leave circular marks and wires can tear into the surface.
- Blow torches are highly discouraged due to the vaporization that occurs and the high probability of causing a fire from overheated materials in the walls or underlying wood surfaces.
- Similarly, heat guns and heat plates can ignite paint or the underlying surface and materials in the wall cavity if left in one location too long. Keep moving across the surface.
- Chemical paint removers can raise the wood grain – make sure to remove promptly and protect surrounding ground and contain any runoff.

- Sandblasting should not be undertaken. The process is abrasive to the surface, wears away the protective shell of masonry and raises wood grain.
- Painting a previously painted masonry building should be completed using a “breathable” masonry paint
- Have paint samples analyzed when possible. Paint analysis can help you determine appropriate colors for repainting.
- Do not strip paint from metals that require protection from the elements. Likewise, do not paint metals like copper, stainless steel or bronze that are not meant to be coated.

Properties of Paint

Exterior Paints

Paint is one of the most common ways to protect exterior materials, particularly wood, without natural or chemical preservatives. When the painted surface has been compromised, moisture infiltrates the underlying material and potentially accelerates deterioration.

Oil and Latex Paints

There are two different types of readily available paint for a building – oil and latex. They both consist of three principal components: a pigment, a binder to adhere the pigment to a surface as the paint dries and a solvent that makes the mixture loose enough to apply with a brush. Even though latex was developed in the mid 1940’s, oil was the dominant paint type until about 1970 and is found on many historic buildings today.

Oil paint generally adheres better to problem surfaces because the oils are small enough to seep into the wood or microscopic openings in old, even chalky paint. Latex paint is less likely to peel from a building with excessive interior moisture, although multiple layers of paint can create an impermeable moisture barrier. Because of oil paint’s adhesion properties and the fact that multiple layers of latex paint form an impermeable moisture barrier, oil-based paint is recommended for exterior woodwork surfaces. Note

Stains

Exterior stains are typically applied to wood and generally fall into one of two categories, semi-transparent and opaque. Semi-transparent stain, generally known as varnish, allows some or all the wood’s color, grain, and texture to show through, and was historically limited to doors. Semi-transparent stain tends to deteriorate quickly in the elements and are generally not recommended. Historically, their use was limited to main entrance doors protected from the weather.

Opaque stain provides a consistent color finish allowing more surface texture than paint. Opaque stain appears like paint; however, a stain weathers differently than paint because it does not build up into a thick film that can peel off. Rather it slowly fades when exposed to weather conditions, particularly when exposed to direct sunlight. Because opaque stain needs to penetrate wood to bind, ideally it

should be applied to clean bare wood and limited to a small wood site element, such as a fence, gate and/or shed.

Specialty Paints

Elastomeric or Encapsulating Paint
Use of encapsulating paint is problematic because it can trap moisture in woodwork, promote rot and/or provide a desirable environment for pests such as termites. It is often referred to as "liquid siding," "liquid stucco" or "liquid ceramic coating". Use of encapsulating paint is not permitted.

Metal Paint
The paint selected must be compatible with the type of metal and existing coatings. When painting metal preparation should include the removal of rust to bare metal, cleaning the surface and quickly applying a rust-inhibiting primer to prevent corrosion.

Wood Graining
Exterior wood that appears to be stained is often wood grained, using primer and multiple layers of glazes that have been textured to imitate wood, particularly rare and costly wood. Graining was common in the 19th century and is most often applied to front entrance doors.

Maintenance of Paint

Here are a few tips for maintaining your painted surfaces to help them last longer.
- Remove deteriorated paint only to the next sound layer before applying a new paint layer.
- Coat all surfaces, including the backs, of wood repairs, including those that will be concealed, with primer. This is called "back-priming" and helps combat deterioration and wrapping caused by moisture absorption over time.
- Paint all wood porch elements. Painting protects porch elements from exposure and undue weathering.
- Reapply an appropriate paint to previously painted metal features after cleaning to avoid accelerated corrosion of the metal.
- Remove and then reinstall window and door hardware when painting.

Repainting

Since paint is designed to wear over time – it is important to regularly inspect the exterior and touch up worn areas as an on-going maintenance process. Here are some suggested steps to determine when a full repainting may be required.

1. Determine if painting is necessary: Prior to beginning a painting project, determine whether complete repainting is required, or if cleaning and/or spot repainting is more appropriate. By painting

more often than necessary, paint layers build up, increasing the potential for future paint failure. Wash with a mild detergent solution and natural bristle brush to freshen a surfaces appearance and verify whether repainting is required.

2. Inspect Existing Paint for Cause of Failure: To ensure that new paint will last as long as possible, a property owner should inspect existing paint for signs of failure. Remove damaged paint down to sound paint surface or to bare wood, sand smooth and repaint.
Some common paint failures include:

a. Wrinkling: Typically, the result of the topcoat drying before the underlying coat.

b. Peeling: Possible causes are painting under adverse conditions, inadequate surface preparation and/or moisture infiltration.

c. Blistering: After cutting into a blister, if wood is visible, the cause is likely moisture related; if paint is visible, the probable cause is that the area was painted in direct, hot sun.

d. Cracking or Crazing: Typically, the sign of a hard surface that does not expand and contract with the underlying material.

e. Alligatoring: Sever cracking and crazing.

3. Repair Causes of Failure: Before repainting all causes of paint failure should be repaired. A substantial amount of paint failure is due to moisture infiltration at the horizontal surface such as windowsill and/or stoop, and migration from the interior of a kitchen, bathroom, or laundry room through the exterior wall. Eliminate all sources of moisture and then repair all damaged wood or substrate material prior to repainting. Remediation of moisture can include repairing a gutter and/or downspout; reducing moisture migration through a wall by installing an interior dehumidifier; directing perimeter drainage away from the building foundation; and removing perimeter shrubs and other vegetation.

4. Prepare Surface: To ensure a long-lasting painted surface, appropriate surface preparation should be undertaken prior to repainting.

- Begin by washing the painted surfaces with a mild detergent solution and a natural bristle brush, then carefully scraping and sanding to a smooth finish, removing any paint that is not tightly bonded to the surface.
- Putty or caulk countersunk ails, window glazing, gaps, joints and openings.
- Allow the substrate to thoroughly dry before applying primer or paint.
- Spot-prime bare wood, areas of repair and replaced wood including unexposed and cut ends.

5. Repaint: Using high quality paint applied in accordance with the manufacturer's recommendations should improve the life of a paint job. In general, it is best to use compatible primer and paint from the same manufacturer and apply two coats of paint to previously painted bare wood.

- Apply paint during appropriate weather conditions, generally between fifty- and ninety-degrees Fahrenheit and relative humidity recommended by paint manufacturer, while avoiding direct sunlight.
- Apply finish paint soon after an oil-primer – Surface compounds affecting adhesion can form within two weeks.

Complete Paint Removal

If the existing paint has failed, it might be necessary to strip all or portions of the paint from the surface. Although there are a variety of tools and chemicals available to strip paint, many of them are potentially hazardous and can cause significant damage to historic building materials. Therefore, it is generally recommended that flaking or unbound paint be removed to sound paint, with complete paint removal only in limited cases. Complete paint removal might be necessary when the existing paint on the surface has completely or substantially failed. Examples where complete paint removal would be appropriate include:

- Where wholesale blistering or peeling of an element reveals the underlying substrate.
- Where continuous patterns of deep cracks are prevalent in the surface of painted wood.
- When windows, doors or shutters have been painted shut.
- Where a smooth transition is needed to a new wood element of a Dutchman repair.
- When deterioration of a historic building feature or material will otherwise occur.

Masonry and Stucco Painting

Previously unpainted masonry or stucco should not be painted as this can lead to accelerated deterioration of the materials and will invoke an unnecessary maintenance cycle. If the exterior of the masonry surface has been compromised through previous sandblasting, moisture infiltration or the use of harsh chemicals, appropriate painting can provide a degree of protection; however, applying stucco is typically the more appropriate option. Proper application of a water repellent paint can prevent water from penetrating while allowing water vapor to escape. Waterproof coatings or inappropriate paint can trap moisture within a masonry wall.

When repainting masonry or stucco, proper preparation is critical to a successful project and includes removal of vegetation and loose or flaking paint; maintenance of adjoining materials, such as leaking downspouts or gutters; and repointing of open joints. Finally, it is important to select a type of undercoat and paint that is appropriate for the type of masonry or surface coating on the building and apply them following manufacturer's recommendations.

Removing Paint from Masonry

When considering whether to remove paint from a masonry surface, it is important to determine whether removal is appropriate. In some instances, the building might have been meant to be painted or paint was used to hide deterioration, later changes, or additions. It might be appropriate to consider stripping paint if the existing paint has failed; the paint was applied to cover other problems such as a dirty building, or to reduce the long-term maintenance requirements associated with repainting. Caution should be used since some older paints include lead, requiring proper collection and disposal techniques.

Signs of failed paint include paint that is badly chalking, flaking or peeling, possibly due to moisture penetration. Prior to repainting, it is recommended that the cause of the moisture infiltration be repaired to minimize the potential for future peeling. It is also prudent to review whether the masonry has been "sealed" by excessive layers of paint or by waterproof coatings. The underlying masonry might not be able to "breath" and dispel the internal moisture and salts. Eventually, pressure from moisture and salts can build up under paint layers and possibly cause the paint to peel and masonry to spall. If paint is stable, complete paint stripping might not be necessary. However, new paint should be compatible with previous paint layers and the surface for best adhesion.

Paint Preparation and Removal Safety

Lead may be a component in historic paint, making paint preparation and removal potentially hazardous work. Keep children and pets clear of work area. A property owner should consult a professional for work that is unfamiliar or potentially unsafe.

- Follow all manufacturers' recommendations during the paint removal process.
- Comply with City and Environmental Protection Agency (EPA) requirements for paint preparation, removal, and work at a location where lead-based paint may be disturbed
- Use caution around paint dust from an old building as it may contain lead – Wear a respirator and safety goggles, avoid open food or beverage containers in area of paint removal, thoroughly clean exposed skin, and launder work clothes.
- Avoid using heat-tools – the user should wear appropriate clothing, keep a fire extinguisher nearby and monitor area of work for at least one hour after stopping work.

Lead Paint

Historic buildings may have lead paint – refer to the section on lead paint here to understand lead safe work practices.

PARKING LOTS AND PARKING DECKS

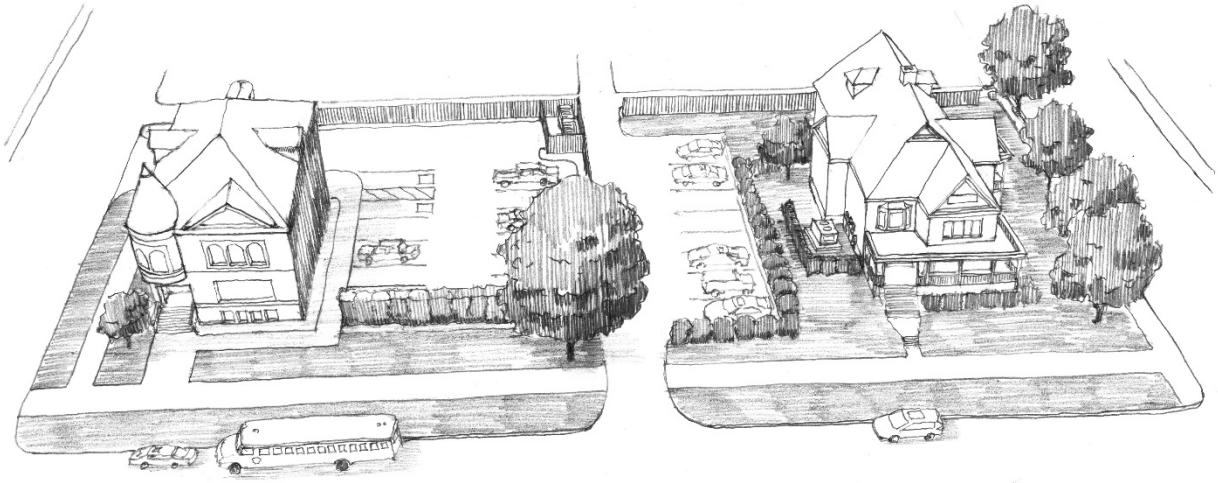
Parking, either in a residential setting or commercial use, is a necessary part of modern life. The challenge comes with incorporating that modern use in a way that balances the historic look and feel of the building and site with the design for the parking area.

Hard surfaces include those parts of the site used for parking as well as sidewalks, paths, patios, and other areas that have a high foot or vehicle traffic requiring a hard-wearing surface.

Best Practices:

- Minimize the visibility of parking areas – creating them in rear yards and installing landscaping to shield the area.

- Where possible factor in on-street parking options to minimize the need for the construction of hard surface parking areas on the site.
- Access through alleys is the preferred path to create an off-street parking area.



- Utilize existing side yards, screened where appropriate, if no rear yard is available.
- In commercially designed districts, parking lots should be created at the rear of the building or combined with other buildings for a shared lot on the interior of a block whenever possible.
- Do not demolish a building to create a parking lot.
- Concrete should be finished in a flat – not broom or another rough surface pattern.
- Gravel would be appropriate for a path or rear parking area in a residential district – but not a main entrance sidewalk or driveway.

PORCHES, DECKS, AND STOOPS

Porches have a physical purpose, providing shade for the interior of the home and a place for owners to catch a cool breeze. They also provide a public purpose – creating opportunities for owners to interact with their neighbors passing by on the sidewalk. The repetition of porches on a street is a very important part of the look and feel of a historic residential district.

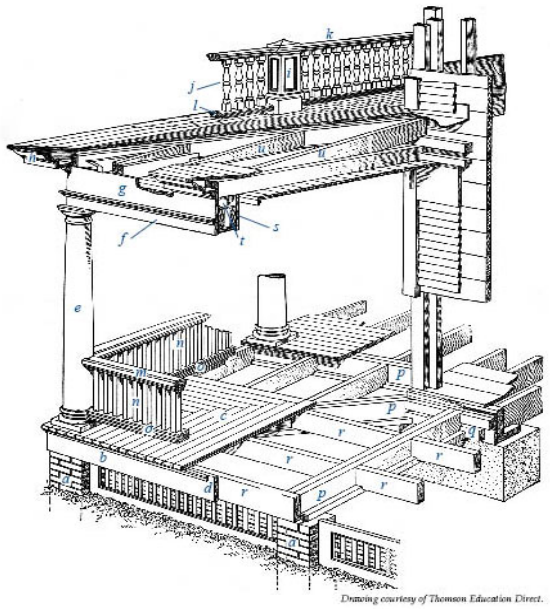
Porches can suffer from a variety of ills – from the complete enclosure of a previously open porch to replacement of original supports with newer supports that do not match the design of the house.

Original porches on a house may have been replaced since it was constructed but those "new" porches may themselves be considered an important part of the historic look of the house. As common example, a Victorian era house that originally had a wood porch may have had its posts replaced with a concrete craftsmen period support. That new porch may have been needed to replace one that had deteriorated or was completed by the owner to update the exterior to keep up with the design trends of the time.

The National Park Service offers several briefs that can help guide you about your porch - here.

For questions about painting go here.

The National Park Service has an outline about porches here.



Best Practices:

- When looking at a porch project, figure out the period of the porch (is it original or not?). Then, determine if the existing porch is considered an important part of the historic part of the look of the house.
- Preserve a porch that is considered important to the design of the house in its original form, materials, and design.
- Repair parts of a porch to match – i.e. a turned column with a turned column; a classical column with a classical column.
- When restoring an altered porch or one that has important parts removed, pay attention to:
  - Size and design of the supports.
  - Height of the baluster. Historic balusters that do not meet current code can be supplemented with a top rail rather than replaced wholesale.
  - Materials – brick or wood.
  - Decorative elements such as brackets – or the intentional lack thereof.
  - Porch floor elections – tongue and groove is the historical look but that can be achieved using traditional pine flooring or newer composite materials.
  - Do not use modern deck boards or railings for historic porches.

ROOFS

Roofs are perhaps one of the most important parts of any historic building. A building with a failed roof will soon be lost. A building, even deteriorated, with a good roof can stand for years while reuse and renovation plans are put in place. The key is to keep water from entering the building. Once the top is sound, then ensure that water directed by gutters and downspouts is directed away from the foundation.

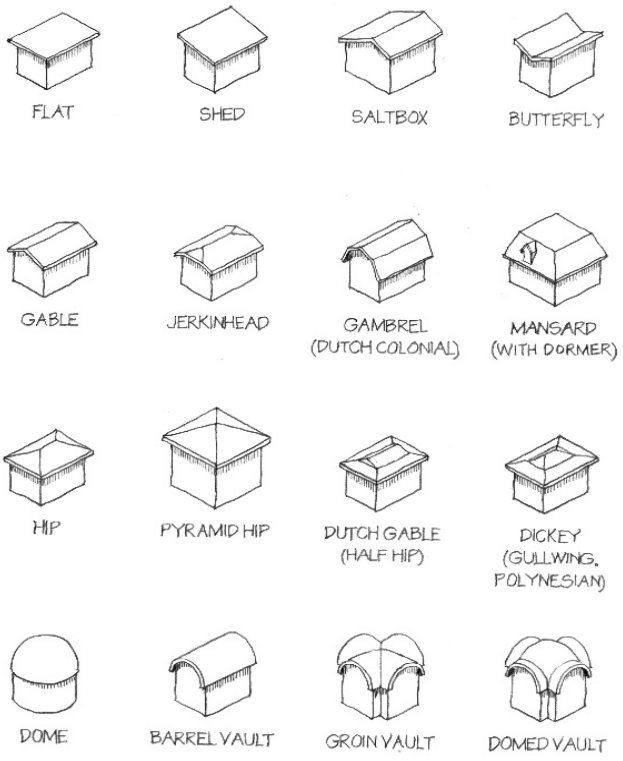
Roof form, material and details are important features that contribute to the look and design of a historic structure. Features of the roof include its shape, pitch, eave details and the covering used on the deck.

The National Park Service has several briefs about residential roofs.
An overview of roof materials general information - Here

Wide-ranging list of topics related to historic roofs – scroll to the section on "Roofing" – here.

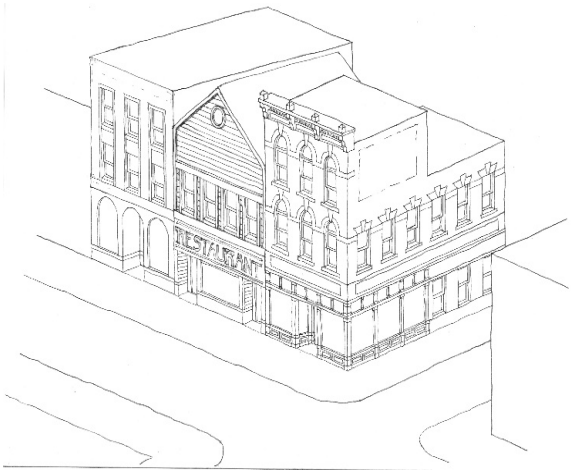
The Craftsman blog - Roofing types, inspection, replacement, gutters and care.

Old House online has several roof related posts including:
An overview of roofing and gutters
Roof types
Repair damaged soffits



Roof Form

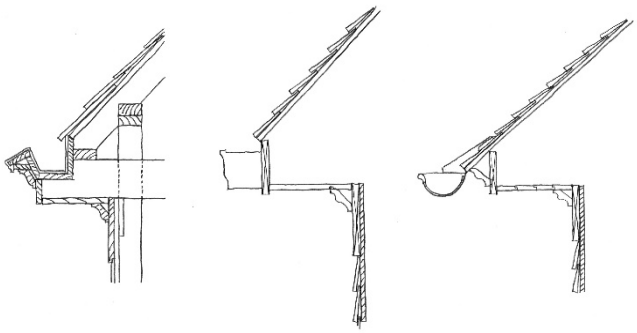
Commercially designed buildings will traditionally have a flat (low sloped) roof that is hidden behind a parapet. Water is directed to the rear of the building where gutters capture the runoff and direct it down the back wall via a downspout.



Residentially designed buildings can have a variety of roof forms – but traditionally will not be flat (low sloped).

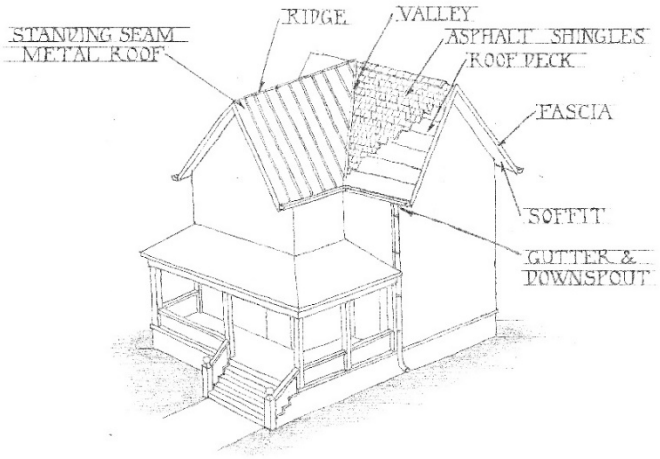
- Pay attention to valley's and flashings – these are areas of a roof that can leak.
- Retain original roofing materials such as slate, tile or standing seam roofing

Eaves Gutters and Downspouts



- Gutters come in a variety of styles. Repair or replace damaged historic gutters with new gutters to match the originals.
- Make sure there are enough hangers to support the gutter.
- Hangers should be installed with hangers fastened directly to the fascia with straps that are under the roof shingles. Exposed hangers are not a best practice installation technique as the fasteners through the shingles provide opportunities for leaks.
- Direct water away from the foundation.

Roof Materials



Materials such as slate, tile, and other unique materials not commonly found in new construction are important design elements for historic buildings.

If a slate or tile roof cannot be repaired, some asphalt materials can do a decent job giving the new roof a similar look.

While copper and lead roofs may be left unpainted, terne-metal roofs should be painted traditional roof colors.

Exposed fastener metal roofs are not approvable in the district

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SIGNAGE

A sign serves to attract attention and to convey information. Signs in commercial districts or those that are installed on a residentially designed site used commercially should be developed with the overall context of the building and of the area in mind. Historic signage that is no longer used – especially neon signs or those carved into the materials of the building are historic with the preferred path to retain.

The National Main Street Center offers good advice about the development of signage for your building here.

Best Practices:

- Determine what type of sign you want – mounted on the building, projecting, on an awning?
- Bigger does not equal better – be creative.
- One approach does not fit all – consider what will complement and enhance your specific building (and its surroundings), and your business
- Scale signs appropriately for the building – little signs are lost on multi-story buildings; oversize signs can cover windows and architectural detail.
- Plastic back-lit signs are not good options for the district.
- Murals should be reversible – do not paint previously unpainted masonry.
- Consider murals mounted on panels inserted into a frame that is attached in mortar joints – easily removable for new image or to refresh paint.
- Vinyl murals should not be applied to brick without testing to insure it can be removed without damaging brick.
- Signage colors need to be in sync with the overall color scheme of the building and the overall vision for the district.

Murals

The creation of murals on buildings within the district is a local decision. We would encourage a discussion about the nature and placement of these new artworks to form a consensus of the vision for the endeavor. When initially created such art installations can provide an interesting spark. Experience has shown though that some thought should go into longer term issues that arise.

From a best-practices standpoint we would offer the following guidance. Murals should:

- Not be painted on front facades (including those facades facing both streets of a corner building).
- Not be painted on unpainted masonry – especially on walls exposed from the demolition of an adjacent building. Those soft bricks will spall over time.
- Have an agreement in place with the building owner specifically covering:
  - Permission for the work to be installed and outlining insurance and liability coverage during initial creation and later during repainting naming owner as additional insured– see also below.
  - Who is responsible for funding and completing the on-going maintenance and future?
    - repainting of the mural itself?

- Who is responsible for paying for repair of the building if is caused by deterioration?
  - associated with the mural being placed on the building?
- Who and what factors would allow for the mural to be painted over in the future including a sign off from the artist acknowledging such rights?
- If the mural will be painted over – who is responsible for paying for that work?
- Who is responsible for maintaining the underlying building materials? While performing needed building maintenance, if the mural is damaged, what are the expectations regarding it being repainted as originally created or painted over and the funding for that work?

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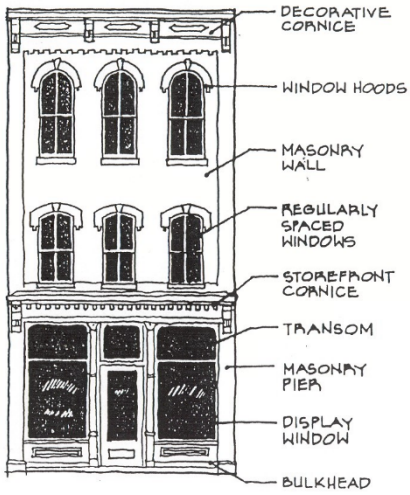
FACADES and STOREFRONTS



A good façade design works within the framework of three basic elements: the base, the middle, and the top. On a typical or traditional building these elements take the form of the storefront, the upper floors, and the cornice. The relationship of these elements to one another, to the street, to the people that walk and drive along the street, and to other buildings on the street is critical to a good façade design.

The National Main Street Center in Keeping Up Appearances offer excellent information on good Façade and Storefront Design here. And for designing new rear entrances here.

The National Park Service offers several briefs related to historic commercial buildings and storefronts.

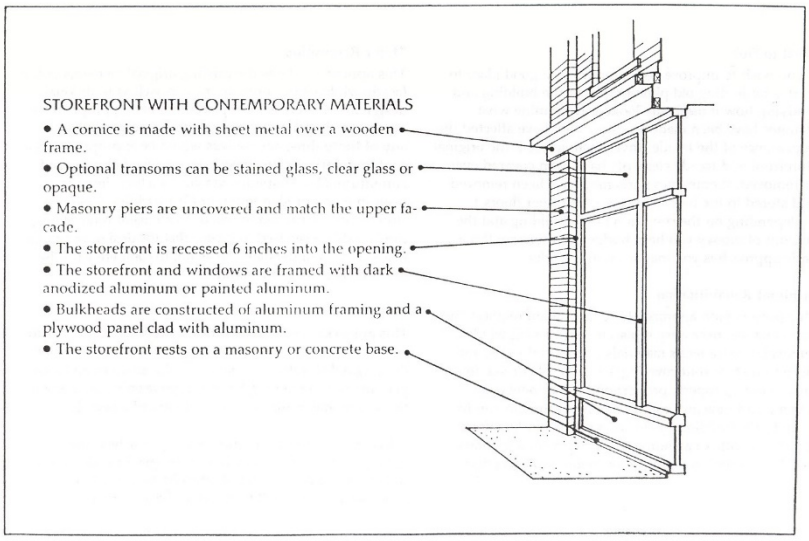
Rehabilitating a historic storefront including a historic overview – here.
Basic guidance for design of a storefront – here.
Some different options when replacing or repairing – here.
Designing a compatible new storefront – here.
Repair of storefronts with cast Iron supports or elements – here.
Storefronts with structural or pigmented glass – here.
History of, repair and reproduction of Prism glass – here.
Sidewalk vault lights – here.

The National Alliance of Preservation Commissions published this article about storefronts - here.

STOREFRONT

Storefronts can be constructed out of wood – the traditional material – or new alternate materials such as composite or aluminum. The important consideration comes in the detailing as is outlined her:

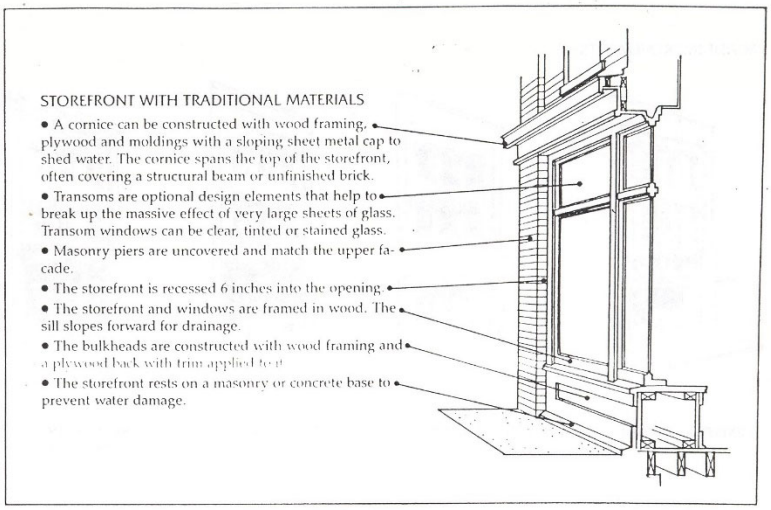
a. Storefronts should not extend beyond the plane of the façade.
b. While recessed entryways are acceptable and often desirable,



the entire storefront should generally not be recessed. This interrupts the continuity of the streetscape. However, an arcade and vertical structural elements carry the plane of the façade to the sidewalk. A storefront may be recessed when it is part of a system of covered walkways, such as a loggia.

c. Entrances should relate logically to upper floor windows and/or pedimented cornices (cornices featuring a gable). An entrance placed directly below an upper floor window or a pedimented cornice, or an entrance spaced evenly between upper floor windows is favored over an entrance randomly placed with no reference to the other elements of the façade.

d. Doors to businesses should be largely transparent and should not be residential in character.



The storefront or base provides the human scale that invites people to walk along the street and allows them to feel comfortable while doing so. Window shopping, created by the transparency of a storefront which allows direct visual access to a shop's interior, is the essence of a downtown commercial area.

STOREFRONT CORNICE/LINTEL (A)
The horizontal span located above the display window/transom and below the second-floor windows, balconies, or bays. This space may contain supporting as well as cosmetic elements

PIERS (B)
Vertical supporting members which frame the width of the building. Piers provide support for the upper story.

DISPLAY WINDOWS (C)
Area of glass which extends from the supporting bulkhead to the transom or cornice/frieze.

TRANSOM (D)
A window or horizontal series of windows located above the display windows and/or entrance doors.

KICKPLATE (E)
The space that occupies the lowest level of the storefront. The base which supports the display window.

STOREFRONT COLUMN (F)
Often decorative in nature, support for upper façade.

ENTRANCE (G)
Recessed or flush constructed area where entrance to the interior is obtained.

WINDOWS (H)
The windows of the upper floors establish a rhythm along the street, again at a human scale, and give the buildings an appearance of vitality.

WINDOW HOOD (I)
Highly decorative window lintels.

CORNICE (J)
The cornice emphasizes the height of the building, completes the building in an attractive manner and gives identity to the building at the skyline.

AWNINGS (L)
Traditional awnings shade the storefront and sidewalk from sun and rain during the warmer months. During the winter, awnings could be retracted to allow natural sunlight into the store for light and warmth. The repetition of traditional components and standard elements creates a visual unity along the street that should be preserved. These features should not be altered, obscured, or removed. The preservation of a historic storefront will help maintain the interest of the street to pedestrians by providing views to goods and activities inside first floor windows.

WALLS

Walls on historic buildings are made of a variety of materials. These materials provide a weather tight exterior covering and protect its structural system. Wall covering (or cladding) is one of the top things that give a building its historic look. Care must be taken when considering a repair or replacement.

Early to Mid 1800s

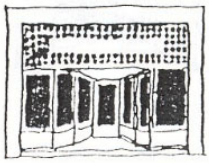
- POST AND BEAM FRAME
- DIVIDED DISPLAY WINDOWS
- SIMPLE DECORATION

Mid to Late 1800s

- BOLDLY DECORATED CORNICE
- CAST IRON COLUMNS
- LARGE DISPLAY WINDOWS

Late 1800s to Early 1900s

- SIMPLE CORNICE
- TRANSOM WINDOWS
- RECESSED ENTRANCE



Early 1900s to 1930s

- METAL WINDOW FRAMES
- STRUCTURAL GLASS
- RECESSED ENTRANCE

There is a great amount of information on best practices for the repair and preservation of historic walls. The most common things that owners should be aware of:

- "Wood grain" artificial siding does not replicate real wood siding.
- Mortar needs to be softer than the surrounding masonry.
- Re-point with same color, texture, and joint size and profile.
- Do not use high pressure power washing or muriatic acid for cleaning brick.
- Do not paint surfaces that were not originally painted.
- Rolled asphalt roofing should not be used as siding.
- Do not use T1-11 type sheet siding for a finish exterior wall.

Here are some on-line resources for walls on historic buildings:

The National Park Service has several briefs on masonry walls and their cladding.
Repointing Mortar Joints – here.
Substitute Materials: Replacing Deteriorated Serpentine Stone with Pre-Cast Concrete – here.
Stabilization and Repair of a Historic **Terra Cotta Cornice** – here.
Water Soak **Cleaning of Limestone** – here.
Non-destructive **Evaluation Techniques** for Masonry Construction – here.
Treatment Guidelines - an extensive list of topics – here.

The Craftsman Blog - brick spalling, wood siding, mortar, asbestos siding, trim, Hardie plank – here.

The Old House Journal on-line:

Repairing lap and other wood siding – here.
Repairing brick and mortar – here.
Lap siding guide – here.
A guide to exterior building materials – here.

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MASONRY

Exterior masonry includes stone, brick, terracotta, cast stone, stucco, and concrete masonry units. Historically, a building's exterior masonry surface serves both visual and functional purposes. Visually it is an important design feature that establishes the rhythm and scale, mass and proportion of a building. Historic masonry acts as an important design feature, helping to define a building's architectural style. It adds pattern and casts shadows on wall surfaces offering depth and definition. Functionally, historic exterior masonry typically acts as the principal load bearing system for the building, as well as its "skin", shedding water and typically deflects sunlight and wind establishing a weather-tight enclosure. Masonry structures were historically constructed of either bricks or stones, stacked on top of each other. The individual units are bonded by mortar, which serves to hold the masonry units together and fill gaps between them. Historically the masonry was bearing, meaning it carried its own weight to the ground as well as the load of other building elements such as floors, walls, and roofs.

Brick

Brick is by far the most common masonry material in use throughout the United States. The color of brick can vary, but red is the most common. Other common colors include yellow (buff), orange, and brown. The strength or hardness of the brick, as well as its color is determined by the chemical and mineral composition of the clay, kiln conditions, and the firing temperature used.

Lake bricks, made from material dredged from lake bottoms, tend to be very soft and can be found on buildings and structures built during the nineteenth and very early twentieth centuries. Due to their softness, lake bricks are often, but not always, used to build walls that were then faced with a harder brick or covered in stucco. Dry pressed bricks are like lake bricks except the clay used was drier, leading to a harder brick which was common in the latter half of the nineteenth century and early twentieth century. Extruded bricks were popularized in the early twentieth century and are the hardest bricks, which are commonly used today. Very dry clay is forced through a form to create a long ribbon before being cut into individual units. With large-scale production it is easier to achieve higher quality control of the color and hardness.

Stone

Stone is a natural material which is quarried from the earth and cut according to the builder's specifications. Historically stone walls and columns were weight bearing and constructed of individual stone units bonded with mortar. This stone was often either uniformly cut limestone or irregular granite field stone. In the mid-twentieth century, stone veneers were popularized, which are thin slabs of stone, often marble, granite, or limestone "hung" on an underlying structural support system or applied to brick masonry walls.

Terracotta

Terracotta is a fired clay product like brick, which is often formed into special or irregular shapes, or is a molded product with a colored glaze applied and fired onto the material. Terracotta became popular in the late nineteenth century, as it could be mass produced quickly with a high control of quality. It can be found as an accent or trim on a brick building or is sometimes used for the entire exterior.

Cast Stone

Cast stone is a manufactured product made form ground up natural stone, which is typically molded and re-constituted using a mixture of stone and cement, often with added coloring agents.

Concrete Masonry Units (a.k.a. concrete block)

Concrete masonry units (CMUs) commonly known as concrete blocks are like bricks in that they are formed structural elements. They are made by mixing water, cement, sand, and aggregate, which is placed in forms to solidify. Like brick, they are typically stacked and bonded with mortar. They are most often laid in a running-bond pattern, and should not remain exposed in historic settings, unless of an early type with a stone textured surface, not including modern split faced block.

Mortar

Historically, mortar was composed of sand, lime and water, and possibly additives such as animal hair or oyster shells to contribute to the strength and/or color. Starting in the mid-nineteenth century, a small amount of Portland cement was added into the mix to improve the workability and hasten the setting time. In the early twentieth century, the amount of Portland cement in mortar was increased, resulting in harder mortar corresponding with the manufacturing of harder brick.

Sand is by far the largest component of mortar and defines its color, character, and texture. Since masons would use products that were readily available, sand from historic mortars tended to have weathered, rounded edges and was available in a great variety of grain sizes and shades of white, grey, yellow, and brown. Most sand available today is sieved into standard sizes. As a result, mixing sand colors and sizes might be needed to match historic mortar.

Lime and Portland Cement act as binders for the mortar. Temperature changes cause masonry units to expand when heated and contract when cold. When masonry units expand in warm temperatures, they press against the harder cement mortar and tend to spall at the edges. During colder temperatures, masonry units tend to pull away from mortar, resulting in open cracks that can allow moisture penetration.

Lime-based mortar is pliable and is more likely to compress and flex through temperature cycles. If properly installed, it should also be softer than the adjacent masonry. Because lime is slightly water-soluble, high-lime mortars can be self-healing and reseal hairline cracks. By contrast, Portland cement can be extremely hard, resistant to water movement, shrinks significantly upon setting and undergoes relatively large thermal movements. In general, high lime mortars are recommended for nearly all repointing projects at nineteenth and early twentieth century construction to ensure a good bond with original mortar and masonry.

It is possible to add a small percentage of Portland cement to a high lime mixture to improve workability and plasticity. Portland cement can generally be increased when repointing masonry of the post-World War I period and later. Portland cement is available in white or grey, and the two colors can be mixed to achieve a desired color. All masonry repointing projects should test the existing

mortar for composition before beginning work. Water needs to be clean and free of salts, harmful minerals, and acid. If not, it can break down the mortar and adjacent masonry and discolor finished surfaces.

Historic additives included oyster shells, animal hair, clay particles, etc. To duplicate the character of historic mortar, it might be necessary to include additives to match the original. It should be noted that there are several types of chemical additives available today including those that increase or reduce the setting time or expand the recommended temperature installation ranges. The use of newer chemical additives is strongly discouraged unless they have been specifically tested over an extended period with similar historic materials as the proposed installation conditions.

Common Masonry Problems Defined

The two most common masonry problems are *efflorescenc*e and *spalling.* Efflorescence occurs when water-soluble salts leach out of masonry or concrete by capillary action and deposit on a surface by evaporation. Efflorescence shows up on brick as a white, powdery surface. Its existing indicates that water is coming through the building – usually from a roof or flashing leak. Efflorescence can be cleaned off brick once the water source is discovered and repaired.

Spalling is the chipping of masonry, usually referring to the whole or partial face popping off. Spalling is a permanent damage to the masonry material. It can be a sign of improper mortar, water infiltration or previous cleaning that damaged the masonry unit. The damaged unit must be replaced.

Typical Masonry Problems

It is important to identify masonry problems early to minimize damage. This is particularly true of masonry that is exposed to moisture. Once water is permitted to penetrate a masonry wall, the rate of deterioration accelerates very quickly, becoming more severe and costly. The following examples include some typical masonry problems and their possible repairs. Specific conditions might require professional evaluation by an architect or engineer familiar with historic masonry, particularly to assess settlement issues.

Deterioration of Bricks and Mortar in Walls – the surface of the bricks appear to be “melting” suggesting that they are a soft or lake brick. The mortar between the bricks is also eroding, increasing the potential for moisture infiltration.

Recommendation – Replace missing or heavily eroded brick. Repoint open joints with compatible mortar, as soon as possible, to minimize storm water entering the wall. Verify that the ground is sloping down away from the building and storm water is not pooling next to the foundation.

Open joints at brick columns and piers – The mortar is missing in the brick column or pier joints. This may be an indication of settlement or movement in the building overall.

Recommendation – Review the wall structure above the pier to verify whether the wood structure has shifted or is bulging or misaligned in response to column or pier movement. Repoint mortar joints with compatible mortar. Inspect column or pier every three to four months to see if the joint has reopened,

which would likely suggest the movement is still occurring, and may be indicative of a larger structural problem.

Missing parapet cap/coping, and stepped cracks at walls – Part of the parapet cap/coping is missing at the top of the wall and there are stepped cracks following the mortar joints that suggest building movement and moisture infiltration.

Recommendation – Review wall structure to verify whether it has sifted or is bulging in response to movement or settlement. Repoint mortar joints with compatible mortar and install new matching cap/coping at parapet to keep water from entering the top of the wall and ultimately the wall assembly. Inspect the cracks every few months to see if the joints have been reopened, which suggests the movement is still occurring and may be indicative of a larger structural problem.

Plant growth and staining at downspout – Plants begin growing in the mortar joints around the top and behind downspouts and the masonry behind and adjacent to the downspout is stained dark. Both conditions suggest the presence of moisture and saturation of the brick wall.

Recommendation – Verify that the downspout is clear and draining. Remove plant growth. Repoint open mortar joints with compatible mortar.

Disintegration of mortar from masonry surface – the mortar between bricks has deteriorated particularly at the vertical joints, increasing the potential for moisture infiltration.

Recommendation – Repoint open joints with compatible mortar as soon as possible to minimize storm water entering the wall system.

Masonry infill areas – The brick of an infill area is clearly visible. The infill area uses bricks of a different size and color than the historic bricks and is outlined by a thicker mortar joint rather than being “keyed” into the adjacent brickwork.

Recommendation – the bricks and mortar used in the infill areas should be the same size, color, texture, appearance, profile, and hardness as the adjacent Historic bricks. The repair should also be “toothed” into the adjacent brick to appear continuous with the wall surface.

Repointing Historic Masonry

Repointing work can last at least 50 years or more when completed properly. However, it can be time consuming and expensive. Repointing requires a great deal of hand labor by skilled craftsmen to remove the existing mortar without damaging adjacent masonry, achieve the appropriate mortar mix and hardness, apply the mortar, and tool it to match the historic joint style and appearance. As a result, it is generally recommended that repointing projects be limited to areas of deterioration rather than an entire building.

To achieve the best results, repointing work is best completed when the temperature ranges between forty- and ninety-degrees Fahrenheit for at least two days after the installation of the mortar to help the mortar bond to the masonry. Mortar should be placed in joints in layers of no more than 3/8” thick and allowed to harden. The final layer should be tooled to match the historic joint profile.

Matching Historic Mortar – Most pre-mixed mortar available from hardware stores is generally inappropriate for historic masonry as it contains too much Portland cement and is too hard. The most exact method of matching historic mortar is to have it analyzed by a professional lab.

Masonry Cleaning

Appropriate masonry cleaning can enhance the character and overall appearance of a building. However, improper cleaning of historic masonry can damage historic surfaces and cause more harm than good both physically and visually. Masonry cleaning methods fall within three general categories:

- Low pressure water, with the possible use of gentle detergent and brushing with a natural bristle brush
- Mechanical cleaning including sandblasting, power washing, grinding, sanding and wire brushing.
- Chemical cleaning.

Because of the potential damage to historic surfaces, cleaning should be completed only when necessary using the gentlest means possible. In many cases, soaking the masonry with low pressure water can remove much of the surface dirt and deposits. If the soaking method is not successful, it might be necessary to add a non-ionic detergent, such as dish washing detergent, or brush the wall surface with a natural bristle brush.

The use of mechanical methods, including abrasive blasting, power washing, sanding, or grinding, will remove decorative details and the protective surface of the masonry, resulting in an eroded surface and permanent damage. Abrasively cleaned masonry usually has a rougher surface that can hold additional dirt and be more difficult to clean in the future. Chemical cleaners can etch, stain, bleach or erode masonry surfaces. Both mechanical and chemical cleaning methods can destroy the protective layer, making the masonry surfaces more porous and deteriorate mortar joints, allowing for increased moisture penetration and acceleration of deterioration.

In instances where a severe stain or graffiti is present, it might be necessary to use a chemical cleaner in specific areas. Caution should be taken to test the effects of the proposed cleaner on a discrete area of the building before using it on a principle elevation. It is recommended that the most diluted possible concentration be used to minimize potential damage of the masonry surface. It should be noted that many chemical cleaners are hazardous and require special handling, collecting and appropriate disposal of the chemicals and rinse water.

Masonry Coatings

Water repellent and waterproof coatings are generally applied to prevent water from entering a masonry wall but tend to be unnecessary on weather-tight historic buildings and problematic long term. Water infiltration through masonry buildings is often caused by other moisture related problems including open mortar joints and poor or differed maintenance. In instances where the surface of the masonry has been severely compromised, such as sandblasted brick, the use of water repellent coatings might be appropriate.

Water Repellent Coatings, also referred to as “breathable” coatings, keep liquid from penetrating a surface but allow water vapor to escape. Many water repellent coatings are transparent or clear when applied but might darken or discolor over time.

Waterproof Coatings seal surfaces and prevent water and vapor from permeating the surface. Generally, waterproof coatings are opaque or pigmented and some include bituminous coatings and some elastomeric coatings and paint. Waterproof coatings can trap moisture inside of a wall and can intensify damage. Trapped moisture can freeze, expand, and spall masonry surfaces.

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WOOD SIDING AND TRIM

Siding

Photographically document architectural features that are slated for reconstruction prior to the removal of any historic fabric. Consider using contemporary wood siding, which conveys the visual appearance of historic siding, when replacement of such materials is required, and will manage moisture in a similar way the historic siding material.

Orient all replacement siding horizontally, unless there is a sound, historic documentation for a different original orientation. If synthetic materials (vinyl or aluminum) siding can be installed, it must match the dimensions of the original siding. Generally, smooth faced, narrow profile siding (3” or 4” depending on the character of the existing siding) is acceptable.

Wherever possible without causing damage to historic fabric, trim, such as corner boards, should project slightly beyond the new siding. If vinyl or aluminum siding is allowed, it must be ventilated to prevent deterioration of the wood siding and wall structure behind. Installation of insulation with a proper vapor barrier should be done from the interior.

Do not replace missing wood features with conjectural or falsely historic reconstructions or with newly designed elements that are incompatible with the building’s size, scale, material, or color. Do not use textured plywood (T-111) vertical siding. This is not an appropriate substitute material. Do not install artificial stone, asbestos singles, or asphalt shingles over or as a replacement for exterior siding. Vinyl or aluminum siding on historic buildings is inappropriate. Retention of exposed original wood siding is always preferred. Do not obscure or damage historic ornament, or decoration, such as fish scale shingles, windows casings, sills, hoods, brackets, or corner boards when installing new siding is applied. Do not remove exterior siding to install insulation within the exterior siding to install insulation within the exterior wall of historic wood frame construction. This can result in damage to historic fabric and will lead to paint failure on the exterior as well.

Trim Boards, Corner Elements, and Cornices

If synthetic materials siding can be installed, it must match the dimensions of the original trim and corner boards. Wherever possible without causing damage to historic fabric, trim, such as corner boards, should project slightly beyond the new siding.

Opening Frames

All historic window and door frames, trim, hoods, etc. shall pre preserved and maintained. When covering with synthetic materials, these components must either remain visible, or be covered in a way that replicates the historic trim dimensions, and profiles. Do not damage or remove these elements.

Accessories

Ensure that when conducting lead remediation, that all work complies with local, state, and federal standards. Paint encapsulation is an accepted means of remediation and is the preferred treatment for historic properties over removal or covering with synthetic materials.

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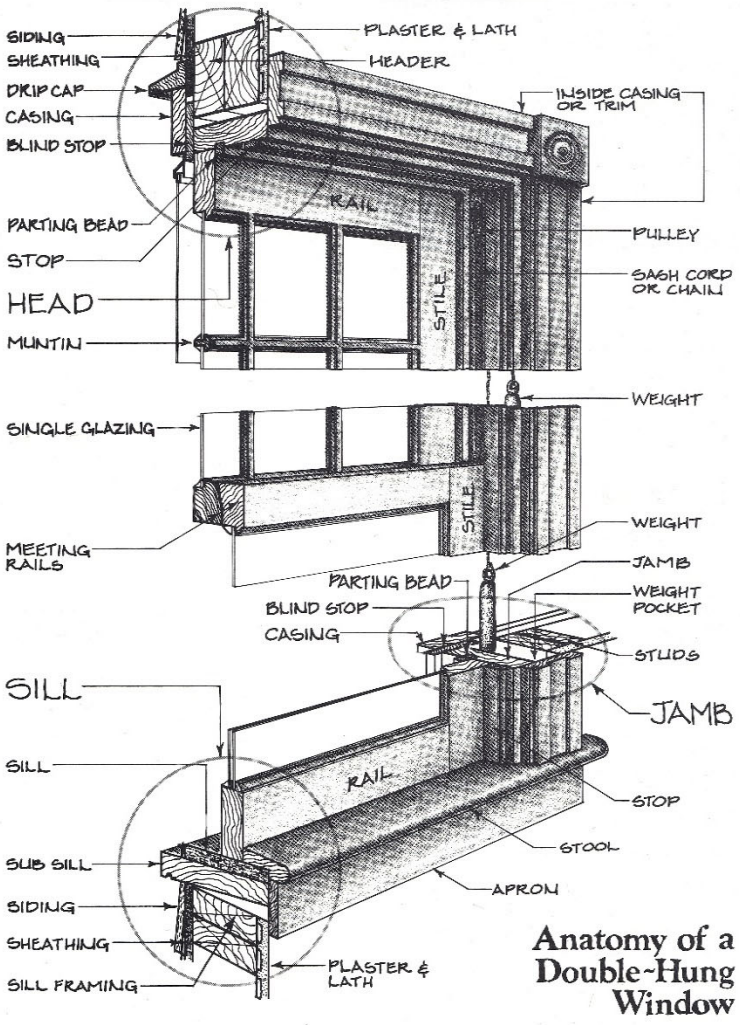
WINDOWS

The character defining features of a historic window and its distinct materials and placement should be preserved. In addition, a new window should be in character with the historic building. Repairing, weather stripping, and/or insulating (perimeter cavities) a window is more energy efficient, less expensive, and less destructive to the integrity and value of a property than appropriate replacement measures. This is especially important as historic windows are one of the primary areas to define the structure's character.



There are many excellent resources to help guide your window project.

For a series of videos about why to preserve your historic windows go here. For a series of step by step videos on how to rehabilitate your historic wood windows go here.

Here are some additional resources:

The National Park Service has several Preservation Briefs about historic windows:

Evaluating the energy efficiency - retrofit and replacement
Evaluating historic windows for repair or replacement
- Repairing historic wood windows
- Repairing historic steel windows
- Stained and leaded glass windows
- Case study on wood framed stained glass window project
- Guide for documentation for proposed new windows
- Guidelines for selecting replacement windows when originals can't be repaired
- Case study looking at different window solutions
- Adding new window openings to a historic building
- Case study about adding interior storms
- Adding insulating glass to steel frame windows

The Craftsman blog has a number of good posts about historic windows - here

The Environmental Protection Agency has a page devoted to the inherent benefits of historic homes and their windows – here.

Old House Journal Online has a post on how to restore historic windows – here.

The following are some general recommendations and best practices related to the preservation of historic windows.

- Historic wood windows can be repaired (and vinyl ones cannot).
- Repairing your historic wood windows typically is the wisest decision both economically and environmentally.
- Storm windows are recommended, not discouraged.
- Storm window divisions or muntins should match those of the window behind it.
- The payback on energy savings for replacement windows is typically measured in decades.
- If windows must be replaced, use the same style, size, and glass-to-frame ratio as existing.
- Do not increase or decrease the size of an original window.
- Shutters should always be of a size and shape so that, if closed, they would exactly cover the window opening.
- Repair of historic windows is recommended over replacement. The Commission will require evidence that the existing windows are beyond repair – defined as over 50% of the materials requiring replacement as part of the repair.
- If replacement is required, then the new windows should look the same as the original windows.
- The Commission has several pre-approved window systems for consideration when replacing unrepairable windows.
- Select windows that match the historic sash dimension, muntin configuration, reveal depths, glass-to-frame ratios, glazing patterns, frame dimensions, trim profiles, and decorative features when repair of original windows is impossible.
- Original openings should never be blocked-in to accommodate stock windows. Do not install contemporary picture, glass block, or jalousie windows in exterior window openings. Do not install synthetic replacement windows (vinyl, fiberglass, etc.).
- Install replacement windows that operate in the same way as the original windows-double hung windows are replaced with double-hung, and casement windows are replaced with casements.
- Do not replace multi-pane windows that have true divided lites with thermal glazing windows that have false “snap-in” or applied muntins and mullions. Do not apply reflective or insulating film to the historic window glass. Do not use smoked, tinted, or reflective glass on building facades that can be seen from the public way. Do not block-in or back paint

More specifically, the following sections discuss different aspects of a window or storm.

Lite Patterns

When replacing original windows, the replacement should match the number, placement, and general appearance of the existing with regards to the number of glass panes. When replacing replacement windows, the new windows should match the number, placement, and general appearance of the original windows with regards to the number of glass panes when evidence of the historic condition is available. Leaded and Stained-Glass panels shall be retained and repaired whenever possible. When beyond repair, the glass shall be retained and secured within a new frame and installed as appropriate in correlation with the repair or replacement of the original window. Where true divided lites were used historically, using them in replacement windows is preferred; alternatives, such as Snap-on muntin's applied to the exterior may be considered on secondary elevations. Using strips of material inserted between double-glazing panes or only on the interior of the window are not appropriate.

Frames and Trim

Match as closely as possible, the profile of the sash and its components to those of the original. A historic, often wood, window has a complex profile. Within the windows casing, the sash steps back to the plane of the glazing (glass) in several increments. These increments, which individually only measure eights or quarter inches, are important details. They distinguish the actual window from the surrounding wall surface. When replacing original windows, the frame width of the perimeter and of each sash or leaf shall not be altered, specifically when replacement windows fit within the frames of old windows and create a wider perimeter frame. The glazing areas of each window shall not be reduced, and exterior trim elements shall be retained, or restored in order to retain the relationship between the window and the surrounding wall surface.

Storm Windows and Screens

Install storm windows on the interior, when feasible. This will allow the character of the original window to be seen from the public way. If a storm is to be installed on the exterior, match the sash design of the original windows. It should fit tightly within the window opening without the need for sub-frames or panning around the perimeter. Match the color or the storm window sash with the color of the window frame; do not use an anodized or a milled (silvery metallic) finish. Historic wood storm windows are the most appropriate, especially when they have screen counterparts. Use an insect screen to enhance energy conservation and ventilation. Fit the screen to match the historic window shape and character. Half screen units that cover only the lower sash opening are acceptable. When storm windows are used for the main house, they shall also be required on basement and attic windows to maintain uniformity. Vinyl, or composite materials for storm windows is not appropriate when seen from the exterior. Storm windows which project beyond the frame of the window opening or wall plane are inappropriate.

Stutters

Historic shutters contribute to the character of a property and also offer opportunities for energy conservation. They provide shading and cooling during summer months and protection to windows during storms. Window awnings and shutters are appropriate in limited circumstances. They are only appropriate on specific architectural styles, which may also determine the appropriateness of double or single shutters per opening. Operable shutters are preferred. This helps support sustainability and authenticity objectives. New shutters should match the opening that they frame in size and shape. If

shutters are missing, use historical documentation, or examples from properties of similar period and style to assure authenticity. Vinyl, composite materials, and non-operable shutters are inappropriate.

Blocked Openings

Preserve the size and proportion of a historic window opening. Reducing an original opening to accommodate a smaller window or increasing it to receive a larger window is inappropriate. Preserve a distinctive window opening shape, for example arched tops, or oval shapes. Enclosing a historic window opening is inappropriate, as is adding a new window opening. This is especially important as the historic ration of solid to void is a character defining feature. Significantly increasing the amount of glass on a primary or character defining elevation will negatively affect the integrity of the structure. Adjustment of openings only for the purposes of change of use many be considered on secondary elevations. Greater flexibility in installing new windows or blocking openings may be considered on the sides and rear of the buildings.

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HAZERDOUS MATERIALS

What are Hazardous Materials

Building repair and maintenance can potentially be dangerous work. It is recommended that all manufacturers' recommendations be followed and appropriate safety precautions with ladders, tools, materials, and processes be taken. Property owners should consult a professional for work that is unfamiliar or potentially unsafe.

Older buildings can contain dangerous materials such as asbestos, lead and mold that might be uncovered during work. Property owners should hire licensed professionals and familiarize themselves with these materials and their building's conditions before beginning work.

Asbestos

Asbestos is a naturally occurring fibrous crystalline mineral which is an excellent electrical insulator and is highly heat-resistant, making it an ideal building material and insulator. However due to its fibrous nature, it is today a well-known health and safety hazard and the use of asbestos as a building material is deemed illegal in many countries. The inhalation of asbestos fibers can lead to various lung and respiratory conditions. Exposure to asbestos in the form of fibers is always considered dangerous. Working with, or exposure to, material that is friable, or materials or work that could cause the release of loose asbestos fibers, is considered high risk. In general, people who become ill from inhaling asbestos have been regularly exposed in a job where they worked directly with the material.

Asbestos is generally thought to be contained in most buildings constructed before 1980, with the most common uses including: insulation, pipe wrap, plaster and drywall, fireproofing materials, fiber cement materials, roofing and siding materials, and vinyl floor tiles. Today asbestos has been largely replaced in building construction with materials including fiberglass, mineral wool, and other organic and synthetic fibers.

In good stable condition these materials generally will not cause undue health concerns, however if they become damaged, or develop friable edges, they should be addressed via encapsulation or remediation. Property owners are responsible for ensuring that all asbestos removal and disposal is handled in accordance with all applicable regulations and procedures. It is recommended that all asbestos related work be undertaken by a licensed contractor.

US Environmental Protection Agency Hotline
(800)-368-5888 www.epa.gov/asbestos
Toxic Substances Control Act (TSCA) Assistance Information Service
(202)- 554-1404 tsca-hotline@epa.gov

For some additional information about Asbestos in buildings consider the following resources:
Old House Online – The Lead and Asbestos Law
Asbestos.com – About Asbestos
The Craftsman Blog – Dangers Hiding in Your Old House
How to deal with asbestos
The Architect Magazine – Understanding asbestos use in 20th Century Materials

Lead

Lead is a heavy metal which is soft and malleable. It was commonly used in a variety of capacities in building construction until the 1970's when it was largely phased out of use, though some uses remain, such as leaded glass. Traditionally, lead was commonly used for drainpipes, roofing, gutters, and as a key ingredient in paint and other coating products. It is generally accepted that any building built before 1980 will likely contain lead products.

In historic structures the number one lead related hazard is old paint and other similar types of coatings. Lead abatement is commonly conducted with two different approaches: complete removal and encapsulation. When removal of the lead is undertaken it either requires blasting the layers of coatings from the sub-straight material, or complete removal of the sub-straight material as well. This approach is not recommended when working with historic properties.

More often encapsulation is the recommended form of lead abatement. Unlike asbestos or other similar hazardous materials often produced in the form of boards or shingles, lead paint is a coating on a board or shingle type material. This means that encapsulation with new paint will adhere the new paint to the old and create a protective film on the exposed surface.
National Lead Information Center
(800)-424-LEAD www.epa.gov/lead
Toxic Substances Control Act (TSCA) Assistance Information Service
(202)- 554-1404 tsca-hotline@epa.gov

For some additional information about Lead in buildings consider the following resources:
Old House Online – Repairs and How to – lead asbestos law
Paint Removal and Stripping
Preservation Science – Addressing Lead Hazards in Historic Buildings
The Craftsman Blog - 5 Dangers hiding in your old house
Lead paint the whole story
How to lead safe work practices
Oldhouse online - Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing

Mold

Mold is a multicellular fungus which enables the biodegradation of natural materials. Mold growth in buildings generally occurs when moisture levels are high and can often be an indication of larger moisture infiltration issues. Eliminating the moisture source is the first step at fungal remediation. Removal of affected materials may also be necessary for remediation if materials are easily replaceable and not part of the load bearing structure or contribute to the historic integrity of the property. Professional drying of concealed wall cavities and enclosed spaces such as cabinet toe kick spaces may be required. Post-remediation verification of moisture content and fungal growth is required for successful remediation. Many contractors perform post-remediation verification themselves, but property owners may benefit from independent verification. The Environmentally Protection (EPA) agency currently recommends for the relative indoor humidity to be below 60% and ideally between 30% and 50% to inhibit mold growth.

Indoor Air Quality Information clearinghouse
(800)-438-4318 https://www.epa.gov/mold

For some additional information about Mold in buildings consider the following resources:
Old House On-line – Mitigating mold
National Trust for Historic Preservation – Tips for mold
The Craftsman Blog – Mold and Mildew removal

Radon

Radon is a naturally occurring radioactive gas that is colorless, odorless, tasteless, and can cause lung cancer. Some level of radon will be found in all buildings. It typically enters a structure directly from the soil through the lowest level in the building that is in contact with the ground. Entry points of radon into buildings are cracks in solid foundations and walls, construction joints, gaps in suspended floors and around service pipes, cavities inside walls, and crawlspaces and basements where the floor is exposed earth.

Radon concentrations in the same location may differ by a factor of two over a period of an hour, and the concentration in one room may be significantly different from the concentration of an adjacent room. The soil characteristics are the most important source of radon for the basement and/or ground floor. Since radon is colorless and odorless the only way to determine its presence in the air is to perform tests. Radon test kits are available to the public at retail and hardware stores for home use. Licensed professionals may also perform testing and are required for radon mitigation if radon is present.

The primary method of reducing radon is to install a vent pipe system and fan, which pulls radon from beneath the house and vents it to the outside, often through the roof. This method is also called sub-slab depressurization, active soil depressurization, or soil suction. This method is usually paired with sealing all cracks, voids, and other potential entry locations in foundations and basement floor slabs.

Indoor Air Quality Information Center
(800)-438-4318 https://www.epa.gov/radon

Fiberglass

Fiberglass is a common type of fiber-reinforced plastic using glass fibers. The fibers may be randomly arranged, flattened into a sheet, or woven into a fabric. Cheaper and more flexible than carbon fiber, it is stronger than many metals by weight, is non-magnetic, non-conductive, can be molded into complex shapes, and is chemically inert. Common uses include tub and shower enclosures, swimming pools, roofing, pipes, exterior siding and cladding, exterior doors, and insulation.

Fiberglass materials, for example batt insulation, when handled directly will cause irritation of the eyes, skin, throat, and the respiratory system. Scientific evidence demonstrates that fiberglass is safe to manufacture, install and use when recommended work practices are followed to reduce temporary medical irritation. These work practices include the use of eye protection, face masks, gloves, long

sleeved shirts, and long pants for full body protection. Fiberglass insulation should never be left exposed in occupied areas, according to the American Lung Association. Fiberglass used in home and building insulation and for non-insulation products are not considered to be inherently harmful or carcinogenic. However, the National Toxicology Program does consider fibrous glass dust to be a reasonably anticipated carcinogen.

For some additional information about fiberglass in buildings consider the following resources:
OldHouse Online – Updated Savvy about Insulation
Expert Advice about Insulation
The Craftsman blog – Mineral Wool vs Fiberglass Insulation
The Pitfalls of Old Home Insulation
Washington State Department of Health – Air Quality and Fiberglass

PVC'S

PVC (Polyvinyl Chloride), CPVC, and vinyl products are a family of synthetic plastic polymers. These plastic materials are commonly used in modern construction in the form of plumbing and electrical fittings, siding and cladding materials, windows and doors, and flooring and wall coverings. Generally, these materials in the form of exterior cladding, and window and doors are not recommended for historic structures due to their incompatibility with historic materials.

There are a variety of ways in which PVCs can be hazardous. The first is in release of dioxins during the production process which lead to health issues including cancers and respiratory diseases in surrounding areas of the production facilities and in the people directly involved in the production process. Degradation during service life, or after careless disposal, is a chemical change that drastically reduces the average molecular weight of the polyvinyl chloride polymer. Since the mechanical integrity of a plastic depends on its high average molecular weight, wear and tear inevitably weakens the material.

Weathering degradation of plastics results in their surface embrittlement and microcracking, yielding microparticles that continue in the environment. Also known as microplastics, these particles act like sponges and soak up persistent organic pollutants (POPs) around them. Thus, laden with high levels of POPs, the microparticles are often ingested by organisms in the biosphere. Additionally, some studies indicate that the outgassing of additives in PVCs may contribute to health complications. In 2004 a joint Swedish-Danish research team found a statistical association between allergies in children and indoor air levels of DEHP and BBzP (butyl benzyl phthalate), which is used in vinyl flooring.

For some additional information about PVC's in buildings consider these resources:
The Craftsman Blog – Is Vinyl ever a good idea?
Blue Vinyl the movie
Vinyl Siding – the Real Issues
Journal of Occupational and Environmental Medicine – Angiosarcoma of Liver in Manufacture of Polyvinyl

VOC'S

VOC's (Volatile Organic Compounds) are organic chemicals that have a high vapor pressure at ordinary room temperature. Their high vapor pressure results from a low boiling point, which causes large numbers of molecules to evaporate or sublimate from the liquid or solid form of the compound and enter the surrounding air, a trait known as volatility. For example, formaldehyde, which evaporates from paint and releases from materials like resin, has a boiling point of only -2° F.

Since many people spend much of their time indoors, long-term exposure to VOCs in the indoor environment can contribute to sick building syndrome. In offices, VOC results from new furnishings, wall coverings, and office equipment such as photocopy machines, which can off-gas VOCs into the air. Good ventilation and air-conditioning systems are helpful at reducing VOCs in the interior environment. Studies also show that relative leukemia and lymphoma can increase through prolonged exposure of VOCs in the interior environment.

Respiratory, allergic, or immune effects in infants or children are associated with man-made VOCs and other indoor or outdoor air pollutants. Some VOCs, such as styrene and limonene, can react with nitrogen oxides or with ozone to produce new oxidation products and secondary aerosols, which can cause sensory irritation symptoms, VOCs contribute to the formation of Tropospheric ozone and smog. Health effects include eye, nose, and throat irritation; headaches, loss of coordination, nausea; and damage to the liver, kidney, and central nervous system. Some organics can cause cancer in animals; some are suspected or known to cause cancer in humans.

The ability of organic chemicals to cause health effects varies greatly from those that are highly toxic, to those with no known health effects. As with other pollutants, the extent and nature of the health effect will depend on many factors including level of exposure and length of time exposed. Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics. At present, not much is known about what health effects occur from the levels of organics usually found in homes. Many organic compounds are known to cause cancer in animals; some are suspected of causing, or are known to cause, cancer in humans.

For some additional information about VOC's in buildings consider this resource:
Oldhouse on-line – Expert advice on low VOC paint

ENERGY EFFICIENCY AND HISTORIC BUILDINGS

Identify and preserve the inherent energy efficiency of a historic building and the inherent sustainable features and operating systems and maintain them in good condition. Repair or restore covered, damaged, or missing features where appropriate. Retain original operable shutters, awnings, and transoms to increase the range of conditions in which a building is comfortable without mechanical climate controls.

There are many great sources available to help you develop a plan to make your historic building more efficient while keeping its historic look.

The National Park Service has a comprehensive site including information on energy audits, air infiltration, windows and doors and insulation – here.

The National Trust for Historic Preservation has developed The Research and Policy Lab that has extensive studies and information and case studies here.

Green Features of Historic Buildings:

1.) Double-hung windows simultaneously allow cool air in and warm air out.
2.) Window arrangements with many small windows clustered together may allow for passive heating in the winter, where proper orientation occurs.
3.) A steep roof pitch and large roof area facilitate the collection of rainwater, which can be used for irrigation.
4.) Porches help moderate temperature swings.
5.) Symmetrical windows arrangements typically allow for passive cooling and cross ventilation through the home.
6.) Operable shutters can be closed to block solar heat gain in the summer while allowing cooling breezes to bass through.
7.) A stone or brick masonry exterior provides thermal mass to moderate indoor temperature swings.
8.) Fireplaces and their chimneys provide for non-mechanical heating.
9.) Substantial roof overhangs provide for seasonal shading.

Energy Performance in Historic Buildings

Improvements to enhance energy efficiency should be planned to complement the original building. The structure, form and materials should be sensitively treated to preserve the building's character.

- Use noninvasive strategies when applying weatherization improvements.
- Weather-stripping, insulation, and wood storm windows are energy efficient, cost effective, and historically sensitive approaches
- Weather-strip the original framework on windows and doors.

- Install additional insulation in an attic, basement, or crawl space as a simple method to make a significant difference in a building's energy efficiency. Provide sufficient ventilation to avoid moisture build-up in the wall cavity.
- Where applicable, install draft stoppers in a chimney. Open chimney dampeners can increase energy costs by up to 30 percent.
- Install weatherization in a way that avoids altering or damaging significant materials and their finishes.
- Use materials which are environmentally friendly and that will not interact negatively with historic building materials.
- Enhance the energy efficiency of original windows and doors.
- Make best use of the original windows; keep them in good repair and seal all leaks.
- Safeguard, retain and reuse early glass, taking special care in putty replacement. Maintain the glazing compound regularly. Remove old putty with care.
- Use operable systems to enhance the performance of original windows. This includes wood storm windows, insulated coverings, curtains, and awnings.
- Place wood storm windows internally when feasible to avoid the impact upon external appearance.
- Use wood storm window inserts designed to match the original frame if placed externally.
- Double pane glazing may be acceptable where original glazing has been lost and the frame can support the weight and profile.

Historic Residential Building Energy Efficiency Strategy

Quick simple fixes that will increase the energy efficiency of a historic building.
- Insulate attic and exterior walls from the interior with an appropriately installed vapor barrier.
- Retain and restore awnings and porches.
- Maintain original doors, add weather-stripping, and add a storm door.
- At exterior doors, consider adding and interior vestibule or airlock.
- Retain and repair roof material.
- Install draft stopper in chimneys.
- Repair and retain original or early windows with the original glass. Add storm windows to enhance thermal and acoustic efficiency and add weather stripping.
- Retain original storefront windows and framing. Add weather-stripping.
- Retain operable transoms to allow for air circulation.
- Set solar panels back from primary facades to minimize visibility from the street.
- Set wind turbines back from the primary façade to minimize visibility from the street.

Developing an Efficiency Strategy for a Historic Property

Step 1: Establish Project Goals
Develop an overall strategy and set of project goals to maximize the effectiveness of a project. This will establish a broad view that places individual actions into context. Project goals should focus on minimizing use of resources and energy, avoiding negative environmental impacts and retaining the

historic integrity of a property. Strategies should maximize the inherent value of the historic resource prior to considering alterations or retrofitting with energy generation technology. To inform a project strategy, also consider conducting an energy audit. An energy audit can give a comprehensive view of how energy is currently used in the daily and seasonal cycles of use and can also provide perspective on the payback of investment for potential work on the building. For example, an energy audit, when examined based on an overall strategy, may demonstrate that priorities should be on increasing insulation in walls, ceilings and foundations, rather than replacing windows.

Step 2: Maintain Building Components in Sound Condition
Maintaining the existing building fabric reduces negative environmental impacts. Re-using a building and maintaining its key features preserves the energy and resources invested in its construction and removes the need to produce new construction materials.

Step 3: Maximize Inherent Sustainable Qualities.
Typically, historic buildings were built with energy efficiency in mind. Construction methods focused on durability and maintenance, resulting in individual building features that can be repaired if damaged, thus minimizing the need for replacement materials.
Buildings were also built to respond to local climate conditions, integrating passive and active strategies for year-round interior climate control which increase energy efficiency. Passive strategies typically include building orientation for sun, breezes, and features such as roof overhangs and windows to provide both natural daylighting as well as management of solar heat gain. Active strategies typically include operable awnings, double-hung and transom windows.

Step 4: Enhance Building Performance.
A historic building's inherent energy efficiency can be augmented using techniques which improve efficiency without negatively impacting historic building elements. Non-invasive strategies such as increased insulation, weatherization improvements and landscaping should be considered.

Step 5: Add Energy-Generating Technologies Sensitively.
Many historic structures can accommodate the respectful integration of energy efficiency technologies. Energy-generating technologies are the most known strategies. However, the efficiency of a historic structure will often be great enough that generation technologies are not the most practical solutions. Utilize strategies to reduce energy consumption prior to undertaking an energy generation project. When integrating modern energy technology into a historic structure, maintain the resource's historic integrity and the ability to interpret its historic significance. As new technologies are tried and tested it is important that they be installed in a reversible manner such that they leave no permanent negative impacts to a historic structure.

Solar Installations on Historic Buildings

Solar installations can be done sensitively on historic buildings with some planning and thought about the panel's visibility and location. When contemplating a solar project look for a location that is not seen from the ground and not from the main public street. While every project is unique, the following resource can be helpful in planning for your solar project.

National Park Service - Technical Preservation Services page on solar panels installation

Green Roofs and Historic Buildings

Green roofs are another growing trend in sustainable building construction and renovation. The National Park Service offers a comprehensive look at installing a green roof on a historic building. It is important to consider the visual impact of a green roof on your building but also make sure to retain the property professionals to evaluate structural capacity and necessary modifications.

National Park Service – Technical Preservation Services Page on Green Roofs.

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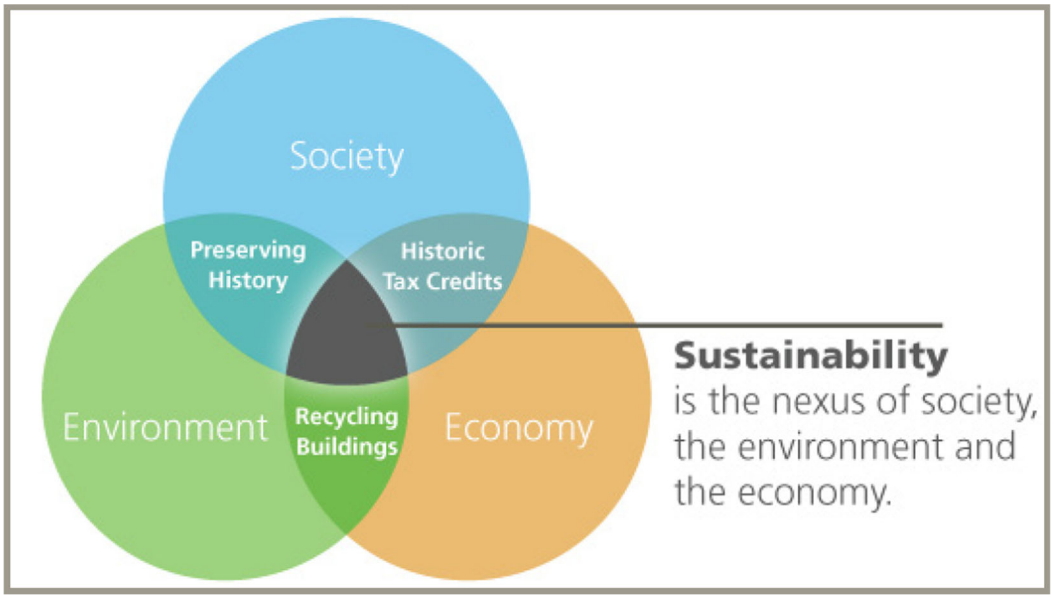
SUSTAINABILITY AND HISTORIC PRESERVATION

This section reviews sustainability from a design perspective and apply to both historic preservation and new construction of both residential and commercial buildings. At a neighborhood level, this may include ways in which buildings are designed to provide solar access to abutting properties. For individual historic buildings, it includes making the best use of inherent energy-saving features, and for all sites, considerations for use of sustainable materials, managing storm water, and a variety of technological systems. These guidelines demonstrate how historic resources can meet sustainability objectives while also adhering to policies for historic preservation. They address many design features and building components discussed in other sections of the Model Guidelines as well

Some comprehensive sites to check out related to sustainability and historic buildings include:

The Secretary of the Interior has a site devoted to sustainable rehabilitation practices dealing with all aspects of a project.
Secretary of the Interior Guidelines on Sustainability for Rehabilitating Historic Buildings



The National Park Service also offers the following guide on sustainability and historic preservation – here.

The National Main Street Center offers the following on energy conservation here.

Preserving and enhancing historic places promotes three basic components of sustainability.

1.) Cultural/Social Sustainability: Preserving historic places and patterns promotes social and cultural sustainability by supporting everyday connections between residents and the cultural heritage of the community, both tangible and intangible.

2.) Environmental Sustainability: Rehabilitation of historic and other existing resources conserves energy that is embodied in the construction of existing structures. It also reduces impacts on land fill from demolition and reduces the need to fabricate new materials, often with high levels of embodied energy.

3.) Economic Sustainability: the economic benefits of protecting historic resources include higher property values and return on investment, job creation in rehabilitation industries and increased heritage tourism.

Cultural and Social Component of Sustainability

This component relates to the maintenance of the community's cultural traditions and social fabric. Preserving historic places and patterns promotes cultural and social sustainability by supporting everyday connections between residents and the cultural heritage of the community. These connections are reinforced by the physical characteristics of historic places, which often directly support environmental sustainability. Historic properties in the downtown and historic districts provide direct links to the past. These links convey information about earlier ways of life that help build an ongoing sense of identity within the community. Residents anchored in this sense of identity may be more involved in civic activities and overall community sustainability efforts. social interaction that supports a high quality of life and helps build a sense of community. These neighborhoods are compact and walkable, providing for impromptu mixing of different cultural and economic groups. Direct connections to the public realm also provide opportunities for community interaction. These physical development patterns, combined with their inherent cultural connections, provide significant support for the community's overall sustainability efforts.

Environmental Component of Sustainability

This is the most often cited component of sustainability. It relates to maintenance of the natural environment and the systems that support human development. Rehabilitation of historic resources is an important part of environmental sustainability and green building initiatives. It directly supports environmental sustainability through conservation of embodied energy, adaptability, and other factors that keep historic buildings in use over long periods of time. Historic districts are also compact and are accessible by alternative modes of transportation that minimize carbon emissions.

Embodied Energy in Building

Embodied energy is defined as the amount of energy required to create and maintain the original building and its components. Preserving a historic structure retains this energy. Re-using a building also preserves the energy and resources invested in its construction, and reduces the need for producing new construction materials, which require more energy to produce. Studies confirm that the loss of embodied energy by demolition takes three decades or more to recoup, even with the reduced operating energy costs that may occur in a replacement building. Also, restoring an original building is sustainable since it will extend the lifetime of the structure.

Building Materials

Many of the building materials used in historic structures and historic districts contribute to environmental sustainability through local sourcing and long-life cycles. Buildings constructed with wood and masonry were locally sources and were built for longevity with the goal of repair instead of replacement. Today, new structures utilize a significant percentage of manufactured materials. These are often less sustainable and require extraction of raw, non-renewable materials. High levels of energy are involved in the production, and the new materials may also have inherently short life spans. They also typically require shipping, increasing financial cost and greenhouse gas emissions.

The sustainable nature of historic building materials is best illustrated by a window: older windows were built with well-seasoned wood from durable, weather resistant old growth forests. A historic window can be repaired by re-glazing as well as patching and splicing the wood elements there by conserving the original materials. Many contemporary windows cannot be repaired and must be replaced entirely. Repairing, weather-stripping, and insulating an original window is generally as energy efficient and much less expensive than replacement.

Landfill Impacts

According to the Environmental Protection Agency, building debris constitutes around a third of all waste generated in the country. The amount of waste is reduced significantly when historic structures.

Economic Prosperity Component of Sustainability

This component of sustainability relates to the economic balance and health of the community. The economic benefits of protecting historic resources are well documented across the nation. These include higher property values, job creation in rehabilitation industries, and increased heritage tourism. Dubuque's historic districts also enhance that quality of life for the community at large, which can help in attracting new businesses to the city and thereby strengthen the local employment base.

Historic Rehabilitation Projects

Historic rehabilitation projects also generate economic benefits. Direct benefits result from the actual purchases of labor and materials, while material manufacture and transport results in indirect benefits. Preservation projects are generally more labor intensive, with up to 70% of the total project budget being spent on labor, as opposed to 50% when compared to new construction which means that more of a rehabilitation project cost stays in the community. In this way, expenditure on local labor and materials benefits the community's economy.

General Sustainability Guidelines for all Projects

The guidelines in this section apply to all types of projects that might incorporate improvements that could enhance the sustainability of the building or site.

Landscape Improvements for Sustainability

Landscape improvements can have a very significant impact on sustainability. For example, a landscape design can moderate the temperature of a home by providing shade in summer and solar warming in winter. Landscape improvements can contribute to water efficiency, clean air and minimize urban heat island effects. In all cases, designing improvements to enhance the sustainability of a building, its site and neighborhood is a goal. Landscape designs, including plantings and site structures, can take advantage of microclimatic conditions for energy conservation. Consider managing solar and wind exposure in all seasons in making landscape decisions.

- Select plant species that support sustainability. Use native and drought-tolerant species in a landscape design where feasible.
- Locate plants to maximize sustainability benefits while retaining the character of the traditional context.
- Locate deciduous trees and other vegetation to provide for summer shading and allow winter solar access.
- Locate vegetation to provide wind protection in wintertime while maintaining the predominant summer breezes.
- Design landscape improvements to maximize the efficiency of water use on and within a site.
- Plan to minimize or eliminate watering. For example, place drought-tolerant plants along the contours of a sloped site to help slow runoff and increase percolation into the soil, thereby reducing or eliminating the need to water those plants.
- Where use of a watering system is necessary, use one which minimizes water loss, such as a drip irrigation system.
- Place more water intensive species in areas which receive shade, as this reduces evaporative water loss.
- Provide natural stormwater drainage, storage, and usage systems on site. For example, a rain garden or similar small swale can be utilized to minimize water demand.

Environmental Impacts of Neighbors

- A design should consider the potential effect on an adjoining property and the neighborhood setting, in terms of its sustainability and solar access.
- Maintain solar access opportunities for neighboring properties. For example, limit shading of south-facing facades, outdoor dining areas, plazas, and garden areas.
- Incorporate sustainable practices and green infrastructure which increases energy efficiency and beautifies buildings and spaces.

Paving Materials for Sustainbility

Permeable paving maintains moisture in the soil, reduces demand on storm sewer systems and allows for ground water recharge. Permeable paving materials should be incorporated into site designs including courtyards, plazas, and walkways. They also should be considered in the design of service and parking areas.

- Design a permeable paving system to convey a character like traditional paving materials in residential neighborhoods.
- The application of permeable paving materials should be like traditional paving methods in a historic context.
- Using paving strips and paving stones or bricks for walks and drives in traditional residential settings in encouraged.

- Provide a permeable parking system are encouraged in residential and commercial areas. They reduce stormwater runoff and enhance water filtration and storage. These types of systems can also help to reduce heat island effects.

City of Elkhart

Staff Report

Planning & Zoning

Petition: 25-HP-01

Petition Type: Staff Report

Date: October 13, 2025

Petitioner: City of Elkhart

Site Location: State & Division Local Historic District

Request: To redraw the map for State-Division Local Historic District and meet the requirements from Section 1.3,1.5,1.6 of Ordinance 4367 of the City of Elkhart which allows the Historic Commission to identify historic buildings, structures and places located within the city limits of the city and create maps for historic districts. The revised district boundary will be the 100 and 200 blocks of State Street and Division Street including East Street ending at Prairie Street.

Staff Analysis

The petitioner is requesting to redraw the State-Division Historic District map. The boundary would approximately be the 100 and 200 blocks of Division Street including East Street ending the district at Prairie Street.

With Prairie Street acting as a fissure in the center of the district plus the overpass constructed over the rails lines, traffic has increased and resulted in the properties to the east declining and non-COA approved work in the area has resulted in a growing number of now noncontributing buildings. The district has also seen increases in new vacant lots over the years because of deferred maintenance resulting in more demolitions and several fires.

The district has not seen improvement in the form of reinvestment in structures since its being established in 1981. Economic disinvestment and high rental property numbers have resulted in a desire to modify the district's boundaries.

A request is being made to reduce the size of the historic district with the goal of spurring new investment within the remaining district west of Prairie Street. These two blocks contain the highest number of homeowner occupied structures and have more architecturally merited structures in the form of contributing buildings. The goal is to update and change the boundaries of the historic district to better protect and focus on the buildings within the 100 and 200 blocks of State and Division Streets.

Should individuals east of Prairie Street wish to see their property protected with the oversite of the Elkhart Historic and Cultural Preservation Commission, staff are willing to assist property owners through the single site historic district designation process.

The National District designation will remain unchanged, known as the State Street–Division Street Historic District as listed with the U.S. National Register of Historic Places with the original map.

Recommendation

As per Chapter 36 of the Elkhart Code of Ordinance, the Historic Commission has the power to identify historic buildings in the city and create maps to describe the boundaries of proposed historic districts.

The Staff recommends **approval** of the enclosed map.

Photos

Staff Report

Planning & Zoning

Petition:	25-HP-02
Petition Type:	Staff Report
Date:	October 13, 2025
Petitioner:	City of Elkhart
Site Location:	State & Division Local Historic District
Request:	To adopt the model preservation guidelines created by Indiana Landmarks for architectural review and meet the requirements from Section 1.3 E of Ordinance 4367 of the City of Elkhart which allows the Historic Commission to adopt preservation guidelines

Staff Analysis

The request is to adopt the model preservation guidelines created by Indiana Landmarks for architectural review and meet the requirements from Section 1.3, E of Ordinance 4367 of the City of Elkhart which allows the Historic Commission to adopt preservation guidelines.

Indiana Landmarks developed this set of model design guidelines which have been used across the state to help communities update local preservation guidelines for their individual historic districts. These design standards reflect current preservation practices and include updated materials. Updates to the design guidelines will allow staff and the Historic and Cultural Preservation Commission (HCPC) more flexibility for material in project reviews for the individual historic districts.

The new guidelines are being proposed to apply in several areas. For use to supplement the established standards for Elkhart's single site historic districts where those individual regulations are silent or lacking clarity because of the age of the ordinance. For the State - Division Street District to provide guidance and guidelines for new construction, additions and demolitions. And to also act as an additional resource for Elkhart homeowners who are looking for assistance in maintaining and preserving their own home – a service that Indiana Landmarks has offered to any homeowner for over 20 plus years.

The desired outcome is to adopt and approve the model design guidelines from Indiana Landmarks, replacing the existing design guidelines for the State - Division Street Historic District. The previous design guideline for the State & Division Local Historic District will be repealed. The district guidelines were last updated November 19, 1998, are out of date and do not meet current practices. The lack of flexibility has resulted in property owners incurring additional cost in sourcing material and the burden of higher labor costs. The standards have also become harder to apply due to a lack of flexibility of the documents' standards and lack depth on topics of updated materials. They are more rigorous than what are typically applied to most districts that have similar demographics and building typology.

The new model guidelines will be used by the HCPC in the State – Division District for new construction, additions and demolitions. The model design guidelines will be used by the HCPC to supplement the single site historic district guidelines where the ordinance standards are missing or not clear. They will also be a reference and resource guide to answer questions for Elkhart residents for their own home.

Recommendation

The Staff recommends **approval** of the model design guideline.

Photos

Staff Report

Planning & Zoning

Petition:	25-HP-03
Petition Type:	Staff Report
Date:	October 13, 2025
Petitioner:	City of Elkhart
Site Location:	State & Division Local Historic District
Request:	To establish a Conservation District to meet the requirements from Section 1.4 A of Ordinance 4367 of the City of Elkhart which allows the Historic Commission to adopt preservation guidelines

Staff Analysis

The petitioner is requesting to begin the process of establishing a Conservation District to meet the requirements from Section 1.4, A of Ordinance 4367 of the City of Elkhart which allows the Historic Commission to adopt preservation guidelines.

The State Division Street Local Historic district was established in 1981 with updates to the ordinance in 1991 and 1998. Since the time of district establishment, the neighborhood has seen many of the homeowner properties become rental. The neighborhood demographics and the financial needs of the individuals who live in the area have grown. The ability for residents to pay the cost of maintaining these homes to the ordinance standard has become untenable for most. As a result, the neighborhood has seen increases in deferred maintenance leading to deteriorating structures. That neglect, compounded with several fires, has resulted in large numbers of vacant lots as homes are demolished. Under the current design guidelines, the lack of flexibility of allowed building materials and a national shortage of skilled craftsmen with knowledge of how to maintain a historic home has compounded the struggle of this district.

The State Division Street district has not seen the structures preserved as originally hoped or improvement to property values since its creation in 1981. As a result, disinvestment and apathy towards the standards has grown and resulted in a steady decline of properties in the neighborhood. The request is to start the process of moving the historic district from a Local Historic District to a two-phased Historic Conservation District for the updated district boundaries outlined in earlier case 25-HP-01.

Many of the COA's that come in front of the Historic and Cultural Preservation Commission come from individuals or local not for profit groups that were cited for doing work without approval. The people who have tried to follow the guidelines are hampered by the cost of materials and inability to find qualified contractors. The amount of unpermitted work on weekends and non-Certificate of Appropriateness (COA) approved work has resulted in a growing number of structures now likely being considered non-contributing.

The process of moving from a Local Historic District to a Conservation District starts with the first phase as a 3-year period as a conservation district. During this phase, a certificate of appropriateness is required only for the following activities: demolition of any building, moving or relocation of any building or structure and any new construction of a principal building or accessory building or structure subject to view from a public way.

At the expiration of the initial 3-year period, the first phase of a conservation district continues and the second phase does not become effective if a majority of the property owners in the district object to the HCPC, in writing, to the requirement that Certificates of Appropriateness be issued for the following activities:

Recommendation

The Staff recommends **approval** of the model design guideline.

Photos