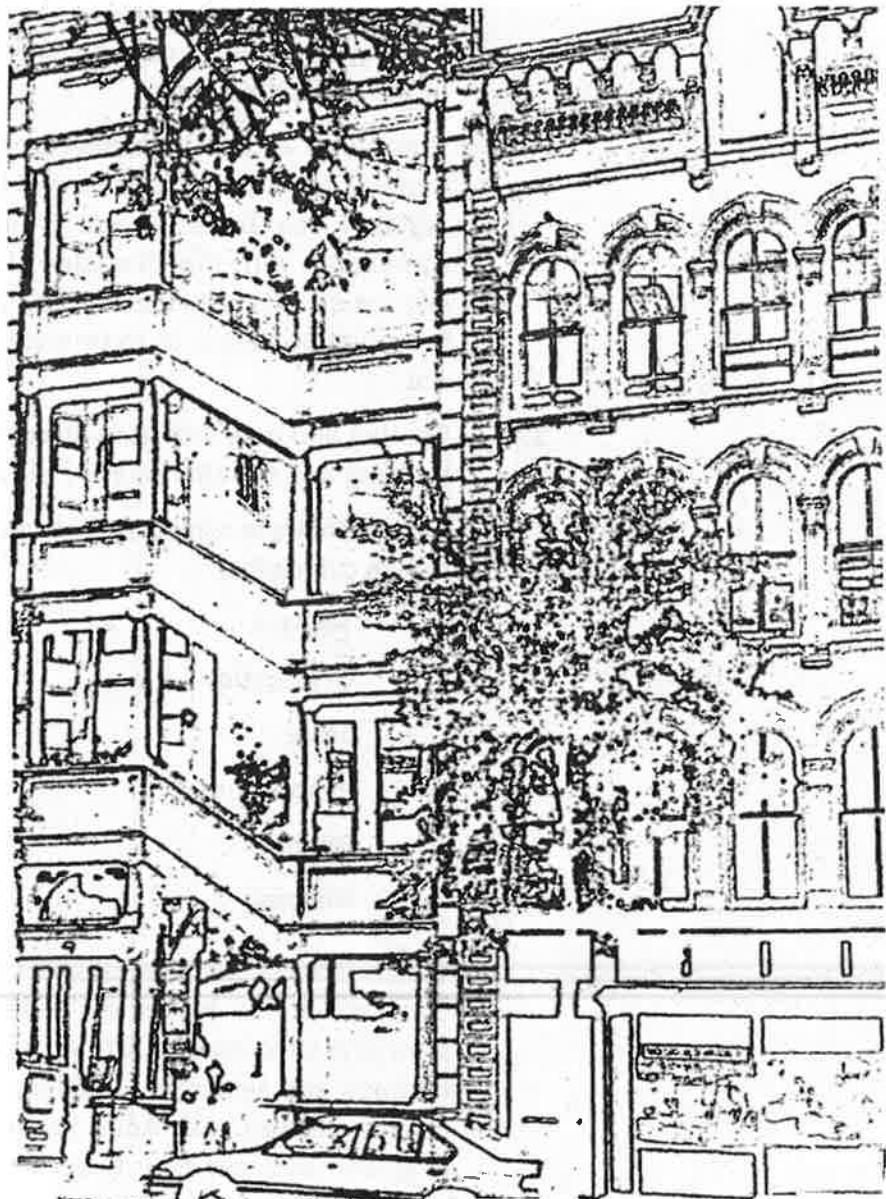


District of Columbia  
Historic Preservation Guidelines

# Additions to Historic Buildings



# Introduction

Many of Washington's historic buildings have been added to over the years. Some were built to make the building more functional, others to improve the economic viability of the building. Still others were constructed to accommodate changes in building systems and technology, to improve access for persons with disabilities or for other reasons.

In some cases an existing addition to a historic building is compatible with the scale, proportions, materials and other character-defining elements of the original building. Its design respects, but does not exactly duplicate, the character of the original building. Further, the addition does not destroy original character-defining details and ornamentation. These existing additions often have acquired significance in their own right and therefore should be retained. Any changes to significant existing additions should be approached with the same care as changes to the original building.

Sometimes an existing addition is not historically significant or its design detracts from the architecture of the original building. In these cases, the addition can be removed or its exterior altered to make it more compatible with the character of the original building. However, before any action is taken, the building owner should consult with the Historic Preservation Office to determine if an existing addition is significant or not.

- 1.1 Existing and new additions should be compatible with the original building and the character of the neighborhood.**
- 1.2 Compatibility is achieved through careful application of the following design principles:**

<b>Setback</b>	<b>Height</b>
<b>Orientation</b>	<b>Materials</b>
<b>Scale</b>	<b>Colors</b>
<b>Proportion</b>	<b>Roof Shapes</b>
<b>Rhythm</b>	<b>Details and Ornamentation</b>
<b>Massing</b>	<b>Reversibility</b>

Compatibility is based on a thorough understanding of the design principles of existing buildings, as well as those used to design landscape features and secondary buildings on the site. Compatibility should also involve analysis of how these design principles are used in the neighborhood and how they can be interpreted using today's materials and construction techniques.

# Location of Additions

Existing and new additions may be attached to the front, side or rear elevation of a building. Some historic buildings may have more than one addition. The location of an addition is an important aspect of its compatibility to the original building.

## ***Front additions***

Some existing front additions were constructed when a residential or other type of building was converted to a commercial use. Often these additions were built to the front property line. Typically, they were designed as commercial storefronts. If the existing addition is compatible with the original building, it should be retained. If it is not, the building owner may consider its removal or alteration.

Existing front additions can also be found on rowhouses and free-standing residential buildings. When these additions are compatible, or have achieved significance in their own right, they should be preserved. When they are considered non-significant they may be removed after consulting with the Historic Preservation Office.

Adding a new addition to the front of a historic building presents a difficult design challenge. In almost all cases the new addition will cover all, or a major portion of, the character-defining facade and thus will significantly alter the appearance of the historic building.

- 1.3   **Locating a new addition on the front of an existing building should usually not be considered.**



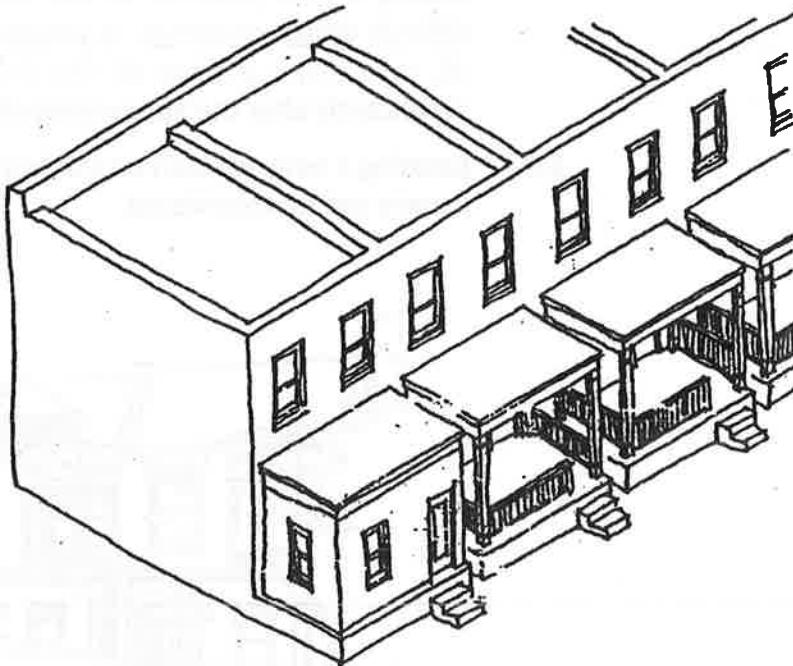
*Adding to the front of a building obscures the character-defining facade and disrupts the streetscape.*

## **Rear additions**

The most common type of existing additions found in Washington's historic districts are those located on the rear of rowhouses. They may have originally been constructed as open or screened porches that were enclosed to increase living space in the house. Typically, existing rear additions are relatively plain in design and are compatible with the unadorned nature of most rear elevations.

In other cases they have been designed in stark contrast to the rear elevation. While the latter is not in keeping with the design principles for additions, a contrasting rear addition may be acceptable if it is not visible from a public street or alley and when it does not destroy existing character-defining details, ornamentation and materials of a rear elevation.

- 1.4 A new rear addition that can be seen from a public street or alley should be compatible with the design of the rear elevation of the existing building.**
- 1.5 If the new addition is not visible from the street or alley, a less compatibly designed addition may be acceptable.**



*A rear addition is often plain in design, reflecting the simple architecture of most rear elevations*

## **Side additions**

While not as common as rear additions, existing side additions can be found particularly on free-standing residential buildings. These include open side porches as well as enclosed rooms. Since side additions can usually be seen from the public street, they should be compatible with the design of the original building, respecting its character without duplicating it exactly.

An existing addition that detracts from the appearance of the original building due to its incompatibility in scale, proportions, rhythm, materials or other design principles, may be altered or removed after consulting with the Historic Preservation Office.

- 1.6 A new side addition should be designed to be compatible with the original building.**

*A side addition should be compatible with the design of the original building*



## Design Principles for New Additions

When an addition to a historic building is required for functional, economic or other reasons, it should be designed to be compatible with the existing building. At the same time, the design of the addition should be distinct enough so that it does not appear to have always existed.

Compatibility, without exact duplication, ensures that the evolution of the building can be seen, and that a false sense of the building's history is not created. Similarly, the design of an addition should not make it look older than the original building. For example, a Federal style addition should not be designed for an Italianate building.

The compatibility of an addition is dependent on the design of the original building, its site, and neighborhood. Thus it is not possible to define exactly what will be compatible, and what will not, in the abstract. Rather, it is important to understand how compatibility can be achieved through the thoughtful application of the following design principles.

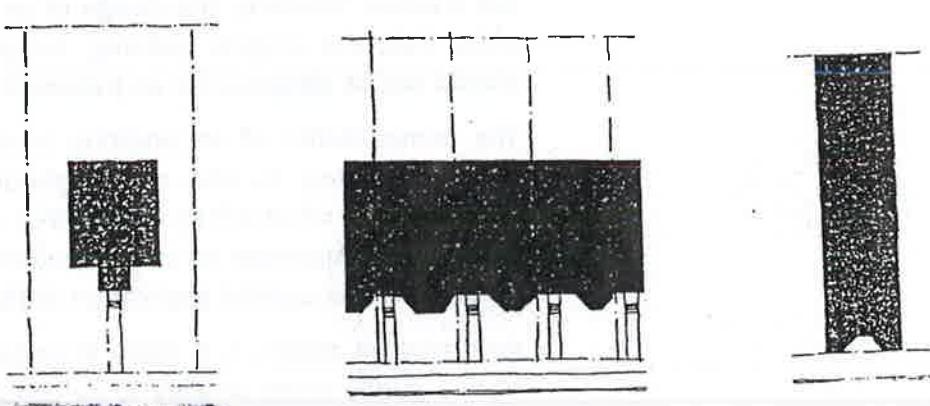
As discussed above, it is more important for an addition that is visible from a public street or alley to be compatible with the original than one that is not visible. The following design principles apply primarily to front and side additions, but they are also useful when designing a compatible rear addition.

## **Setback**

The District of Columbia zoning regulations control the legal setback of a building, that is, the distance a building must be located inside the property lines. In some districts, buildings may be built on the property lines (called zero setbacks). In areas zoned for rowhouses, setbacks are required for the fronts and rears of buildings, but not the sides. In other districts, setbacks are required for all sides of the building.

- 2.1 **In addition to complying with legal setback requirements, a new addition should respect the setbacks established by the existing buildings on a street. A new front porch should not, for example, extend beyond the line created by other front porches, even if allowed to by the zoning code.**
- 2.2 **On the other hand, respecting the alignment of rear additions is generally not as critical because they usually cannot be seen from the public street or alley.**

*Respecting the existing setback is important when designing a new addition*



**Typical Setbacks**

*Detached houses are set back from all property lines*

*Rowhouses are usually set back from front and rear property lines*

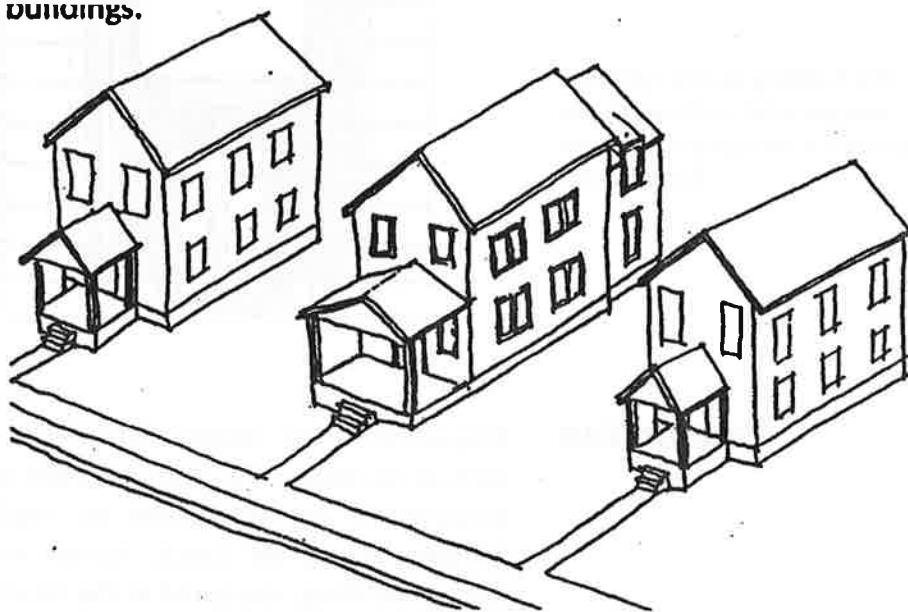
*Commercial buildings often have no setback*

## **Orientation**

The orientation of a building is the direction it faces. Most historic buildings squarely face a street, with their principal facade and entrance in full view. Some historic buildings are oriented to a side yard. Due to Washington's street patterns, a few historic buildings are oriented to two streets.

- 3.1 The orientation of an addition should respect the existing orientation of the building to which it is attached as well as the orientation of neighboring buildings.**

**Buildings.**



*The orientation of an addition should respect the existing building's orientation and that of neighboring buildings*

## **Scale**

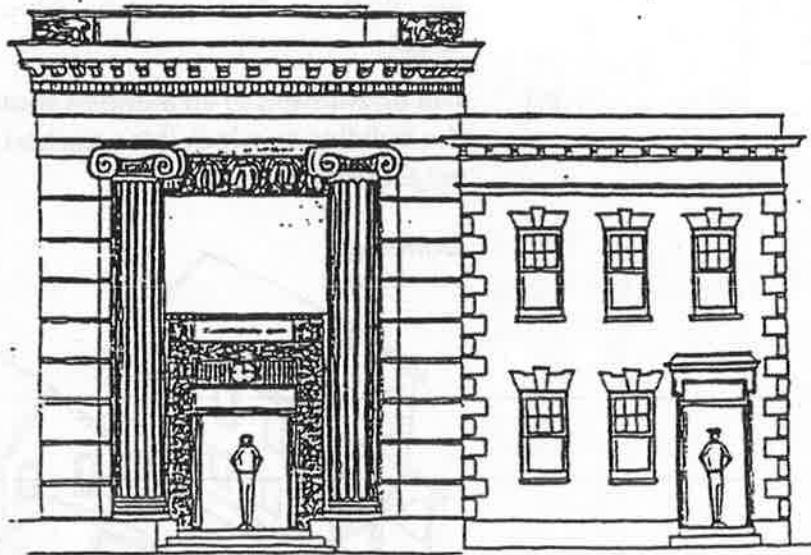
Scale is the relative or apparent size of a building in relationship to its neighbors. Scale is also the relative or apparent size of building elements, such as windows, doors, cornices and other features, to each other and to the building as a whole.

Most buildings are designed to be of human scale, that is they are designed to relate to the size of an average human being. Typically, residential buildings are designed to have human scale. Other buildings are designed to be of monumental scale, or larger than human scale. Usually, this is done to give the building prominence and symbolic importance. Monumental scale is typically associated with government and religious buildings..

Scale can be achieved in many ways. For example, windows, doors, cornices and other elements can be enlarged to impart a sense of monumentality or to be human in scale. Facades can be heavily "rusticated," usually using stone cut in large blocks with deep joints to give a bold, rich texture to the wall and contribute to the sense of monumentality. On the other hand, plain materials and treatments make a building appear human in scale.

- 4.1 The scale of a new addition should usually correspond to the scale of the existing building.**

*The building on the left has a monumental scale, while the addition on the right has a more human scale*



## ***Proportion***

Proportion is the relationship of the dimensions of building elements, such as windows and doors, to each other and to the elevations. Often, proportions are expressed as mathematical ratios, particularly in buildings based on Greek, Roman or Renaissance architecture. Many historic buildings designed in the nineteenth and early twentieth century use mathematical proportions to locate and size windows, doors, details and ornamentation.

- 5.1 The design of a an addition should respect existing proportions of a building and those of neighboring buildings.**

*The proportions of an addition should be compatible with those of the original building*



## **Rhythm**

The spacing of repetitive facade elements, such as projecting bays, storefronts, windows, doors, belt courses and the like give an elevation its rhythm. The overall width and height of rowhouses and other party-wall buildings gives an entire street its rhythm. The rhythm of a street is also achieved through the use of towers, roof projections, porches, steps, fences, trees, paths and other repetitive landscape and building elements.

- 6.1 An addition should respect the rhythm of a building, its neighbors, and that of the street.**

*The rhythm of an addition should respect the established rhythm of the original building and that of its neighbors*



## **Massing**

Massing is derived from the articulation of building facades through the use of towers, bays, porches, steps and other projections.

- 7.1 Massing significantly contributes to the character of a facade and a street and should be respected in any addition.**

For example, disregarding the existing massing by introducing a predominant new projection will usually make an addition incompatible with the existing building and its neighbors.

*The massing of an addition should be compatible with the massing of the existing building and that of its neighbors*



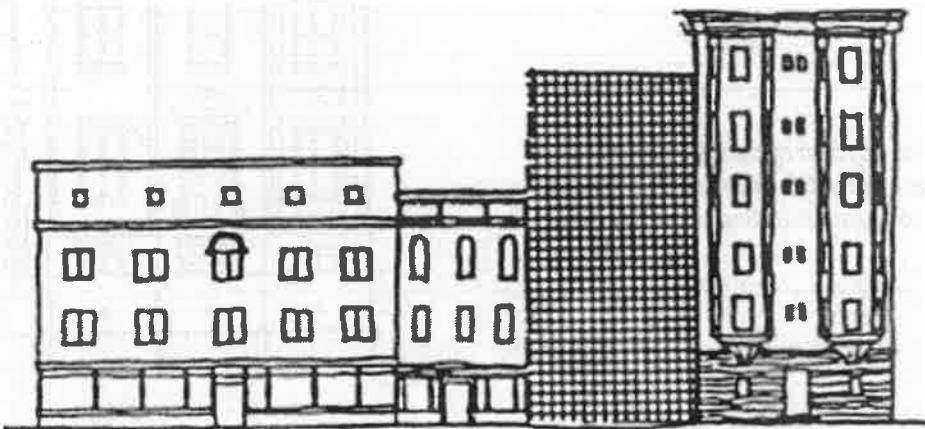
## **Height**

The height of walls, cornices, roofs, chimneys, towers and other projections contributes to the character of a building and street.

- 8.1 While an addition does not necessarily need to be exactly the same height as the existing building, it should be designed to be compatible with the height of the existing building and its neighbors.**
- 8.2 Compatible height depends, in part, on the location of the addition.**

For example, a side addition with the same setback as the existing building should typically not be more than one story higher or lower than the original building, while a rear addition may vary in height by two or more stories.

*The height of an addition should be compatible with the height of the existing building and its neighbors*



## **Materials**

The materials used for walls, windows, sloping roofs, details and other visible elements of historic buildings should be respected in the design of an addition.

- 9.1 If the existing building consists of one predominant material, the new addition may use the same or a visually compatible material.**
- 9.2 If the existing building uses a number of different exterior materials, the addition may use a range of compatible facade materials. Using compatible exterior materials is particularly important for a new addition visible from a public street.**
- 9.3 The size, texture, surface finish and other defining characteristics of existing materials are as important as the type of material itself.**

For example, a front or side addition constructed primarily of tooled granite would not be compatible with an existing building constructed primarily of smooth polished marble, even though both are built of stone. Similarly, an addition using Roman brick would not be compatible with an original facade of common brick. However, if an addition is located on a rear elevation, and not visible from a public street, a wider range of materials is possible.

## **Colors**

A building's colors are often derived from the materials used in its construction. For example, brick, stone, terra cotta, slate, asphalt shingle, copper, lead and other materials that are typically left unpainted, give color to a building. In other cases, color is applied to a material by painting or staining. This is typical for materials such as wood, stucco, some metals and sometimes concrete.

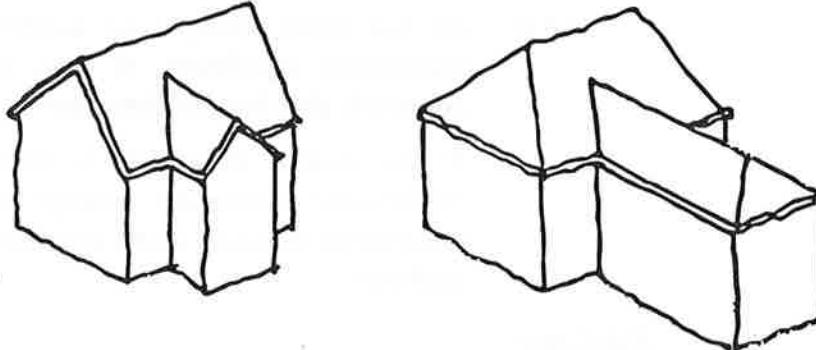
- 10.1 The colors of an addition should be compatible with those of the existing building.**

## **Roof Shape**

- 11.1 The roof shape of an addition should relate to the roof shape of the existing building.**

For example, if the building has a gable roof, a new side addition should probably have a gable roof. Introducing a different roof shape, such as a flat roof, would probably not be compatible.

*The roof shape of a an addition should be compatible to the roof shape of the existing building*



## **Details and Ornamentation**

Some historic buildings in Washington contain elaborate details and ornamentation while others are relatively plain. An addition should consider the amount, location and elaborateness of existing details and ornamentation in its design.

- 12.1 Existing details and ornamentation may be used as the basis for those on an addition, but they should not be copied exactly.**
- 12.2 Where possible, existing details and or ornamentation should not be obscured by an addition nor should they be removed or damaged.**

## **Reversibility**

- 13.1 An addition should be designed so that if it is removed in the future, the features, materials, surfaces and other character-defining elements of the original building are unimpaired.**

*The Secretary of the Interior's Standards for Rehabilitating Historic Buildings* calls this the principle of reversibility. It states that the addition should be designed to avoid removing, cutting or otherwise damaging features, details, ornamentation and the like, and that junctions between the addition and existing building be designed to do the least harm to important existing materials.

# Other Design Issues

In addition to the design principles discussed above, there are a number of common issues related to existing and new additions to historic buildings. These include the removal of existing additions, adding decks to residential buildings, new rooftop additions and compliance with District of Columbia codes.

## ***Removal of Existing Additions***

The removal of an existing addition should only be done after carefully considering its architectural and historic significance in consultation with the Historic Preservation Office.

- 14.1** Sometimes even though an existing addition does not follow the design principles discussed above it has achieved significance in its own right. If this is the case, it should be retained rather than removed.
- 14.2** On the other hand, if an existing addition is not architecturally or historically significant, it may be possible to remove it without adversely altering the character of a building.

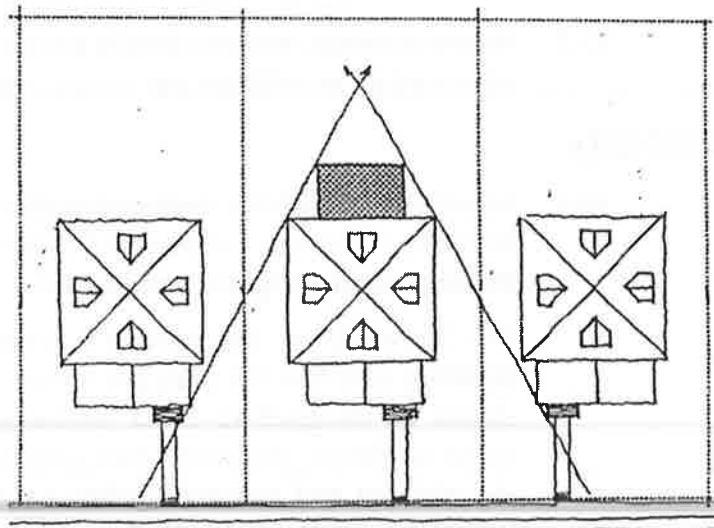
If this course of action is considered acceptable by the Historic Preservation Office, any damage done to the original building should be repaired or replaced using physical, photographic or other documentary evidence.

## ***Adding Residential Decks***

Decks are frequently added to historic residential buildings. Often made of wood, they sometimes containing awnings or other shading devices.

- 15.1** Decks should be located so that they cannot be seen from a public street. If they will be seen from the street or sidewalk, they should be designed to be compatible with the character of the historic building.

*A deck should be located so it can not be seen from a public street or sidewalk*

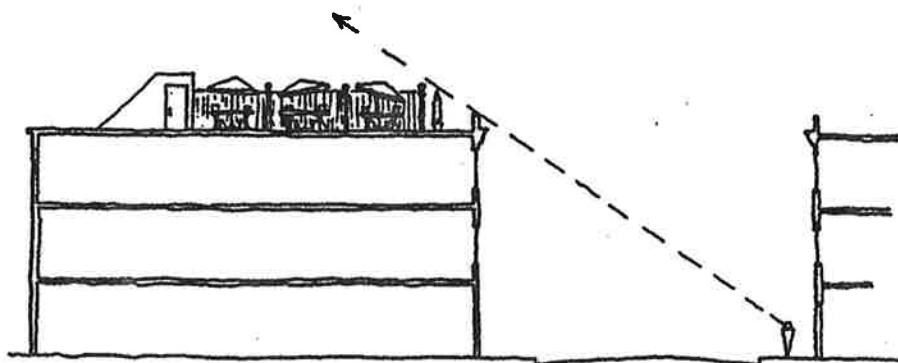


## **Rooftop Additions**

A roof-top addition to a historic building is sometimes necessary for mechanical and communications equipment. In other cases, a deck may be added to the roof of a commercial building. In still other cases, an entire floor may be added to the top of an existing building.

- 16.1 Any roof-top addition should be located far enough behind the existing cornice so that it is hidden from view by pedestrians on the street.**
- 16.2 If this is not possible, the design of the addition or its screening should be compatible with the character of the building.**

*A roof-top addition should be located so it is not visible to pedestrians*



## **Substitute materials**

A new addition will require a building permit and thus must comply with District of Columbia codes. Compliance is the responsibility of the property owner.

In a few cases, District of Columbia building and zoning codes may require certain latitude in the application of the design principles contained in this guideline. For example, the guideline on materials recommends that an addition to a historic wood rowhouse use similarly sized and detailed wood siding on the exterior. However, the District of Columbia building code may not allow wood to be used as an exterior building material. In such cases, the addition should use a substitute material that is comparable to wood in scale, texture, reflectivity and other characteristics.

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poly(U) was added to each tube and the reaction mixture was incubated at 37°C for 1 h.

After the reaction, the reaction mixture was added to 100 µl of ice-cold 10% TCA and 100 µl of ice-cold 10% trichloroacetonitrile (TCA-TCAN), and the precipitated proteins were collected by centrifugation at 10,000 × g for 10 min.

The supernatant was discarded, and the precipitated proteins were washed three times with 100 µl of ice-cold 10% TCA-TCAN. Finally, the precipitated proteins were dissolved in 100 µl of 0.5 M NaOH, and the absorbance at 260 nm was measured.

The amount of poly(U) was calculated from the absorbance at 260 nm, assuming that the molar extinction coefficient of poly(U) is 10,000 M<sup>-1</sup> cm<sup>-1</sup>.

For the assay of the antiviral activity of poly(U) against VZV, the method described previously was used.<sup>10</sup>

In brief, the VZV was adsorbed onto the monolayer of Vero cells, and the infected cells were treated with various concentrations of poly(U).

After the treatment, the infected cells were lysed with 0.1% Triton X-100, and the released virus was titrated on Vero cells.

The amount of poly(U) was calculated from the amount of poly(U) required to inhibit the release of VZV by 50%.

The amount of poly(U) required to inhibit the release of VZV by 50% was expressed as the IC<sub>50</sub>.

The amount of poly(U) required to inhibit the release of VZV by 90% was expressed as the EC<sub>90</sub>.

The amount of poly(U) required to inhibit the release of VZV by 99% was expressed as the EC<sub>99</sub>.

The amount of poly(U) required to inhibit the release of VZV by 99.9% was expressed as the EC<sub>99.9</sub>.

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## RESULTS

### Antiviral Activity of Poly(U) Against VZV

The antiviral activity of poly(U) against VZV was examined.

As shown in Table I, poly(U) inhibited the release of VZV by 50% at a concentration of 0.001 µM.

At a concentration of 0.01 µM, poly(U) inhibited the release of VZV by 90%.

At a concentration of 0.05 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 0.1 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 0.5 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 1.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 5.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 10.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 50.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 100.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 500.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 1000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 5000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 10000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 50000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 100000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 500000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 1000000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 5000000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

At a concentration of 10000000.0 µM, poly(U) inhibited the release of VZV by 99.99999999999999%.

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