Design Guidelines For Roof Dormers

prepared for the

Cambridge Board of Zoning Appeal
City of Cambridge

1996

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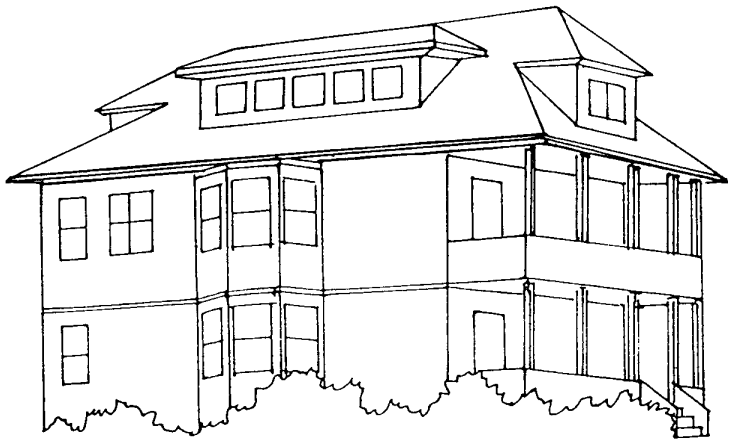
INTRODUCTION

The *Design Guidelines* have been prepared to help property owners, and the design and building professionals working for them, create dormers that will increase the living space of an attic story while retaining the basic design integrity of the building's roof lines. More specifically, the guidelines are intended to serve as a reference for applicants coming before the Board of Zoning Appeal (BZA) for dormer additions requiring review under the Zoning Ordinance or before either of the two Neighborhood Conservation District Commissions for design review. Adherence to these guidelines enhances but does not guarantee that an application, in and of itself, will necessarily be granted a variance or special permit by the City.

While these guidelines apply to all building types, the type most affected will be houses with gable, hipped or mansard roofs. The city's building stock consists largely of wood-framed dwellings with gable roofs, especially throughout West and Mid Cambridge. While many of these houses may not be considered architecturally or historically significant, they do contribute to the larger architectural fabric of their neighborhoods, and are therefore considered significant community resources. These guidelines were devised in the spirit of helping to conserve the essential architectural character of those neighborhoods.



Properly designed dormers can increase the living space of an attic story while preserving the character of a building. Dormers come in a variety of styles depending upon the shape of the main roof. This duplex house with a large hipped roof has successfully increased its third-floor living space by adding three appropriately scaled hipped dormers to the side and ends of the roof.

THE GUIDELINES

Site Context: *Corner properties, where architectural changes may have a greater visual impact upon adjacent public space, will be examined more carefully by the municipal review board than interior lots where the visual impact on public space will be less. The guidelines, therefore, may be applied somewhat more rigorously for corner lots than interior ones.*

SHED DORMERS

In terms of cost effectiveness, the shed dormer (***Fig. 1***) is often the solution preferred by owners for adding living space to the attic story of a gable-roof building. The ideal shed dormer will make an attic space more livable while preserving the building's roof profile.

Setbacks: As a general rule of thumb, the greater the front, side and rear setback, the better. More specifically, the following minimum setbacks are recommended:

- *Front Wall*: A dormer whose front wall is set flush with the main wall of the building, while not prohibited outright, is not recommended (***Fig. 2)***. The preferred setback should be at least 1 ft. 6 in. from the building's main wall (***Fig. 6***). Dormer front walls should not extend beyond the main wall of the building beneath (***Fig. 3***). Removal of the roof eave between the dormer and the main wall beneath is strongly discouraged (***Fig. 4)***.

- *Side Walls*: The setback should be at least 3 ft. 6 in. from the roof at the gable ends (***Fig. 1***). Under certain conditions the City of Cambridge allows dormers "as of right" up to 15 ft. in length; additions that extend beyond 15 ft. must be approved by the BZA. In general, dormers should not exceed 15 ft. or one-half (1/2) of the main roof's length, whichever is shorter. As an option, this maximum length may be achieved through a combination of paired dormers. If paired, the combined length should not exceed 15 ft. For smaller buildings, where the 15 ft. rule would allow the dormer to extend within 3 ft. 6 in. of the gable end, the 3 ft. 6 in. setback should apply.

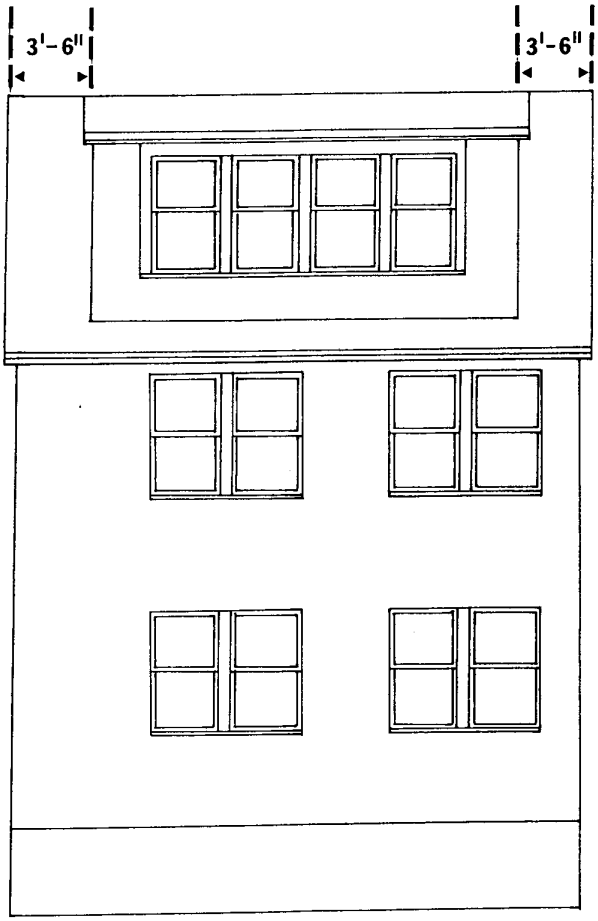


Figure 1: Shed-roof dormers should be setback no less than 3 ft. 6 in. from the gable end walls and 1 ft. 6 in. from the main walls underneath the eaves.

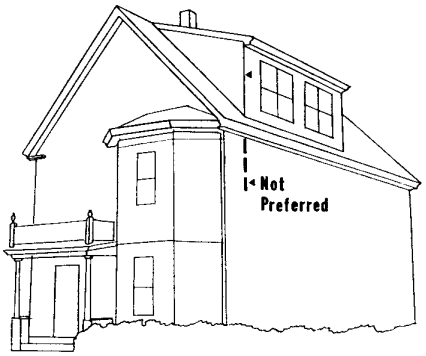


Figure 2: Setting the front wall of a dormer flush with the main wall underneath is not recommended. See Fig. 6 for the preferred 1 ft. 6 in. setback.

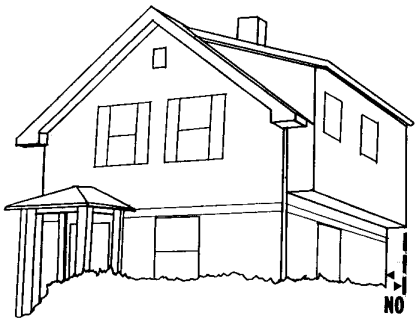


Figure 3: The front wall of a dormer should not extend beyond the main wall of the building.

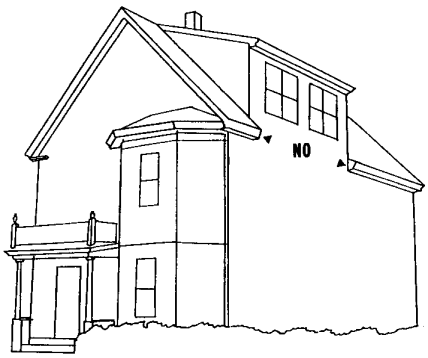


Figure 4: Removing the eave between the dormer's front wall and the main wall underneath is not recommended.

• *Ridge Connection:* The preferred setback should be at least 1 ft. from the roof ridge (***Fig. 5***). If, however, the dormer meets the recommended setbacks for side and front walls, the dormer roof may start at the ridge beam (***Fig. 6***).

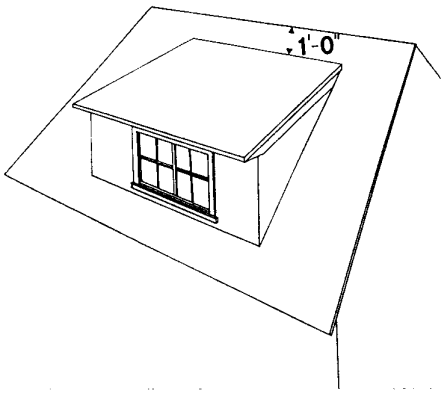


Figure 5: *The preferred setback from the roof ridge should be at least 1 foot.*

Placement: Ideally, a dormer should be placed on the rear or less public side of a building with a side-gable roof. In most cases, a single dormer should be centered within the length of the side-gable roof (***Fig. 7***). Leeway may be allowed for offsets depending upon interior space constraints. In cases involving a front-gable roof, the BZA prefers the dormer to be offset toward the rear of the building (***Fig. 8***). Paired gable dormers should, in most cases, be centered symmetrically within the roof area.

Roof Pitch: The pitch will vary according to the pitch of the main roof. In no case, however, should the dormer roof lack slope or be constructed flat. In almost all cases, the dormer structure should not rise above the ridge line of the main roof (***Fig. 9***).

Inset Roof Decks: Inset roof decks, created by cutting into a section of roof and inserting a decked opening, should follow the same setback standards stipulated for dormers.

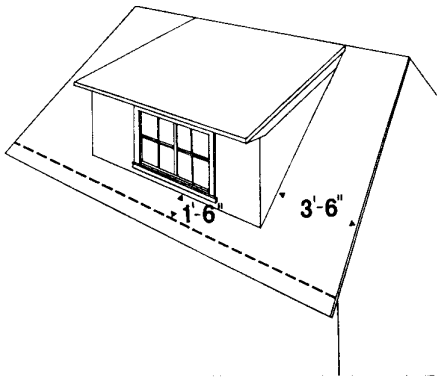


Figure 6: *If the dormer meets the recommended setbacks for side (3 ft. 6 in.) and front (1 ft. 6 in.) walls, the dormer roof may start at the ridge line.*

Windows: In general, window area, including trim, should account for at least 50 percent of the dormer's front wall face (***Fig. 10***). In no case should windows be allowed in the side walls of dormers (***Fig. 9***). Dormer windows should be balanced in style, alignment and proportion with the windows in the principal wall beneath the dormer. Exceptions may be made for Queen Anne style buildings, or other intentionally "picturesque" historic styles, where asymmetrical placement and proportion could accentuate rather than diminish the architectural effect of the dormer.

Wall Material and Color: The wall cladding or siding of a dormer should be the same material and color as the main walls of the building, with the exception of dormers sided with slate shingles. In those cases where a building may have multiple colors or materials as part of its historic style or intended design, the dormer addition may be clad and/or painted in a contrasting manner appropriate to that style or design.

When all design alternatives to increase living space in the attic have been explored and failed to meet the owner's needs, the raising of the roof to create a new story may be explored. This approach of last resort may be permitted by the BZA if the result is a more coherent design with no greater negative impacts on abutting properties.

Figure 8: *The preferred location for a larger single dormer on a gable-front building is offset toward the rear.*

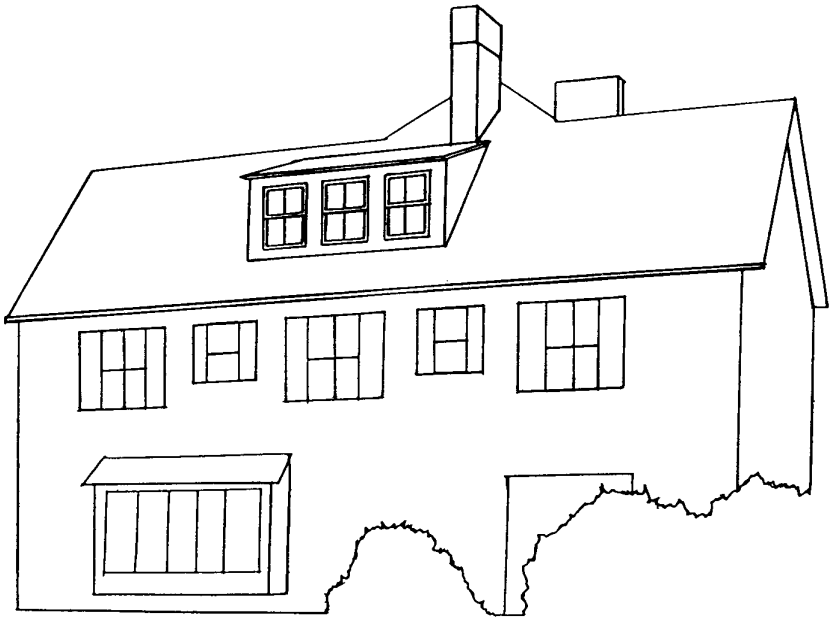


Figure 7: *Ideally, a smaller single dormer should be centered within the length of the main roof.*

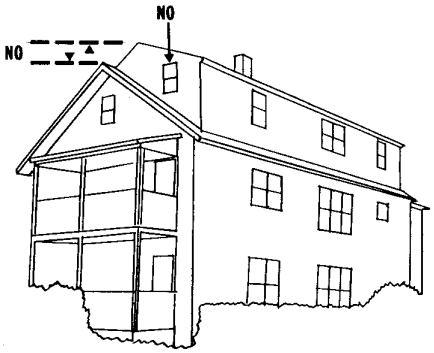


Figure 9: *In almost all cases, a dormer should not rise above the ridge line of the building's main roof. Neither should windows be placed in a dormer's side walls as a general rule.*

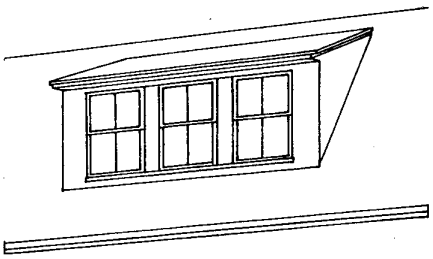


Figure 10: *In general, window area, including the framework, should account for at least 50 percent of the dormer's front wall face.*

GABLE DORMERS

Gable dormers (***Fig. 11***) often provide a more attractive alternative to shed dormers, especially when a building already includes gable dormers as part of its designed look.

Gable Dormer Setbacks: As a general rule of thumb, the greater the front, side and rear setback, the better. More specifically, the following minimum setbacks are recommended:

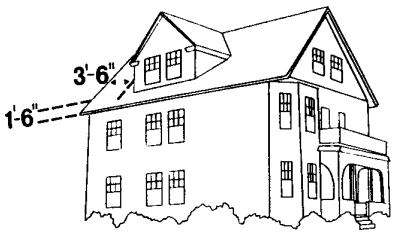


Figure 11: *If the gable dormer meets the recommended setbacks for side (3 ft. 6 in.) and front (1 ft. 6 in.) walls, the dormer roof may extend from the ridge line.*

- *Front Wall*: The setback should be at least 1 ft. 6 in. from the building's main wall (same as the shed dormer) (***Fig. 11***). A gable dormer whose front wall is set flush with the main wall beneath is not recommended.

- *Side Walls*: The setback should be at least 3 ft. 6 in. from the gable end (***Fig. 11***). While under certain conditions the City of Cambridge allows dormers "as of right" up to 15 ft. in length, additions that extend beyond this length must be approved by the BZA. In general, however, dormers should not exceed 15 ft. or one-half of the main roof's length, whichever is shorter. Gable dormers added in combination, such as pairs (***Fig. 12***), should not exceed the 15 ft. rule in total length. For smaller buildings, where the 15 ft. rule would allow the dormer to extend within 3 ft. 6 in. of the gable end, the 3 ft. 6 in. setback should apply.

Figure 12: *Gable dormers added in combinations, such as pairs, should not exceed 15 ft. in total length. The preferred setback from the roof ridge should be at least 1 foot.*

- *Ridge Connection:* The preferred setback should be at least 1 ft. from the roof ridge (***Fig. 12***). If the dormer meets the recommended setbacks for side and front walls, however, the dormer roof may start at the ridge beam (***Fig. 11***).

Gable Placement: Dormers added in combinations, such as pairs or triplets, should be arranged symmetrically within the main roof so that they are centered and spaced proportionally (***Figs. 12 & 13***). In all cases, the distance between each dormer should be no less than one half (1/2) the width of each structure. In the case of three dormers, where the central structure is larger than the flanking pair, the minimum distance between each should be set by the width of the central dormer (***Fig. 13***). In some cases where a shed

dormer is proposed, matching gable dormers may be added at either end like bookends (***Fig. 14***) to improve its appearance.

Roof Pitch: The roof pitch of a gabled dormer should be proportionally matched with the pitch of the building's main roof (***Fig. 13***).

Windows: Window area, including trim, should account for not less than 50 percent of the dormer's front wall area below the pediment (***Figs. 12-14***). Windows should not extend into the pediment wall surface unless they are deemed appropriate for the building style, as, for example, a three-part Palladian window in a Colonial Revival house (***Fig. 15***). Whenever possible, dormer windows should be balanced in proportion and placement with the windows in the principal wall underneath (***Fig. 15***). In few, if any, cases should windows be allowed in the side walls of dormers unless they are designed as an integral part of a building's historic or intended style, such as Queen Anne or other intentionally "picturesque" styles.

Wall Material and Color: The wall cladding or siding of a gabled dormer should be the same material and color as the principal walls of the building. In those cases where a building may have multiple colors or materials as part of its historic or intended style, the dormer addition may be clad and/or painted in a contrasting manner appropriate to that style.

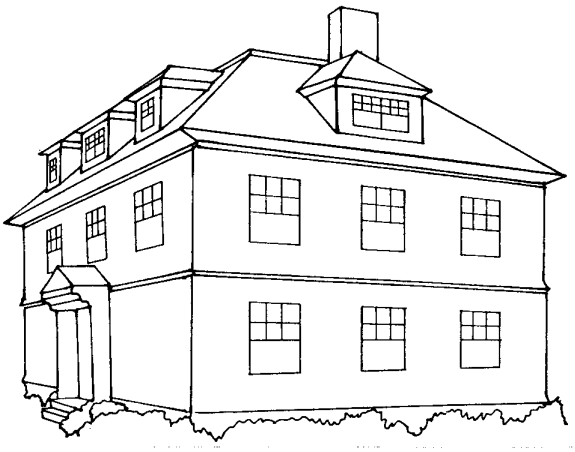


Figure 13: *Gable dormers added in combinations, such as triplets, should be arranged symmetrically within the main roof so they are centered and spaced proportionally. The distance between each should be no less than one half (1/2) the width of the largest dormer.*

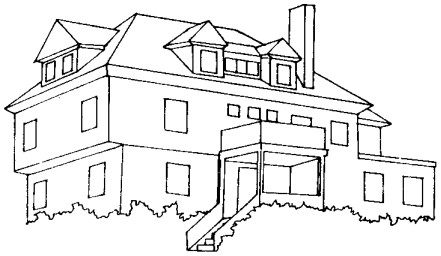


Figure 14: *Matching "bookend" gable dormers added to an existing shed-roof dormer, or included as part of a gable/shed roof addition, offer a balanced appearance while increasing living space.*

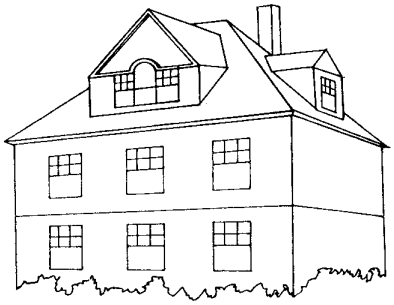


Figure 15: *Gable dormer windows should not extend into the pediment wall surface above unless deemed appropriate for the building style, such as this three-part Palladian window in a Colonial Revival house. Dormer windows should be balanced in proportion with the windows in the main wall beneath them.*

RESOURCES

City of Cambridge Historical Commission, City Hall Annex, 57 Inman Street, Second Floor, Cambridge, MA 02139.
(617) 349-4683.

City of Cambridge Community Development Department, City Hall Annex, 57 Inman Street, 3rd Floor, Cambridge, MA 02139.
(617) 349-4600.

City of Cambridge Board of Zoning Appeal, 831 Massachusetts Avenue, Cambridge, MA 02139.
(617) 349-6100.

Half Crown Neighborhood Conservation District Commission, City Hall Annex, 57 Inman Street, Cambridge, MA 02139.
(617) 349-4683.

Mid-Cambridge Neighborhood Conservation District Commission, City Hall Annex, 57 Inman St., Cambridge 02139.
(617) 349-4683.