Town of Boone
Historic Preservation Commission Quasi-Judicial Meeting
3:00 PM, December 9, 2025
Planning & Inspections Conference Room
680 W. King St., Suite C
Boone, NC 28607

The public may attend the meeting in person at the Planning and Inspections Conference Room at 680 West King Street, Suite C, or online via WebEx, a video conferencing software.

Public Comment: To give public comment, you should appear in person at the physical location of this meeting. Persons who attend the meeting remotely via WebEx may be permitted to speak during public comment but are not assured of that opportunity.

WebEx Participations: To join online or by phone, email Planning and Inspections at planning@boonenc.gov or call 828-268-6960, and you will receive an email invitation. Requests must be submitted no later than one hour before the meeting begins.

I. Call to Order

II. Adoption of Agenda

III. Approval of Meeting Minutes

1. November 18, 2025, HPC Quadi-Judicial Meeting Minutes

IV. Quasi-Judicial Hearing Certificate of Appropriateness Case(s)

1. Case A25-0811 Ram's Rack Roof - COA

V. Other Matters

1. Statement of Conformity Report - as of December 1, 2025
   No SoC applications to report

VI. Adjournment

TOWN OF BOONE
HISTORIC PRESERVATION COMMISSION
MEETING MINUTES
NOVEMBER 18, 2025, 3:00 PM
Planning & Inspections Department & WebEx Video Conferencing

Historic Preservation Commission Members Present: Vardell Smyth-Chair, Bettie Bond-Vice-Chair, Krystal Carter, Bennie Gaetano, and Melody Oxendine

Planning Staff Present: Amy Snider-Commercial Zoning Administrator, Brandon Wise-Deputy Director of Planning & Inspections, Jessica Mitchell-Advanced Planning Specialist (via WebEx), Jane Shook-Director of Planning & Inspections (via WebEx), and Brenda Henson-Board Clerk

Other Town Staff/Representatives Present: Allison Meade-Town Attorney (via WebEx), and Lane Moody-Downtown Development Coordinator (via WebEx)

Call to Order

Chair Smyth called the Boone Historic Preservation Commission meeting to order at 3:00 p.m. The meeting was held in the Planning & Inspections Conference Room at 680 West King Street and via WebEx.

Adoption of Agenda

Commission Member Carter made a motion to approve the agenda as presented. Commission Member Gaetano seconded the motion.

Vote: Aye – 5
Nay – 0

The motion passed.

Chair Smyth provided a brief overview of the Historic Preservation Commission, its makeup, and function, and guidelines for Certificate of Appropriateness cases.

Case A25-0683 FizzEd – Certificate of Appropriateness

260 Howard Street Property, LLC, submitted an application for a Certificate of Appropriateness for Major Work for 260 Howard Street, located in the Downtown Boone Local Historic District. The request is for a mural along the south elevation of the building. The scope of work details having artist Josh Johnston paint a previously painted wall with acrylic paint, consisting of Montana spray paint, Golden Mural, and theme paint.

Brandon Wise, Deputy Director of Planning & Inspections, and Amy Snider, Commercial Zoning Administrator, were sworn in by Chair Smyth.

Commission members indicated they had no fixed opinions, no conflicts of interest, and had not participated in ex parte communication regarding this case.

Amy Forrester, owner of FizzEd, and Josh Johnston, mural artist, were sworn in by Chair Smyth.

Chair Smyth asked the applicant if she had any objections to the contents of the meeting packet. Ms. Forrester replied that she had no objections.

Ms. Snider explained the request as it was outlined in the meeting packet.

Ms. Allison Meade, Town Attorney, stated that staff needed to address the specific concerns about the application, noting that the staff report was unclear about the issues. Ms. Snider replied that the main concerns were the mural's size and that it wrapped around the windows. These items were referenced in Appendix D, which was included in the meeting packet.

Chair Smyth directed Commission members to Design Standard 11.3 regarding public art in the Downtown Boone Local Historic District, beginning on page 14 of the meeting packet.

Ms. Meade stated that the standards specifically said that murals were not supposed to wrap around windows and doors. She noted it had been brought to Town Council's attention that there might be some situations where this rule should not apply. However, at this time, the standards did not allow any deviations or exceptions. Ms. Meade stated she and Staff had suggested to the Council that it consider making exceptions to this rule for buildings that did not have historic contributing features. The current rule would even apply to new construction. Ms. Meade wanted to make this information clear because she felt the staff report did not. Other elements for the Commission to consider were the same as those presented by any mural or public art: whether it subtracted from the structure itself and its historic importance, or from the district's overall landscape.

Mr. Wise stated that staff had spoken with Ms. Forrester about reducing the mural's size so it would not surround the windows.

Ms. Forrester noted that the UDO stated murals were allowed only on wall surfaces. No mural or part of the mural was allowed on any part of any roof, fence, window, door, window trim, door trim, or other architectural feature. She added that the back wall of their building was cinderblock and had no window trim. Ms. Forrester stated that the trim would not be painted. She felt that changing the scope of the mural would devalue it enough that she might not be interested in doing it. She explained that the mural was intended to highlight the food culture on Howard Street, noting that Howard Street was comprised of about 80% retail and restaurant uses. Ms. Forrester stated that the new welcome center at the trailhead on Rivers Street provided an excellent opportunity to showcase what Howard Street had to offer. She offered that the mural provided a cultural component, rather than an advertising component. Ms. Forrester felt the mural would look much nicer than the current burgundy spray-painted cinderblock wall. She added that the UDO did not include the word "around" when referring to murals and windows.

Chair Smyth stated that the Historic Preservation Commission followed the guidelines in the Downtown Boone Local Historic District Design Standards, which were in addition to UDO requirements. He noted that the HPC did not regulate content or colors on murals.

Ms. Meade asked if it was correct that staff did not have any problem with the mural content qualifying as a mural rather than a sign because of the lack of sufficient commercial elements. Ms. Snider stated that was correct. Ms. Meade added that if the mural met the other requirements of the standards, she felt that the HPC had the authority to consider the content.

Ms. Meade stated that in historic preservation, there was great concern about not detracting from the view and the integrity of a structure's historic architectural elements, and that windows and doors are considered crucial architectural elements. She noted that it was standard practice across all historic districts that murals or other public art could not be placed around windows and doors, only in bare expanses of previously painted walls.

Vice-Chair Bond stated that this building had never been a particularly outstanding historic structure, noting that it was a junk pile when it was Miller's Army Navy store. She liked the idea of linking Howard Street with the new Rivers Street Park Trail. Vice-Chair Bond stated that the mural looked like 1950s

postcards, which she thought was perfect. She suggested that the artist ensure the mountainscape at the top of the mural looked like Howard's Knob.

There was no public comment for this case.

Chair Smyth noted that the proposed mural would be located around windows, unlike other murals in town, which were on large, blank expanses. Vice-Chair Bond stated that anything that would improve the look of that building would be a work of art. Chair Smyth pointed out that windows and doorways were considered significant architectural features.

Commission Member Gaetano asked if the windows were original to the building. Ms. Forrester replied that the windows had been replaced recently. Chair Smyth added that the window opening in the building was original. Commission Member Gaetano asked if the word "around" meant entirely around, partially around, or just near a window. Chair Smyth noted that there was no definition for "around."

Ms. Forrester stated that there was no great way to modify the mural to keep it away from the windows. Mr. Johnston added that shifting or decreasing the size would alter the character of the mural.

Ms. Meade stated that there may be standards the Commission did not want to apply. However, ignoring standards could set a precedent. She explained that it made no difference whether the features were original or the entire building was original. The building could have been built yesterday, yet, under the standards, murals should not be placed around windows and doors. Ms. Meade counselled Commission members that it was not appropriate for them to deviate from clear standards, but rather to allow Town Council in its legislative role to consider making changes.

Chair Smyth agreed that 11.3 was clear and did not allow them to deviate from the standards. He felt there needed to be more guidance on what "around" meant. Ms. Meade suggested that clearer guidance might be located from the National Park Service (NPS).

Chair Smyth stated that, as a citizen, he would love to see this sort of thing done. However, as a Commission member, the UDO and the historic standards were clear that it was not allowed. Chair Smyth added that he shared Ms. Meade's concern about setting a precedent.

Commission Member Gaetano asked what would happen if the HPC voted to deny the COA. Mr. Wise replied that the applicant could file an appeal of HPC's decision to the Board of Adjustment. He noted that the applicant also had the option to table the case until the standards were modified.

Mr. Johnston stated that the mural painting was not scheduled to begin until next summer, when the weather would be better. Chair Smyth noted that this might allow the Council time to modify the standards so that the mural could be approved. Mr. Wise cautioned that the possible modification might not make the mural 100% allowable.

Ms. Forrester respected the need not to set a precedent. She stated she would appreciate the opportunity to table the case rather than being denied and having to start all over again. Ms. Meade advised that the Chair could table a request unless another Commission member objected. With no objections, Chair Smyth tabled the case until Town Council discussed and possibly made modifications to the standards related to public art and murals in the historic district.

Ms. Meade asked that staff contact Ms. Forrester when the issue went to Council for discussion so that she could participate.

Ms. Forrester, Mr. Johnston, and Ms. Meade left the meeting at 3:40 pm.

Other Matters

Jessica Mitchell, Advanced Planning Specialist, stated that there would be continued discussion on the Boone/Kraut Creek historic marker at the next advisory meeting, as well as an update on the Stoneman's Raid interpretative panel. Ms. Mitchell noted that Town Council considered the proposed text at their meeting last week, and Civil War Trails (CWT) was working on the design proof, which would be included in the advisory meeting packet.

The next advisory meeting of the HPC was scheduled for December 2, 2025, and the next quasi-judicial hearing would be on December 9, 2025.

Vice-Chair Bond announced that on Monday, November 24, 2025, at 3:30 pm at the FARM Café, the Watauga County Historical Society would be posthumously inducting Joe Miller into the Historical Society's Hall of Fame. The old train and cityscape that used to be at Boone Drug had been found and restored and would be running along the wall.

Vice-Chair Bond also announced a celebration of Jane Austen's 250th birthday at the Public Library on Saturday, December 13, 2025, from 11:00 am until 4:00 pm, with a showing of Pride & Prejudice at the Appalachian Theatre on Tuesday, December 16, 2025, at 6:00 pm.

Adjournment

Commission Member Carter made a motion, seconded by Vice-Chair Bond, to adjourn the meeting at 3:45 p.m.

Vote: Aye – 5
Nay – 0

The motion passed.

_____ _____

Vardell Smyth, Chair **Brenda Henson, Board Clerk**

DRAFT

Staff Report
December 9, 2025
Case A25-0511 Rams Rack - Certificate of Appropriateness for Major Work

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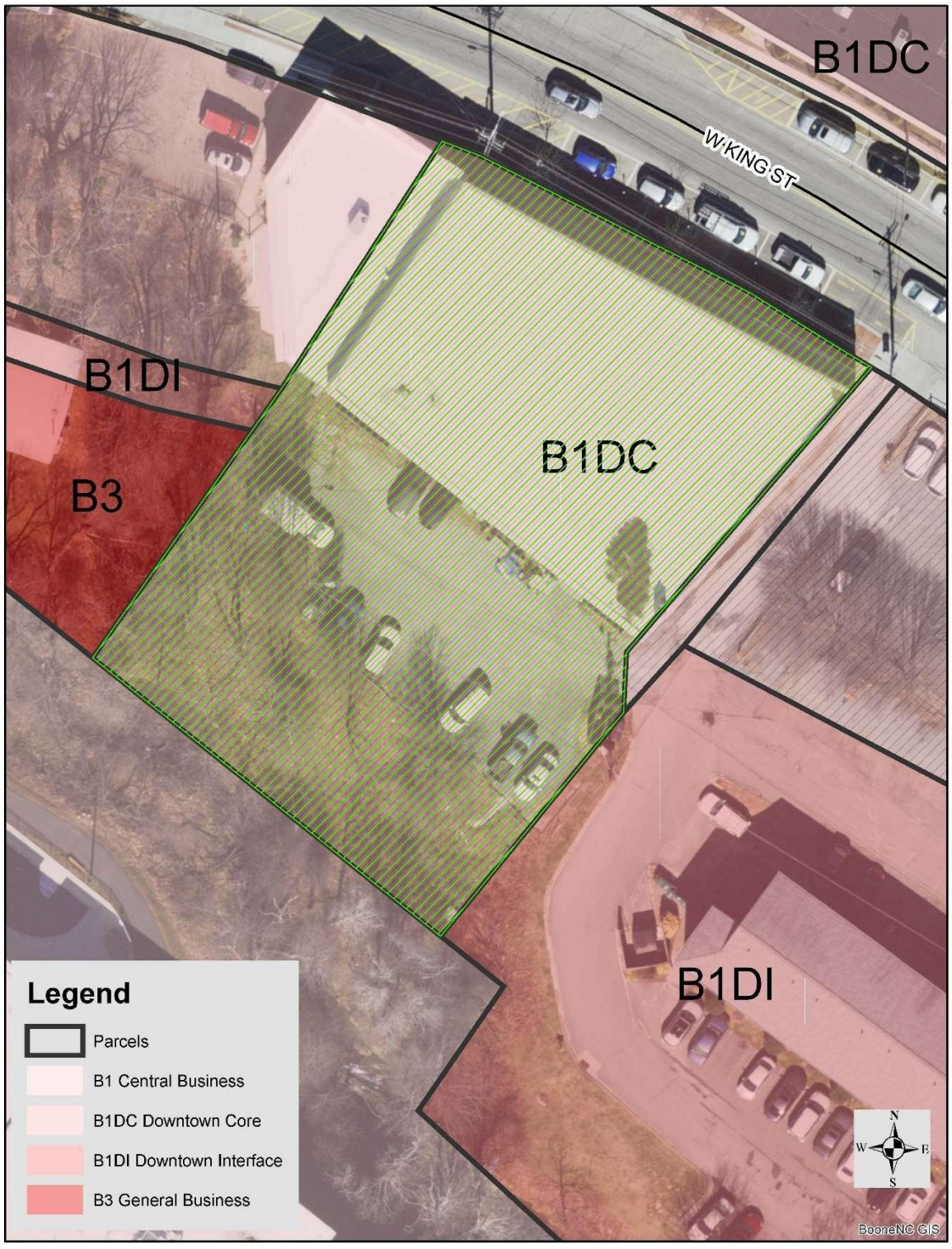
Request

Resort Area Ministries, Inc has submitted an application for a Certificate of Appropriateness for Major Work for 877 W King St located in the Downtown Boone Local Historic District. The request is for roof repairs to the building. The scope of work details changing the flashing around the parapet from tin to aluminum, changing the downspouts from six-inch PVC to a round sheet metal, and altering the chimney by removing the flu cover and adding an aluminum flashed cap. The subject property is outlined in green on the Zoning Map included below.

Pursuant to UDO Article 8, required by Subsection 8.03.01 and the Table of Minor Work and Major Work located in Subsection 8.05.03 and Appendix D, an applicant is required to obtain a (COA) for any roof alterations beyond in-kind repair/replacement of roof coverings or repair/replacement of roof coverings not publicly visible.

Staff Notes can be found throughout the report marked in ***bold green italicized text***.

Zoning Map


B1DC
W KING ST
B1DI
B3
B1DC
B1DI
Legend
Parcels
B1 Central Business
B1DC Downtown Core
B1DI Downtown Interface
B3 General Business
N
W
E
S
BooneNC GIS

Parcel Information

Address:	877 W King St
Property Owner:	Resort Area Ministries
Watauga County Pin:	2900-79-1891-000
Lot Size (Total):	0.67 ac
Jurisdiction:	Town Of Boone
Access:	W King St (State maintained)
SFHA:	Yes (southern portion of lot does not include the building)
Watershed District:	No
Corridor District:	No
NCD:	No
Viewshed:	No
Steep Slope:	No
Current Zoning:	B1 Downtown Core with Downtown Boone Local Historic District Overlay

The B1 Downtown Core and the B1 Downtown Interface Districts encompass the Town of Boone's downtown area and represent, in large measure, the remaining vestiges of the Town's historic character. Regulations in these districts are intended to preserve and maintain a small town, high country atmosphere. Preservation and adaptive reuse of existing historic buildings are encouraged and new construction shall be appropriately scaled to be sympathetic to the existing built environment. Design and regulatory standards for these districts reinforce the character of the downtown as a pedestrian friendly area by encouraging architectural solutions that are visually interesting, and are compatible in scale and character to the surrounding area. To help accomplish this, the area is divided into two (2) districts, each with its own character and scale which contribute to the overall vitality of the downtown area. Identification of the districts is listed below:

A. B1 Downtown Core District: The Downtown Core District is the center of the downtown area and contains the greatest concentration of historic commercial buildings. This district establishes a continuous building facade at the street frontage to strengthen the identity of downtown as a pedestrian destination where pedestrians feel comfortable through the careful selection of building materials, human scale design, and ground floor fenestration. Standards in this district reinforce the historic nature of the existing built environment through regulation of appearance, height, scale and mass.

B. B1 Downtown Interface District: The Downtown Interface District serves as a gateway into the downtown area and as the transition between the B1 Downtown Core District and adjacent zoning districts. Development in this district must be sensitive to issues of compatibility with the Downtown Core District as well as surrounding zoning districts, many which are low-density residential.

Historic districts are established as overlay districts intended to preserve historic landmarks and districts within the Town pursuant to Article 8 Historic Preservation.

Staff Note: After the designation of a historic district, no exterior portion of any building shall be erected, altered, restored, moved, or demolished within such district until after an application for a Statement of Conformity (SOC) for minor work or a Certificate of Appropriateness (COA) for major work has been approved. A COA may be issued subject to any reasonable conditions necessary to carry out the purposes of Article 8 and is required whether or not a building or other permit is necessary. Where requirements conflict, overlay district standards supersede.

Zoning & Use of Adjacent Properties		
	Adjacent Zoning	**Adjacent Land Use**
North	B1 Downtown Core	Business/Professional Office
East	B1 Downtown Core with Historic District Overlay	Restaurant
South	Conditional District B1 Central Business with SFHA Overlay	Multi-Family Dwelling in Mixed Use
West	B1 Downtown Core	Business/Professional Office

Recent Zoning History

10-17-2023 A Statement of Conformity was issued for re-pointing of brick and replacement of glass in exterior doors.

Recent Building History

8-31-2023 A building permit was issued for changing out two heat pump units.

11-6-2023 A building permit was issued for exterior door repairs.

Zoning Analysis (B1 Downtown Core)

The following UDO requirements are required to be met for the proposed project, unless superseded by any requirements of the Downtown Boone Local Historic District overlay.

Per UDO 14.19.06(I)(7): Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinct feature, the new feature will match the old in design, color, texture, and where possible, materials. Missing features will be substantiated by documentary and physical evidence and shall only be replaced with new materials that match the existing historic material in composition, size, shape, texture, pattern, color and detail.

Per UDO 14.19.06(I)(8): Materials that are not visually compatible with the original façade, such as shiny metals, mirror glass, plastic panels, and vinyl windows or doors are prohibited, unless they can be documented through historic images or similar documentation.

Per UDO 25.06.03(D): Publicly visible plumbing vent stacks shall be colored to match the roofing material.

Per UDO 25.06.04(D): Acceptable Roof Materials:

1. Standing seam metal
2. Asphalt shingles
3. Shakes
4. Tile
5. Any manufactured materials which give an appearance of shingles, shakes, or other simulated natural material.

Per UDO 25.06.05(4): Publicly Visible Roofs: Acceptable colors are those equivalent to Sherwin Williams series “Essential” and “Fundamentally Neutral”.

Per UDO 25.06.05(A)(1)(a): Acceptable colors are those equivalent to Sherwin Williams series “Essential” (with the exception of black) and “Fundamentally Neutral” provided that the “LRV” Light Reflection Value of field colors must be below 60.

Staff Note: The proposed project includes changing the current tin flashing to an aluminum with as close of a color match as possible. The material type and color match would be conforming to the UDO standards listed above. Appendix D 7.8 writes that flashing materials should blend in with the roof or chimney color and Appendix D 7.5 writes that metal flashing is preferred over asphalt shingle weaving. The flat roof would not be considered publicly visible from the street view, so the color of the membrane would not be subject to UDO color requirements. TPO (thermoplastic polyolefin) covering used on a flat roof is commonly white and is on several flat roofs downtown; however, the historical images appear to have a dark roof, see included photos. Per the Architectural Survey’s research, the original concrete block material of the façade resembled white marble, but no reference to the roof was provided beyond “parapet roofline coped in metal.” The Survey notes “an interior, concrete block boiler stack rises above the roofline near the southeast corner of the building.” The current conditions of the roof, see photo in exhibit 3, reflect a painted, white, block chimney in that area. Staff noted that per Appendix D 4.2 it is recommended to repair masonry rather than replace or cover it as proposed by the applicant. Appendix D 4.9 discusses repairs for masonry chimneys. Appendix D 7.6 discusses color, writing that deteriorated roof coverings should be replaced with materials that are compatible with the old in color and that white or very light roofing materials are not permitted unless historical appropriate.

Architectural Survey/Designation Report Information

The following three documents are central to the Downtown Boone Local Historic District:

1. Comprehensive Architectural Survey of Downtown Boone, NC – Final Report
2. Report and Recommendation for the Designation of the Downtown Boone Local Historic District, Boone, NC
3. Downtown Boone Local Historic District Standards

The designation report (#2 above), was created using the architectural survey of the downtown area (#1 above) and recommended the Downtown Boone Local Historic District area be designated as a historic overlay district; and the Downtown Boone Local Historic District Design Standards, which are outlined in a separate document (#3 above), are to be applied by the HPC when it considers applications for Certificates of Appropriateness for proposed development within the historic district.

Inventory Classification

The following information has been taken from the designation report starting on page 69. The property inventory found within the report was specifically written to assess the contributing significance and integrity of the district's resources. Integrity, as determined was based upon the following:

1. design integrity, meaning the building's relationship to its original appearance or altered appearance during the period of significance;
2. material integrity, meaning the building's relationship to original materials during the period of significance or replacement materials that mimic the appearance of original materials during the period of significance;
3. locational integrity, meaning the building's relationship to its original location during the period of significance;
4. integrity of association, meaning the building's relationship to its original or adapted use, function, and purpose during the period of significance; and
5. integrity of relationship to the district as a whole, meaning the building's historical importance to the development of downtown Boone's commercial district during the district's four periods of growth within the period of significance (1918-1964).

WT0584 Smithey's Department Store (1941)—CH
877 West King Street
(2900-79-1891-000)

This one-story, trapezoidal, concrete block, commercial block building with mezzanine and basement was completed in 1941 as a new store for N. B. Smithey (1880-1953), proprietor of a regional chain known as Smithey's Department Store, thus replacing an old frame store building located at the other end of King Street near the present site of the Boone Bagelry. The building's façade along King Street was advertised as having "a new and improved type of concrete block, which has a glazed face, and which at a distance strong resembles while marble. This material is believed to survive beneath the current brick veneer that was added around 1980. The brick veneer also covered at least nine window piercings that previously existed on the east elevation of the building.
…

Inventory Classifications:

CA: Contributes to the character of the district based on architectural significance

CH: Contributes to the character of the district based on historical significance related to events or individuals associated with the property

NC: Non-contributing property

VL: Vacant lot

Designation Report

The Designation Report summary is included on the right (in blue), and the full Architectural Survey summary is included below.

Staff Note: The subject property is classified as CH.

CH means the property contributes to the district based on historical significance related to events or individuals associated with the property.

WT0584 Smithey's Department Store (1941)—CH
877 West King Street
(2900-79-1891-000)

… continued:

The current, aluminum-frame, storefront window wall and door configuration of the north elevation was also established sometime during the 1980s, possibly following the pattern of the original storefront arrangement. Vertical panels, possibly of asbestos, cover the parapet walls of the north elevation, apparently obscuring more of the original concrete block. The building, representing the expansion of Boone's downtown district during the town's

Architectural Survey

WT0584 Smithey's Department Store (1941)
877 West King Street

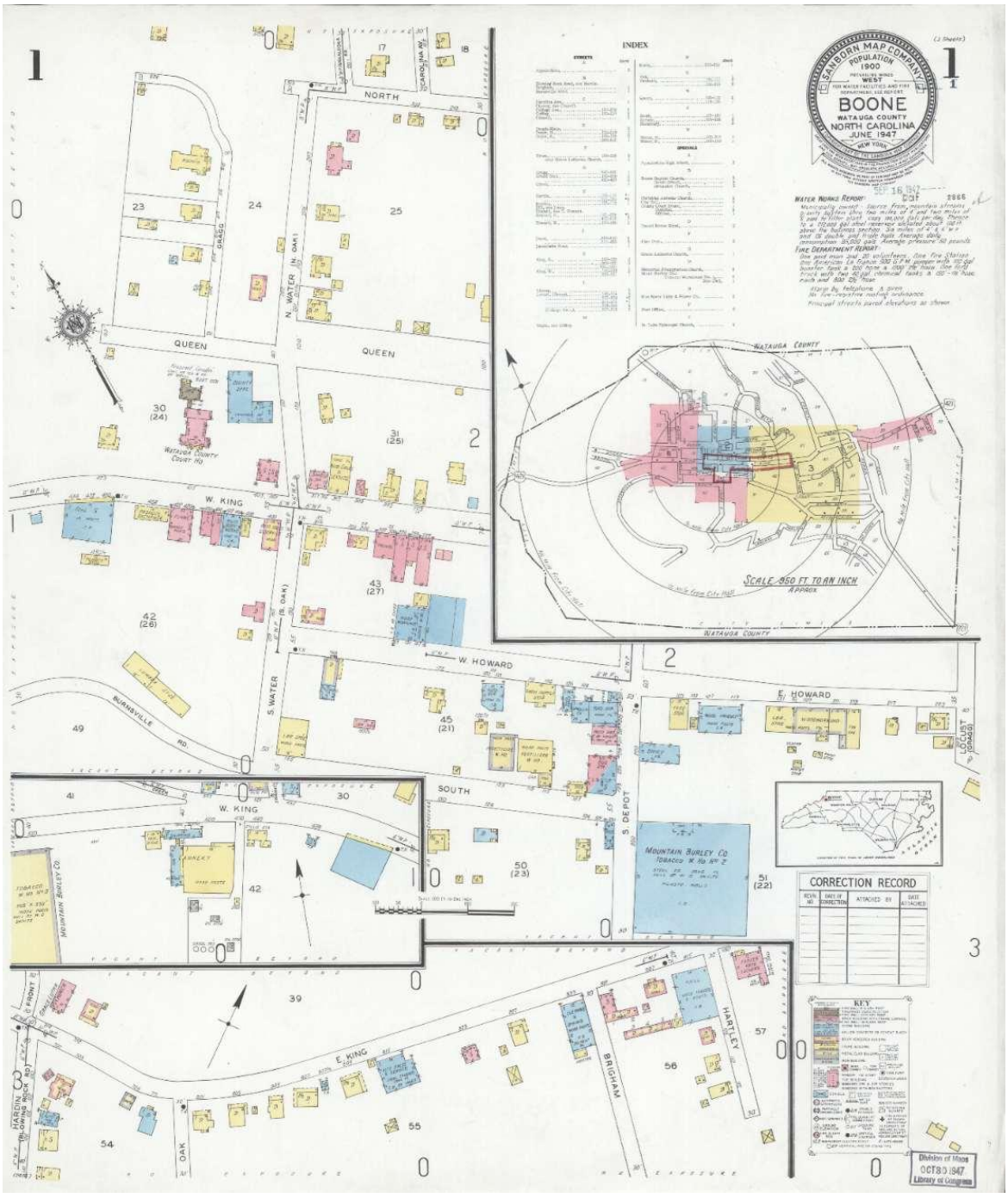
This is an update to a previous survey of this property completed in 1988 and a survey update completed in 2002. Built for N. B. Smithey (1880-1953) and completed in January 1941, this was not the first Smithey's location in Boone. During the 1930s, Smithey's, a regional chain based out of Wilkesboro, had a store in a frame building located on the lot just east of the Daniel Boone Hotel site, presently occupied by WT0820. The new, one-story building with basement was described as being "the city's largest mercantile building, its frontage on King Street being more than twice that of any other retail establishment" (Watauga Democrat, July 25, 1940). Walls of the store were composed of "a new and improved type of concrete block, which has a glazed face, and which at a distance strongly resembles white marble." This façade treatment is visible in a late 1960s George Flowers image in the Paul Armfield Coffey Collection (not yet online), where a metal, cable-hung awning with the lighted name "Smithey's" attached to the top is also visible. N. B. Smithey personally supervised the construction, which also included a service station just to the west of the main store building (no longer extant). The store opened for business on January 23, 1941 (Watauga Democrat, January 23, 1941). It is noteworthy, however, that the 1947 Sanborn Map shows this building as a concrete block building with a frame front porch, the latter element not surviving. Smithey's continued to operate long after N. B. Smithey's death, presumably under the direction of G. M. Kirkpatrick and his wife Rose Marie Smithey Kirkpatrick, who owned the property until 1983. The Kirkpatricks sold the building and surrounding property to Margaret and Kyle Hayes in 1983 (Deed Book 237, Page 669), whose executors sold it to Suzanne and Herbert Miller in 1994 (Book of Record 327, Page 756). The Millers sold the building in 1998 to Resort Area Ministries (Book of Record 454, Page 405), which has operated RAM's Rack, a thrift store, in the building since that time.

Today, this is a one-story, trapezoidal, high-ceilinged concrete block building with basement that is clad in running bond brick veneer added around 1980. This veneer treatment covered over at least nine window piercings that were visible on the east elevation of the building in 1950, seven of them at the mezzanine level (Pal-Bla-02-004). The current, aluminum-frame, storefront window and door configuration of the north elevation was also established sometime during the 1980s, although it may occupy the original alignment; indeed, this configuration is visible in the late 1960s George Flowers image referenced above. Running from west to east, this aluminum-frame storefront configuration consists of three plate glass windows, followed by a double aluminum and glass door with a single-light transom, followed after a short span of brick wall by three complexes of four plate glass windows, each divided from one another by another short span of brick wall. The doorway and three-section plate glass window of the east part of the elevation is then repeated in reverse at the west end. Not noted in previous survey reports are the yellow vertical panels—possibly of asbestos—extending from the parapet wall metal coping down to the top of the windows underneath the metal-frame, vinyl awning on the north elevation. These panels were visible in the 1988 survey images, but it is not known when they were installed. While the interior was not officially surveyed as part of this survey visit, survey team members familiar with the interior noted that the interior remains similar to that described in the 1988 survey report, except that the floors have been carpeted.

The Casey and Casey law office building erected recently on the site of the old Smithey's gas station largely obscures the west elevation, aside from the upper portion of the running bond brick wall beneath the stepped parapet roofline coped in metal. The east wall is essentially featureless, running bond brick, aside from the stepped parapet clad in metal coping and the brick pilaster feature at the northeast corner of the building. An interior, concrete block boiler stack rises above the roofline near the southeast corner of the building. The south elevation has a uniform roofline coped in metal, below which, on the mezzanine level of the first floor, are six widely spaced, one-over-one, double-hung sash windows, two of which have rowlock sills. The four without rowlock sills appear to be additions completed since the 2002 survey. The first floor level offers a single, one-over one, double-hung sash window with rowlock sill at the extreme west end, as well as four larger, irregularly spaced, one-over-one, double-hung sash windows with rowlock sills near the east end. Three other smaller window openings have been bricked in since 2002. A single, metal door is present at the far west end of the basement level, and a roll-up garage door occupies the garage bay opening at the basement level near the east end of the elevation. Just east of the garage door, a new, metal door has been added near the southeast corner of the basement level since 2002, with a low, concrete cheek wall protecting this entrance.

Library of Congress - Sanborn Fire Insurance Maps

The Library of Congress has made Sanborn Fire Insurance Maps from 1928 and 1947 accessible. As these years fall within the historic district's period of significance (1918-1964), these maps will be used when the property in question, or area of the property in question, can be viewed within these maps. The content of the Library of Congress online Sanborn Maps Collection is in the public domain and is free to use and reuse.



Sanborn Fire Insurance Map from Boone, Watauga County, North Carolina. Sanborn Map Company, Jun, 1947. Map. https://www.loc.gov/item/sanborn06383_002/.

Downtown Boone Local Historic District Design Standards and Handbook Analysis

Narrative

Relevant design standards from UDO Appendix D, Downtown Boone Local Historic District Design Standards and Handbook, Design Standards for Commercial Properties within the District, are outlined below. These Standards for Commercial properties are intended to address many of the most common issues to arise during renovations, additions, and new construction in the District. Where the Standards are silent on a particular issue or concern, the HPC will rely upon the Secretary of the Interior's Standards for Rehabilitation to guide their review of the proposed work under the COA process and any subsequent recommendations.

Design Standards for Commercial Properties

"Commercial Property" Defined

A **commercial property** within the District is any property whose purpose-built function at the time of construction was primarily to serve a commercial, institutional, or governmental purpose or use. More specifically, commercial properties include 1) any building whose original configuration included commercial, institutional, or governmental uses on the ground floor accessed via the entrance(s) located on the primary elevation, even if residential spaces were available elsewhere in the building (such as a commercial block building with stores on the first floor and apartments on the second floor), or 2) any building with a garage bay or bays on the ground floor accessed via the entrance(s) located on the primary elevation and commercial, institutional, or governmental spaces located elsewhere in the building (such as a garage building with an office or store located on an upper floor or in the basement).

Any property within the District whose purpose-built function at the time of construction was to serve solely as a residence for long-term (greater than 30 days) occupants, even if the property currently serves a commercial use, is still considered a residential property. For standards for residential properties, please see the "Standards for Residential Properties within the District" section elsewhere in this publication.

1. Storefronts, Upper Facades, Side Elevations, and Rear Elevations

Downtown Boone is dominated by historic properties that reflect the commercial block architecture that was so common and influential during the period from 1910 to 1960 in many American towns and cities. In the case of the District, commercial block development began around 1919 and continued to the early 1960s. Central to this architecture is the importance of the storefront itself, whose familiar architectural details—large display windows, transom bars and windows, clerestory recessed entries, and prominent cornice and corbelling work—frequently signaled to customers not only the function of a business but also the quality of its wares. Many other elements—including projecting, flat awnings anchored to the façade with cables or steel rods, or fabric awnings amounted on metal frames, hinged or unhinged—provided customers with shelter from the elements while window shopping or otherwise enhanced the shopping experience. After 1950, many of these architectural details were removed, either in response to decay of these features or in an effort to "update" a building to the stylistic preferences of a later time. One such example is the Appalachian Theatre on West King Street, whose original Art Deco marquee and structural glass were removed during the late 1970s in response to safety concerns. Other elements—most notably transoms and clerestory windows, as well as the details of upper facades—were simply covered over and may still survive today underneath modern additions to the facades of many of Boone's historic downtown properties in the District.

Similarly, secondary and tertiary elevations of many of Boone's historic commercial properties are vital to the character and integrity of its downtown commercial district. Often, significant side (secondary) elevations are located on corner buildings adjacent to two or even three streets, but sometimes such details are visible on mid-block buildings separated from nearby buildings by an alleyway or a vacant lot.

Many of these buildings retain original fenestration, entrances, brickwork, and/or advertisements (some of the "ghost ad" variety) that contribute in their own significant way to the architectural character of the downtown historic district. Similarly, rear (tertiary) elevations can possess many of these same characteristics and also reveal much about the history of a property because of their frequently utilitarian design intended for the workers, owners, and residents who most often saw these rear elevations.

In an effort to preserve what remains of the District's historic commercial architecture and encourage the reconstruction or rehabilitation of elements that have been removed or covered over, the standards for storefronts, upper facades, and other elevations are intended to facilitate preservation and reconstruction wherever possible while also addressing new construction and its compatibility with the rest of the District.

1.3 In making changes to storefronts or other elevations to comply with code or accessibility requirements, avoid destroying historic materials and features and select configurations that have minimal intrusion or impact on the character-defining aspects of the property in question.

1.8 Facade details of side (secondary) and rear (tertiary) elevations should always be retained and preserved if possible. When repairing these features, retain and preserve in place original elements as much as possible. If repair is not possible, replace damaged elements with materials that match the originals in composition, design, texture, color, and other visual qualities. If there is evidence of a rear public entrance that is no longer extant, use historical research and other evidence to reconstruct or provide an equivalent rear entrance whenever possible.

1.9 Utility lines, mechanical equipment, pipes, garbage receptacles, and other service items on side (secondary) and rear (tertiary) elevations—whether old or new—should be screened from public view whenever possible. Unnecessary or out-of-service elements should be removed unless they are essential to the historic character of the property.

4. Masonry

Many commercial properties in the District are composed of brick or stone masonry, and it is imperative that original masonry materials—many of which have a weathered appearance reflecting the history of the building—remain preserved whenever possible. For this reason, masonry should never be cleaned unless it is determined that perceived "dirt" is actually accumulated deposits and not the effects of weathering. If cleaning is pursued, always use the gentlest method available, preferably with low pressure water, a mild, non-caustic detergent, and a natural bristle brush where needed. In addition, while re-pointing is sometimes necessary when mortar is missing or moisture problems have developed, it should only be completed in a manner that avoids smearing the mortar onto the surface of the masonry.

Terracotta, stucco, and concrete are other masonry elements that are occasionally found on historic commercial properties in Boone. In addition, many historic commercial properties feature chimneys, arches, quoins, lintels, sills, cornices, corbelling, and pediments that are all essential to the historic character of the building in question.

4.2 Whenever feasible, historic masonry should be repaired rather than replaced or covered. When replacement is necessary, it should always be completed using traditional materials of like kind and quality to the originals that are being replaced.

4.8 All historic masonry architectural features, including cornices, moldings, chimneys, and other decorative flourishes, should be retained as they are essential to the architectural character and integrity of the building.

4.9 Deteriorated masonry chimneys and boiler stacks should never be shortened or covered with parging. Instead, the original chimney configuration should be restored on historic properties using historically appropriate masonry and mortar materials. In addition, the design of the original chimney should be maintained, including corbelling, clay chimney pots, and other original decorative features. Metal chimney caps may be added if they are unobtrusive and do not alter the design of the chimney, but metal vent pipes that protrude through the top of the chimney are not appropriate. Wooden box chimneys and chimneys made of simulated brick or stone are also inappropriate.

7. Roofs

Among the most significant and important of the distinguishing characteristics of historic properties are the roof form and pitch, which are often essential to identifying the architectural style of a building. For this reason, it is imperative that every effort be made to preserve and maintain the original roof configuration and materials on historic properties, including dormers, turrets, balustrades, parapets, etc. While historic roofing materials should always be preserved whenever possible—especially if they consist of specialty roofing materials such as slate or tile—many roofing elements will require replacement due to deterioration and age.

Many of the commercial buildings in the District originally featured flat or gently sloping roofs behind a parapet wall along the primary elevation and sometimes the secondary elevations.

7.1 Significant changes to roofs of historic properties are not permitted, including the raising or lowering of pitch, the removal or alteration of widow's walks, dormers, turrets, balustrades, bargeboards, quarter round, cornices, corbelling, parapets, coping, dentil moldings, brackets, eaves, rafter tails, weather vanes, or lightning rods, the cutting back of roof overhang, and the replacement of historic roofing materials with modern materials that do not replicate the original appearance of the historic property's roof. Open rafter tails and similar roof trim elements should never be obscured by boxed soffits or similar treatments. Specialty roofing materials, such as tile or patterned slate, should never be replaced with composition shingles. Original roofing materials should never be covered or replaced with a different type of roofing material, such as installing a standing seam metal roof over a slate or asphalt shingle roof.

7.2 Whenever possible, deteriorated soffits, fascia, moldings, brackets, eaves, rafter tails, cornices, coping, and other important roof components should be repaired. If replacement is necessary, it should be completed using historic materials if possible, and at minimum with equivalent materials that replicate the appearance, configuration, size, scale, and composition of the original historic materials. Underlying roofing components are just as important. For example, tongue-and-groove soffit lumber should never be replaced with plywood, and whenever possible, damaged or deteriorated roof decking should be replaced with similar materials rather than modern materials that are not historically appropriate to the building.

7.3 Dormers and gables should never be added to the primary and secondary elevations visible from the street (unless replacing an historic element that had been previously removed) and should be added to tertiary elevations only when it can be shown that they are appropriate for the building style. The addition of dormers to commercial block buildings is especially inappropriate and should be avoided on all occasions and reversed in cases where this change has already been

made. Skylights, solar panels, power ventilators, and mechanical equipment should always be restricted to the tertiary portions of the roof or areas behind parapet walls and hidden from the street. Screening materials should never be erected on top of a roof to obscure such elements.

7.4 It is important to provide adequate ventilation for roofing components, as excessive heat buildup under the roof can shorten the life of shingles. Ventilators should be located in an inconspicuous place, preferably on tertiary roof slopes not visible from the street, and low-profile mechanical or power ventilators are best. Soffit vents are permissible as long as the original soffit lumber is retained. On historic properties that already possess louvered, wood, gable vents, these should never be covered or replaced with metal louvers.

7.5 Tar or roofing cement should never be used as a substitute for properly installed flashing. In most instances, metal flashing is always preferred over asphalt shingle weaving, particularly in valley flashing situations.

7.6 Rooftop additions to existing commercial buildings, including those intended to accommodate elevator shafts, bars, decks, kitchen prep areas, social areas, or solar arrays, or to otherwise enable recreational use of open rooftops, are generally not appropriate if any portion of the rooftop addition is visible from the street-level right of way adjacent to the primary elevation.

7.6.A. Rooftop additions should never be more than one story (10 feet) in height from the roof surface of the existing building.

7.6.B. Rooftop additions should never destroy or damage character-defining features of an existing building, and they should be designed to be compatible with both the size, scale, color, material, form, style, and character of the building on which they are erected and the historic district as a whole. Rooftop additions should be subordinate to the existing building in size and design, and compatible with its massing, scale, materials, and features. Nevertheless, additions should be sufficiently differentiated as new elements from original components of the existing building.

7.6.C. Rooftop additions should be positioned on the roof to eliminate the possibility of the structure being visible from the street-level right of way located along the building's primary elevation. For buildings located on corner lots, additions should not be visible from the streetside secondary elevation, either. In the vast majority of cases, this will mean positioning the addition within the one-third portion of the rooftop located closest to the tertiary elevation of the existing building. In many cases, rooftop additions are most feasible on buildings at least four stories in height located adjacent to taller buildings or existing high party walls that will help shield the rooftop addition from street-level view.

7.6.D. Rooftop additions should maintain the lowest possible profile in their construction, so that walkways, decks, seating areas, solar arrays, and similar components are built as close as functionally possible to the original roof surface of the existing building.

7.6.E. Rooftop additions must be approved through the Conditional District zoning process prior to being considered under the Certificate of Appropriateness process associated with these Standards.

7.6 Deteriorated roof coverings should be replaced with materials that are compatible with the old in composition, size, texture, pattern, and color once the structural integrity of the roof decking is assured. If at all possible, the use of historic replacement materials for slate, clay tile, terra cotta, pressed metal shingle, and wood shingle roofs is always preferred over new materials. Unless historically appropriate to the building in question, or unless totally obscured by street view by

parapets, white or very light roofing materials are not permitted. Exposed tarpaper rolls are never permitted as a roofing material.

7.7 Historically appropriate metal gutters, downspouts, and other drainage devices are common on historic properties and should always be retained whenever possible, as they provide important protection for both the roof and the foundation of the property. Built-in gutters that are an important part of the architecture of the building should always be repaired rather than replaced if they become deteriorated. When metal finishes must be replaced because of rust or other deterioration, replace ONLY deteriorated material or detail with new materials that match the previously existing historic material in composition, size, shape, texture, pattern, color, and detail. Replacement gutters and downspouts should never conceal or interfere with architectural trim details. It is not appropriate to paint metal finishes, such as metal downspouts or copper trim, if these items were historically unpainted.

7.8 Flashing materials should blend in color with the roof or chimney color. Whenever possible, historically appropriate splash blocks at the base of downspouts should be used to direct water away from the building's foundation. (Please note that the Town of Boone's storm water detention requirements may apply to the use of splash blocks.)

7.9 Roof coping on commercial buildings with original flat roofs was typically made of terracotta tile. Modern coping systems that are often used in conjunction with rubber membrane roofs, especially if they employ metal coping in a color that contrasts with the masonry walls they cover, are inappropriate.

10. Utilities and Energy Retrofit

Updating utilities and energy systems in historic properties is a common and natural event in the life of a building. As technology improves and environmentally friendly mechanical systems become more readily available, many property owners will desire to improve the efficiency of their historic properties. The HPC encourages the installation, rehabilitation, or replacement of mechanical systems—in compliance with local building codes and utility company standards—with systems that will improve the overall efficiency of those properties. That said, these mechanical systems, when installed in or on an historic property, must comply with certain essential standards.

10.1 Install utilities and mechanical equipment in areas and spaces that will require the least possible alteration to the plan, materials, and appearance of the building. Installation at the rear (tertiary elevation) of the building, if feasible, is preferred.

10.2 It is NOT appropriate to locate mechanical equipment farther forward on the property (i.e. toward the street facing the primary elevation) than the midpoint of the primary building.

10.3 Ductwork, piping, fuel tanks, plumbing vents, solar collectors, and satellite dishes should not be visible from the street. Ground-level equipment that can be seen from the street should be screened with shrubbery or fencing. Rooftop equipment should be screened with existing parapet walls or located toward the portion of the roof nearest the tertiary elevation.

10.4 If an interior location is not feasible, place utilities and mechanical equipment and conduit in inconspicuous locations and/or conceal with architectural elements such as downspouts.

10.5 The location of solar collectors or solar panels should be aligned on the building's roof in the direction of greatest effectiveness with a minimized view of such equipment from the primary elevation of the structure. artwork is congruous with the character of the historic district and the values of historic preservation served by the historic district.

Preservation Brief

Exhibit 4 is a Preservation Brief on Roofing for Historic Buildings published by US Department of the Interior National Park Service.

Automatic Conditions of Approval

The following conditions are automatically included and a part of any approval.

- Where there is a conflict between the application information and the plans submitted June 26, 2025, the plans control. Insignificant deviations may be permitted to comply with the requirements of the UDO.
- Any commitments and representations concerning the proposed exterior modification made by the applicant or its representatives at the public hearing shall also become a condition of the permit, and a basis for a stop work order and/or permit revocation if violated.
- The applicant shall submit the necessary applications, plans, details and specifications which meet the requirements of the Town Code, UDO, Building Code and any other applicable codes for review and approval necessary to issue Zoning and Building Permits.

Historic Preservation Commission Procedure

In considering this application for a COA the HPC shall base their decisions solely on the basis of competent, material and substantial evidence entered into the record via the application packet and sworn testimony at the public hearing.

When making the motion for approval, the Commission should consider that unless the Commission explicitly orders otherwise, every approval is conditioned upon the development being completed in accordance with the plans submitted by the applicant, the commitments and representations concerning the proposed development made by the applicant and representatives at the public hearing, and final conformity with all requirements of the UDO.

The question before the Historic Preservation Commission is whether or not the proposed development is congruous (i.e., in agreement, in harmony) with the special character of the historic district. If the proposed exterior modification is congruous, the Commission shall issue the requested COA. If the proposed exterior modification is incongruous (not in agreement, not in harmony) with the special character of the historic district, the Commission shall deny the requested COA. The Commission shall approve, approve with conditions, or the deny the COA by majority vote.

Vote: The proposed development ☐ **is congruous OR** ☐ **is incongruous** with the special character of the Downtown Boone Local Historic District and is approved subject to the following conditions (as warranted):

1. Conditions:

Criteria for Conditions: The Commission may issue approval subject to reasonable conditions necessary to carry out the purposes served by the historic district (see G.S. 160D-940, 160D-947(a)). The purposes of the historic district are to (i) safeguard the heritage of the town insofar as the Historic District embodies important elements of the town's culture, history, architectural history, and/or prehistory, and (ii) to promote the use and conservation of the district for the education, pleasure, and enrichment of the residents of the town and/or the State as a whole, see North Carolina G.S. §160D-940, 944, 947(a).

Historic Photos

Below is a collection of historical photos of the subject property, obtained through a collaboration with Digital Watauga. The photos are displayed in their original size and resolution, as well as in a cropped version that highlights the main features of interest. For each photo, there is a citation.

Staff Note: Planning Staff did not alter or edit the photos in any way, but only arranged them in this document for presentation purposes. Photos attached here are the best available with the clearest and most complete images of the subject property. Any commentary on the images is from the Digital Watauga technician(s) who found and sent the images to Planning Staff.



Image courtesy of the Crayte Teague Collection, Digital Watauga Project



Image courtesy of the Crayte Teague Collection, Digital Watauga Project

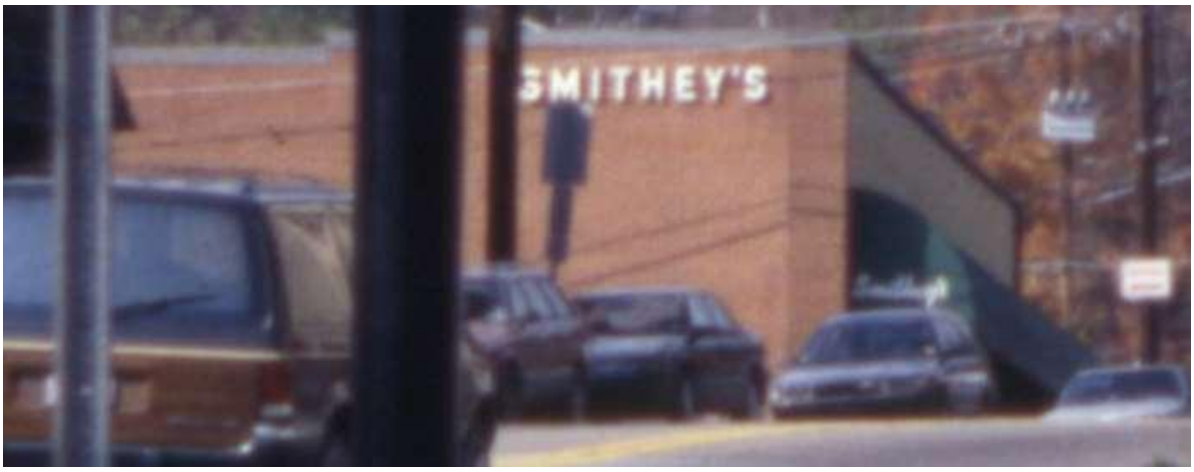


Image courtesy of the Downtown Boone Development Association Collection, Digital Watauga Project



Image courtesy of the Downtown Boone Development Association Collection, Digital Watauga Project



Image courtesy of the Palmer Blair Collection, Digital Watauga Project



Image courtesy of the Palmer Blair Collection, Digital Watauga Project

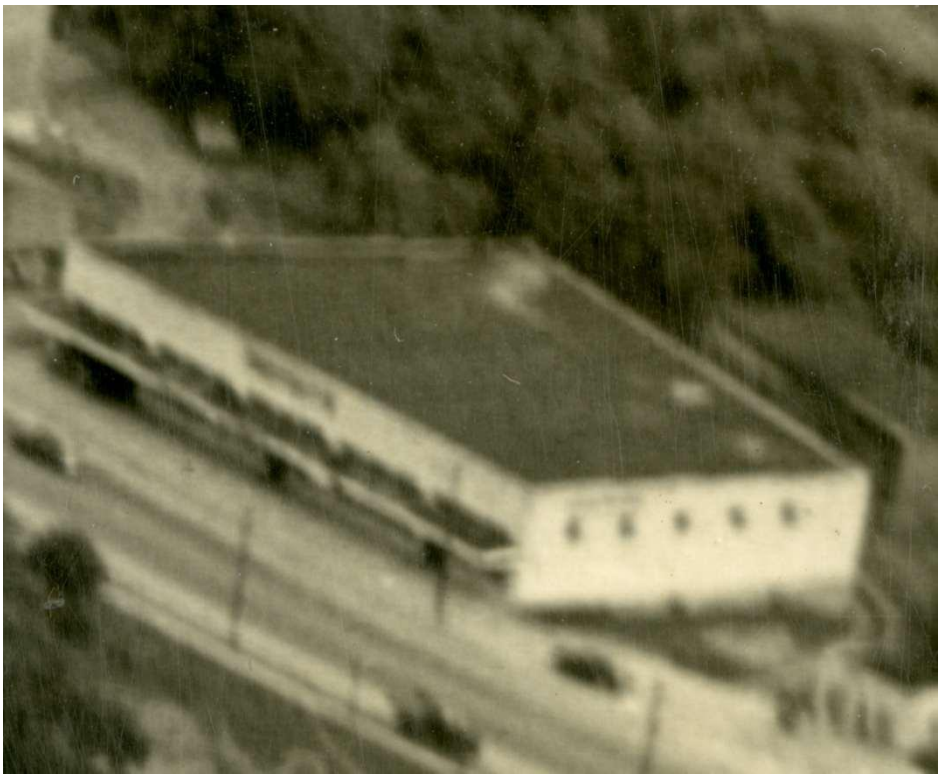


Image courtesy of the Palmer Blair Collection, Digital Watauga Project



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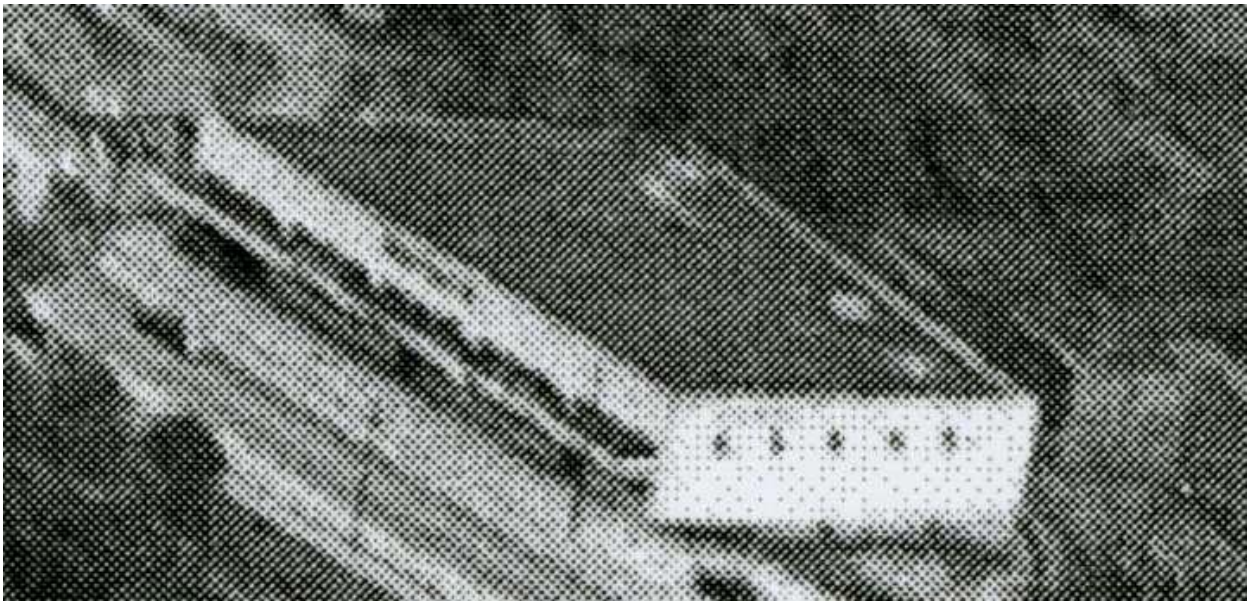
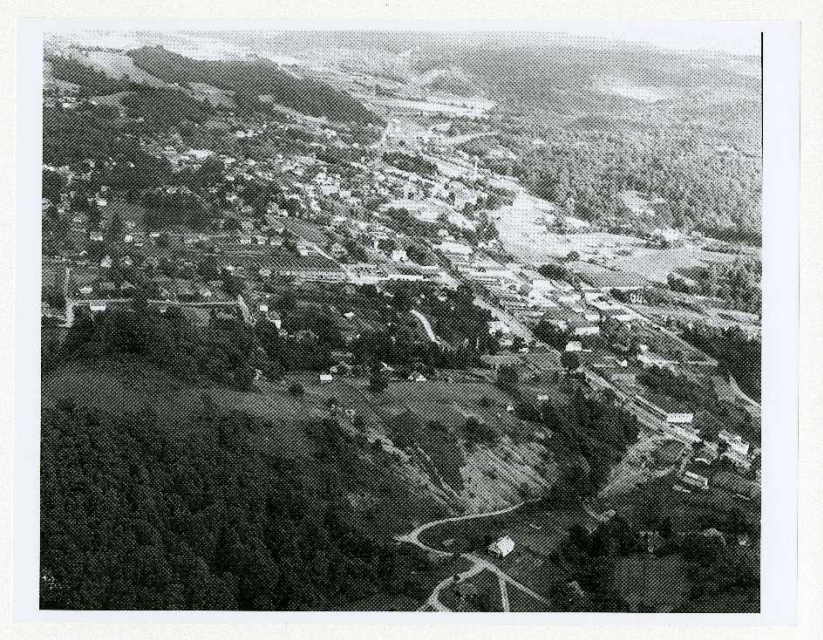


Image courtesy of the Palmer Blair Collection, Digital Watauga Project



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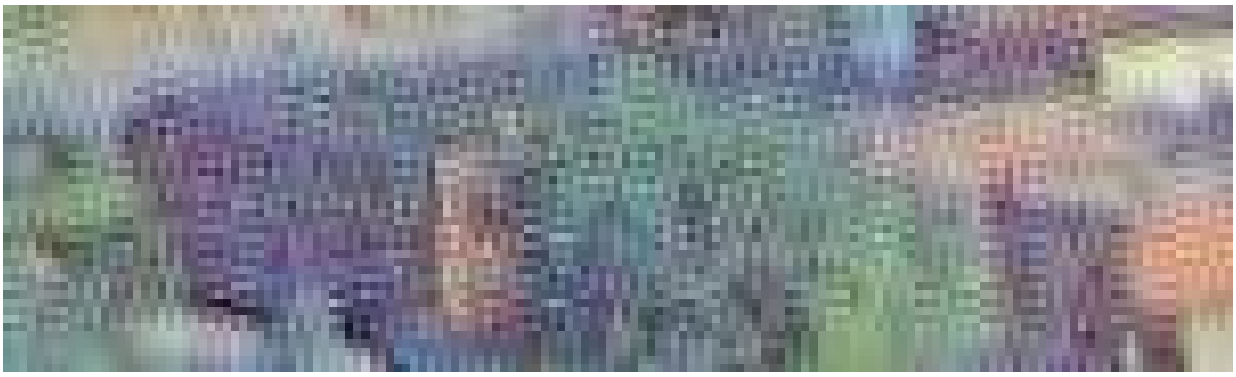


Image courtesy of the Bobby Brendell Postcard Collection, Digital Watauga Project

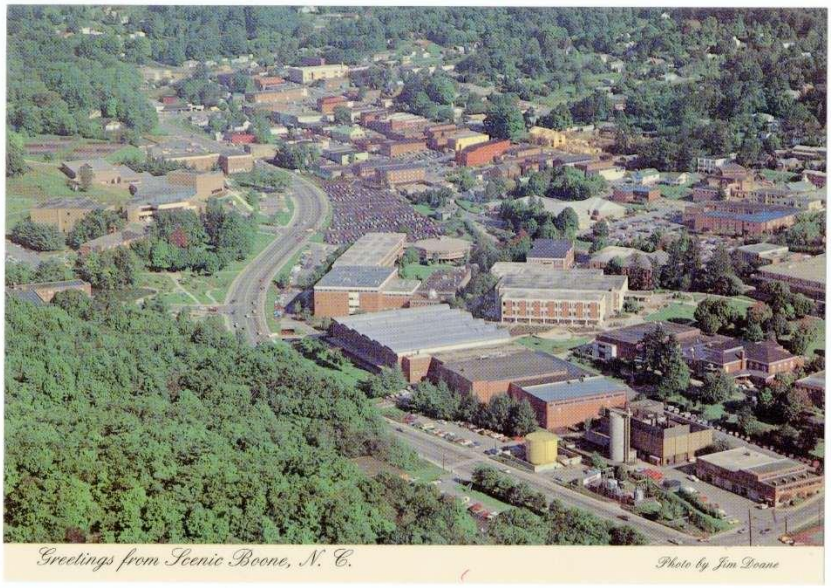


Image courtesy of the Bobby Brendell Postcard Collection, Digital Watauga Project

Roof Replacement - While most of the work will not be visible, the flashing around the parapet will be altered. In the attached picture, the flashing is made of tin. The new flashing is aluminum. We will try to match the color as closely as possible. You will also note that the downspouts are made of 6" PVC pipe. We will construct new downspouts out of sheet metal which will be rectangular instead of round (these will be more likely to match the early historical character of the building). The chimney will also be altered as we will remove the visible flu cover and cap the chimney with aluminum flashing. The chimney also has paint which is degrading and causing potential leaks. Our plan is to wrap the chimney with white TPO to waterproof it.

877 WEST KING STREET / BOONE, NC
RAM'S RACK THRIFT SHOP
RE-ROOF WITH 2 LAYERS OF 2.6" POLYISOCYANURATE INSULATION

1) REMOVE THE EXISTING ROOFS DOWN TO THE ORIGINAL BUILT-UP SYSTEM.

2) MECHANICALLY ATTACH TWO LAYERS OF 2.6" POLYISOCYANURATE TYPE INSULATION. THIS SHALL PROVIDE AN INSULATING VALUE OF R-30.

3) PROVIDE AND INSTALL A ***GAF*** MECHANICALLY ATTACHED SYSTEM OF .060 WHITE REINFORCED TPO MEMBRANE.

4) NEW FLASHING SHALL BE INSTALLED ALONG ALL PARAPET WALLS, CURBS AND ROOF PENETRATIONS PER MANUFACTURERS SPECIFICATIONS.

5) THE NEW PARAPET FLASHING SHALL EXTEND UP, COMPLETELY COVERING THE INTERIOR SIDE TO HELP INSURE A WATERTIGHT SYSTEM.

6) ALONG ALL NON-GUTTERED PERIMETERS, PROVIDE AND INSTALL A "POSITIVE FLOW" TYPE GRAVEL STOP TO HELP INSURE PROPER DRAINAGE. THIS SHALL BE FABRICATED FROM TPO LAMINATED SHEET METAL.

7) ALONG THE NEW GRAVEL STOP, PROVIDE AND INSTALL A NEW FACE COVER SHOP FABRICATED FROM 24 GAUGE PRE-FINISHED SHEET METAL. STANDARD COLOR OF OWNERS CHOICE.

8) REWORK ALL INTERIOR ROOF DRAINS.

9) PROVIDE AND INSTALL NEW THRU-WALL DRAINS SHOP FABRICATED FROM TPO LAMINATED SHEET METAL.

10) PROVIDE AND INSTALL NEW CONDUCTORS ALONG WITH NEW 5" X 6" DOWNSPOUTS SHOP FABRICATED FROM 24 GAUGE PRE-FINISHED SHEET METAL. STANDARD COLOR OF OWNERS CHOICE.

11) UPON COMPLETION, ***JOHNSON ROOFING CONCEPTS, INC.*** SHALL PROVIDE A 2 YR. WATERTIGHT GUARANTEE.

12) A 20 YR. MANUFACTURERS MATERIAL AND LABOR WARRANTY IS ALSO INCLUDED UNDER THIS CONTRACT.

13) ANY DETERIORATED DECKING, WOOD NAILERS, ETC DISCOVERED SHALL BE REPLACED ON A TIME PLUS MATERIAL BASIS AND ADDED TO THIS QUOTED PRICE.

14) DISPOSE OF ALL DEMOLITION MATERIALS IN THE PROPER MANNER.

ALTERNATE #1: PROVIDE AND INSTALL A NEW 30" X 36" TRI-BUILT ROOF HATCH.

ALTERNATE #2: PROVIDE COMPLETE ROOF TEAR OFF DOWN TO THE WOOD DECK.

BASE PROPOSAL TOTAL: $107,647.00

ALTERNATE #1: IF APPROVED, ADD $1,297.00 TO THE BASE TOTAL.

ALTERNATE #2: IF APPROVED, ADD $29,850.00 TO THE BASE TOTAL. $138.794

Price Valid For 30 Days

Terms: 40% Down, Balance Due Upon Completion.

Thank you for the opportunity of quoting this project, we trust that it meets your approval.

Brian Mace

President

ACCEPTANCE OF PROPOSAL & TERMS

Signature: _____

Date of Acceptance: _____




DO NOT LEAVE
ANY ITEMS!


NO
LOITERING

4 PRESERVATION BRIEFS

Roofing for Historic Buildings

Sarah M. Sweetser

U.S. Department of the Interior
National Park Service
Cultural Resources
Heritage Preservation Services



HABS

Significance of the Roof

A weather-tight roof is basic in the preservation of a structure, regardless of its age, size, or design. In the system that allows a building to work as a shelter, the roof sheds the rain, shades from the sun, and buffers the weather.

During some periods in the history of architecture, the roof imparts much of the architectural character. It defines the style and contributes to the building's aesthetics. The hipped roofs of Georgian architecture, the turrets of Queen Anne, the Mansard roofs, and the graceful slopes of the Shingle Style and Bungalow designs are examples of the use of roofing as a major design feature.

But no matter how decorative the patterning or how compelling the form, the roof is a highly vulnerable element of a shelter that will inevitable fail. A poor roof will permit the accelerated deterioration of historic building materials—masonry, wood, plaster, paint—and will cause general disintegration of the basic structure. Furthermore, there is an urgency involved in repairing a leaky roof since such repair costs will quickly become prohibitive. Although such action is desirable as soon as a failure is discovered, temporary patching methods should be carefully chosen to prevent inadvertent damage to sound or historic roofing materials and related features. Before any repair work is performed, the historic value of the materials used on the roof should be understood. Then a complete internal and external inspection of the roof should be planned to determine all the causes of failure and to identify the alternatives for repair or replacement of the roofing.

Historic Roofing Materials in America

Clay Tile: European settlers used clay tile for roofing as early as the mid-17th century; many pantiles (S-curved tiles), as well as flat roofing tiles, were used in Jamestown, Virginia. In some cities such as New York and Boston, clay was popularly used as a precaution against such fire as those that engulfed London in 1666 and scorched Boston in 1679.

Tiles roofs found in the mid-18th century Moravian settlements in Pennsylvania closely resembled those found in Germany. Typically, the tiles were 14–15″ long, 6–7″ wide with a curved butt. A lug on the back allowed the tiles to hang on the lathing without nails or pegs. The tile surface was usually scored with finger marks to promote drainage. In the Southwest, the tile roofs of the Spanish missionaries (mission tiles) were first manufactured (ca. 1780) at the Mission San Antonio de Padua in California. These semicircular tiles were made by molding clay over sections of logs, and they were generally 22″ long and tapered in width.



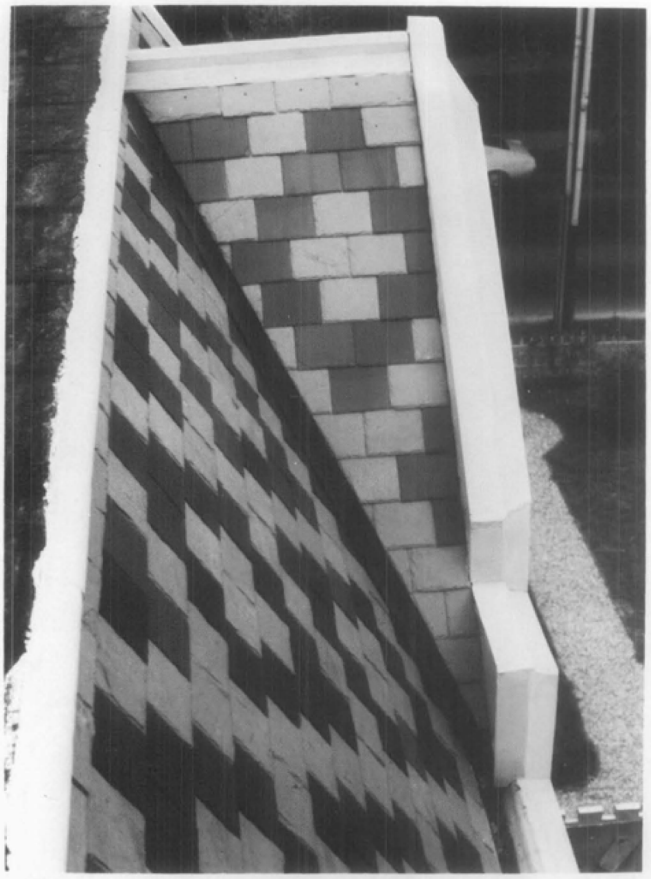
Repairs on this pantile roof were made with new tiles held in place with metal hangers. (Main Building, Ellis Island, New York)

The plain or flat rectangular tiles most commonly used from the 17th through the beginning of the 19th century measured about 10″ by 6″ by ½″, and had two holes at one end for a nail or peg fastener. Sometimes mortar was applied between the courses to secure the tiles in a heavy wind.

In the mid-19th century, tile roofs were often replaced by sheet-metal roofs, which were lighter and easier to install and maintain. However, by the turn of the century, the Romanesque Revival and Mission style buildings created a new demand and popularity for this picturesque roofing material.

Slate: Another practice settlers brought to the New World was slate roofing. Evidence of roofing slates have been found also among the ruins of mid-17th-century Jamestown. But because of the cost and the time required to obtain the material, which was mostly imported from Wales, the use of slate was initially limited. Even in Philadelphia (the second largest city in the English-speaking world at the time of the Revolution) slates were so rare that "The Slate Roof House" distinctly referred to William Penn's home built late in the 1600s. Sources of native slate were known to exist along the eastern seaboard from Maine to Virginia, but difficulties in inland transportation limited its availability to the cities, and contributed to its expense. Welsh slate continued to be imported until the development of canals and railroads in the mid-19th century made American slate more accessible and economical.

Slate was popular for its durability, fireproof qualities, and



The Victorians loved to used different colored slates to create decorative patterns on their roofs, an effect which cannot be easily duplicated by substitute materials. Before any repair work on a roof such as this, the slate sizes, colors, and position of the patterning should be carefully recorded to assure proper replacement. (Ebenezer Maxwell Mansion, Philadelphia, Pennsylvania, photo courtesy of William D. Hershey)



Replacement of particular historic details is important to the individual historic character of a roof, such as the treatment at the eaves of this rounded butt wood shingle roof. Also note that the surface of the roof was carefully sloped to drain water away from the side of the dormer. In the restoration, this function was augmented with the addition of carefully concealed modern metal flashing. (Mount Vernon, Virginia)



Galvanized sheet-metal shingles imitating the appearance of pantiles remained popular from the second half of the 19th century into the 20th century. (Episcopal Church, now the Jerome Historical Society Building, Jerome, Arizona, 1927)

aesthetic potential. Because slate was available in different colors (red, green, purple, and blue-gray), it was an effective material for decorative patterns on many 19th-century roofs (Gothic and Mansard styles). Slate continued to be used well into the 20th century, notably on many Tudor revival style buildings of the 1920s.

Shingles: Wood shingles were popular throughout the country in all periods of building history. The size and shape of the shingles as well as the detailing of the shingle roof differed according to regional craft practices. People within particular regions developed preferences for the local species of wood that most suited their purposes. In New England and the Delaware Valley, white pine was frequently used: in the South, cypress and oak; in the far west, red cedar or redwood. Sometimes a protective coating was applied to increase the durability of the shingle such as a mixture of brick dust and fish oil, or a paint made of red iron oxide and linseed oil.

Commonly in urban areas, wooden roofs were replaced with more fire resistant materials, but in rural areas this was not a major concern. On many Victorian country houses, the practice of wood shingling survived the technological advances of metal roofing in the 19th century, and near the turn of the century enjoyed a full revival in its namesake, the Shingle Style. Colonial revival and the Bungalow styles in the 20th century assured wood shingles a place as one of the most fashionable, domestic roofing materials.

Metal: Metal roofing in America is principally a 19th-century phenomenon. Before then the only metals commonly used were lead and copper. For example, a lead roof covered "Rosewell," one of the grandest mansions in 18th-century Virginia. But more often, lead was used for protective flashing. Lead, as well as copper, covered roof surfaces where wood, tile, or slate shingles were inappropriate because of the roof's pitch or shape.

Copper with standing seams covered some of the more notable early American roofs including that of Christ Church (1727–1744) in Philadelphia. Flat-seamed copper was used on many domes and cupolas. The copper sheets were imported from England until the end of the 18th century when facilities for rolling sheet metal were developed in America.

Sheet iron was first known to have been manufactured here by the Revolutionary War financier, Robert Morris, who had a rolling mill near Trenton, New Jersey. At his mill Morris produced the roof of his own Philadelphia mansion, which he started in 1794. The architect Benjamin H. Latrobe used sheet iron to replace the roof on Princeton's "Nassau Hall," which had been gutted by fire in 1802.

The method for corrugating iron was originally patented in England in 1829. Corrugating stiffened the sheets, and allowed greater span over a lighter framework, as well as reduced installation time and labor. In 1834 the American architect William Strickland proposed corrugated iron to cover his design for the market place in Philadelphia.

Galvanizing with zinc to protect the base metal from rust was developed in France in 1837. By the 1850s the material was used on post offices and customhouses, as well as on train sheds and factories. In 1857 one of the first metal roofs in the



Repeated repair with asphalt, which cracks as it hardens, has created a blistered surface on this sheet-metal roof and built-in gutter, which will retain water. Repairs could be made by carefully heating and scraping the surface clean, repairing the holes in the metal with a flexible mastic compound or a metal patch, and coating the surface with a fibre paint. (Roane County Courthouse, Kingston, Tennessee, photo courtesy of Building Conservation Technology, Inc.)

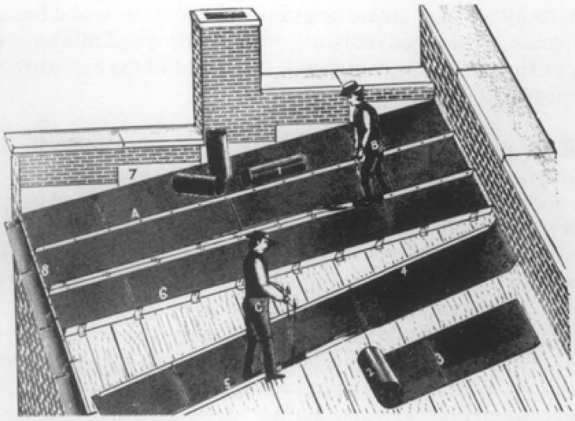
South was installed on the U.S. Mint in New Orleans. The Mint was thereby "fireproofed" with a 20-gauge galvanized, corrugated iron roof on iron trusses.

Tin-plate iron, commonly called "tin roofing," was used extensively in Canada in the 18th century, but it was not as common in the United States until later. Thomas Jefferson was an early advocate of tin roofing, and he installed a standing-seam tin roof on "Monticello" (ca. 1770–1802). The Arch Street Meetinghouse (1804) in Philadelphia had tin shingles laid in a herringbone pattern on a "piazza" roof.

However, once rolling mills were established in this country, the low cost, light weight, and low maintenance of tin plate made it the most common roofing material. Embossed tin shingles, whose surfaces created interesting patterns, were popular throughout the country in the late 19th century. Tin roofs were kept well-painted, usually red; or, as the architect A. J. Davis suggested, in a color to imitate the green patina of copper.

Terne plate differed from tin plate in that the iron was dipped in an alloy of lead and tin, giving it a duller finish. Historic, as well as modern, documentation often confuses the two, so much that it is difficult to determine how often actual "terne" was used.

Zinc came into use in the 1820s, at the same time tin plate was becoming popular. Although a less expensive substitute for lead, its advantages were controversial, and it was never widely used in this country.



A Chicago firm's catalog dated 1896 illustrates a method of unrolling, turning the edges, and finishing the standing seam on a metal roof.



Tin shingles, commonly embossed to imitate wood or tile, or with a decorative design, were popular as an inexpensive, textured roofing material. These shingles $8^3/_8$ inch by $12^1/_2$ inch on the exposed surface) were designed with interlocking edges, but they have been repaired by surface nailing, which may cause future leakage. (Ballard House, Yorktown, Virgina, photo by Gordie Whittington, National Park Service)

Other Materials: Asphalt shingles and roll roofing were used in the 1890s. Many roofs of asbestos, aluminum, stainless steel, galvinized steel, and lead-coated copper may soon have historic values as well. Awareness of these and other traditions of roofing materials and their detailing will contribute to more sensitive preservation treatments.

Locating the Problem

Failures of Surface Materials

When trouble occurs, it is important to contact a professional, either an architect, a reputable roofing contractor, or a craftsman familiar with the inherent characteristics of the particular historic roofing system involved. These professionals may be able to advise on immediate patching procedures and help plan more permanent repairs. A thorough examination of the roof should start with an appraisal of the existing condition and quality of the roofing material itself. Particular attention should be given to any southern slope because year-round exposure to direct sun may cause it to break down first.

Wood: Some historic roofing materials have limited life expectancies because of normal organic decay and "wear." For example, the flat surfaces of wood shingles erode from exposure to rain and ultraviolet rays. Some species are more hardy than others, and heartwood, for example, is stronger and more durable than sapwood.

Ideally, shingles are split with the grain perpendicular to

the surface. This is because if shingles are sawn across the grain, moisture may enter the grain and cause the wood to deteriorate. Prolonged moisture on or in the wood allows moss or fungi to grow, which will further hold the moisture and cause rot.

Metal: Of the inorganic roofing materials used on historic buildings, the most common are perhaps the sheet metals: lead, copper, zinc, tin plate, terne plate, and galvanized iron. In varying degrees each of these sheet metals are likely to deteriorate from chemical action by pitting or streaking. This can be caused by airborn pollutants; acid rainwater; acids from lichen or moss; alkalis found in lime mortars or portland cement, which might be on adjoining features and washes down on the roof surface; or tannic acids from adjacent wood sheathings or shingles made of red cedar or oak.

Corrosion from "galvanic action" occurs when dissimilar metals, such as copper and iron, are used in direct contact. Corrosion may also occur even though the metals are physically separated; one of the metals will react chemically against the other in the presence of an electrolyte such as rainwater. In roofing, this situation might occur when either a copper roof is decorated with iron cresting, or when steel nails are used in copper sheets. In some instances the corrosion can be prevented by inserting a plastic insulator between the dissimilar materials. Ideally, the fasteners should be a metal sympathetic to those involved.

Iron rusts unless it is well-painted or plated. Historically this problem was avoided by use of tin plating or galvinizing. But this method is durable only as long as the coating remains intact. Once the plating is worn or damaged, the exposed iron will rust. Therefore, any iron-based roofing material needs to be undercoated, and its surface needs to be kept well-painted to prevent corrosion.

One cause of sheet metal deterioration is fatigue. Depending upon the size and the gauge of the metal sheets, wear and metal failure can occur at the joints or at any protrusions in the sheathing as a result from the metal's alternating movement to thermal changes. Lead will tear because of "creep," or the gravitational stress that causes the material to move down the roof slope.

Slate: Perhaps the most durable roofing materials are slate and tile. Seemingly indestructable, both vary in quality. Some slates are hard and tough without being brittle. Soft slates are more subject to erosion and to attack by airborne and rainwater chemicals, which cause the slates to wear at nail holes, to delaminate, or to break. In winter, slate is very susceptible to breakage by ice, or ice dams.

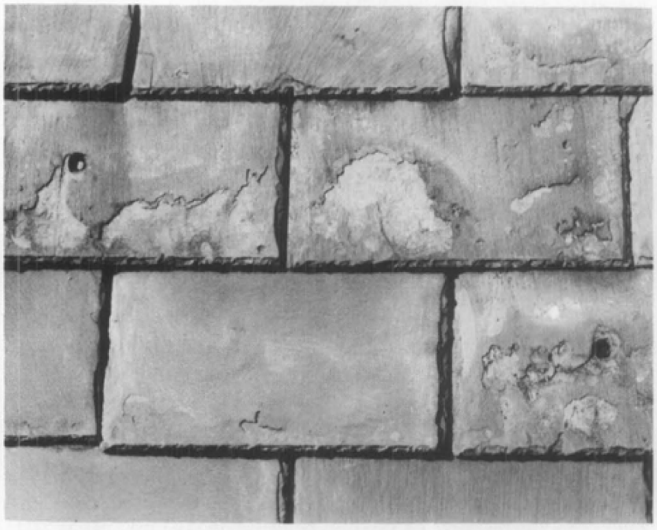
Tile: Tiles will weather well, but tend to crack or break if hit, as by tree branches, or if they are walked on improperly. Like slates, tiles cannot support much weight. Low quality tiles that have been insufficiently fired during manufacture, will craze and spall under the effects of freeze and thaw cycles on their porous surfaces.

Failures of Support Systems

Once the condition of the roofing material has been determined, the related features and support systems should be examined on the exterior and on the interior of the roof. The gutters and downspouts need periodic cleaning and maintenance since a variety of debris fill them, causing water to back up and seep under roofing units. Water will eventually cause fasteners, sheathing, and roofing structure to deteriorate. During winter, the daily freeze-thaw cycles can cause ice floes to develop under the roof surface. The pressure from these ice floes will dislodge the roofing material, especially slates, shingles, or tiles. Moreover, the buildup of ice dams above the gutters can trap enough moisture to rot the sheathing or the structural members.

Many large public buildings have built-in gutters set within the perimeter of the roof. The downspouts for these gutters may run within the walls of the building, or drainage may be through the roof surface or through a parapet to exterior downspouts. These systems can be effective if properly maintained; however, if the roof slope is inadequate for good runoff, or if the traps are allowed to clog, rainwater will form pools on the roof surface. Interior downspouts can collect debris and thus back up, perhaps leaking water into the surrounding walls. Exterior downspouts may fill with water, which in cold weather may freeze and crack the pipes. Conduits from the built-in gutter to the exterior downspout may also leak water into the surrounding roof structure or walls.

Failure of the flashing system is usually a major cause of roof deterioration. Flashing should be carefully inspected for failure caused by either poor workmanship, thermal stress, or metal deterioration (both of flashing material itself and of the fasteners). With many roofing materials, the replacement of flashing on an existing roof is a major operation, which may require taking up large sections of the roof surface. Therefore, the installation of top quality flashing material on



This detail shows slate delamination caused by a combination of weathering and pollution. In addition, the slates have eroded around the repair nails, incorrectly placed in the exposed surface of the slates. (Lower Pontalba Building, New Orleans, photo courtesy of Building Conservation Technology, Inc.)



Temporary stabilization or "mothballing" with materials such as plywood and building paper can protect the roof of a project until it can be properly repaired or replaced. (Narbonne House, Salem, Massachusetts)





These two views of the same house demonstrate how the use of a substitute material can drastically affect the overall character of a structure. The textural interest of the original tile roof was lost with the use of asphalt shingles. Recent preservation efforts are replacing the tile roof. (Frank House, Kearney, Nebraska, photo courtesy of the Nebraska State Historical Society, Lincoln, Nebraska)

a new or replaced roof should be a primary consideration. *Remember, some roofing and flashing materials are not compatible.*

Roof fasteners and clips should also be made of a material compatible with all other materials used, or coated to prevent rust. For example, the tannic acid in oak will corrode iron nails. Some roofs such as slate and sheet metals may fail if nailed too rigidly.

If the roof structure appears sound and nothing indicates recent movement, the area to be examined most closely is the roof substrate—the sheathing or the battens. The danger spots would be near the roof plates, under any exterior patches, at the intersections of the roof planes, or at vertical surfaces such as dormers. Water penetration, indicating a breach in the roofing surface or flashing, should be readily apparent, usually as a damp spot or stain. Probing with a small pen knife may reveal any rot which may indicate previously undetected damage to the roofing membrane. Insect infestation evident by small exit holes and frass (a sawdust-like debris) should also be noted. Condensation on the underside of the roofing is undesirable and indicates improper ventilation. Moisture will have an adverse effect on any roofing material; a good roof stays dry inside and out.

Repair or Replace

Understanding potential weaknesses of roofing material also requires knowledge of repair difficulties. Individual slates can be replaced normally without major disruption to the rest of the roof, but replacing flashing on a slate roof can require substantial removal of surrounding slates. If it is the substrate or a support material that has deteriorated, many surface materials such as slate or tile can be reused if handled carefully during the repair. Such problems should be evaluated at the outset of any project to determine if the roof can be effectively patched, or if it should be completely replaced.

Will the repairs be effective? Maintenance costs tend to multiply once trouble starts. As the cost of labor escalates, repeated repairs could soon equal the cost of a new roof.

The more durable the surface is initially, the easier it will be to maintain. Some roofing materials such as slate are expensive to install, but if top quality slate and flashing are used, it will last 40–60 years with minimal maintenance. Although the installation cost of the roof will be high, low maintenance needs will make the lifetime cost of the roof less expensive.

Historical Research

In a restoration project, research of documents and physical investigation of the building usually will establish the roof's history. Documentary research should include any original plans or building specifications, early insurance surveys, newspaper descriptions, or the personal papers and files of people who owned or were involved in the history of the building. Old photographs of the building might provide evidence of missing details.

Along with a thorough understanding of any written history of the building, a physical investigation of the roofing and its structure may reveal information about the roof's construction history. Starting with an overall impression of the structure, are there any changes in the roof slope, its configuration, or roofing materials? Perhaps there are obvious patches or changes in patterning of exterior brickwork where a gable roof was changed to a gambrel, or where a whole upper story was added. Perhaps there are obvious stylistic changes in the roof line, dormers, or ornamentation. These observations could help one understand any important alteration, and could help establish the direction of further investigation.

Because most roofs are physically out of the range of careful scrutiny, the "principle of least effort" has probably limited the extent and quality of previous patching or replacing, and usually considerable evidence of an earlier roof surface remains. Sometimes the older roof will be found as an underlayment of the current exposed roof. Original roofing may still be intact in awkward places under later features on a roof. Often if there is any unfinished attic space, remnants of roofing may have been dropped and left when the roof was being built or repaired. If the configuration of the roof has been changed, some of the original material might still be in place under the existing roof. Sometimes whole sections of the roof and roof framing will have been left intact under the higher roof. The profile and/or flashing of the earlier roof may be apparent on the interior of the walls at the level of the alteration. If the sheathing or lathing appears to have survived changes in the roofing surface, they may contain evidence of the roofing systems. These may appear either as dirt marks, which provide "shadows" of a roofing material, or as nails broken or driven down into the wood, rather than pulled out during previous alterations or repairs. Wooden headers in the roof framing may indicate that earlier chimneys or skylights have been removed. Any metal ornamentation that might have existed may be indicated by anchors or unusual markings along the ridge or at other edges of the roof. This primary

evidence is essential for a full understanding of the roof's history.

Caution should be taken in dating early "fabric" on the evidence of a single item, as recycling of materials is not a mid-20th-century innovation. Carpenters have been reusing materials, sheathing, and framing members in the interest of economy for centuries. Therefore, any analysis of the materials found, such as nails or sawmarks on the wood, requires an accurate knowledge of the history of local building practices before any final conclusion can be accurately reached. It is helpful to establish a sequence of construction history for the roof and roofing materials; any historic fabric or pertinent evidence in the roof should be photographed, measured, and recorded for future reference.

During the repair work, useful evidence might unexpectedly appear. It is essential that records be kept of any type of work on a historic building, before, during, and after the project. Photographs are generally the easiest and fastest method, and should include overall views and details at the gutters, flashing, dormers, chimneys, valleys, ridges, and eaves. All photographs should be immediately labeled to insure accurate identification at a later date. Any patterning or design on the roofing deserves particular attention. For example, slate roofs are often decorative and have subtle changes in size, color, and texture, such as a gradually decreasing coursing length from the eave to the peak. If not carefully noted before a project begins, there may be problems in replacing the surface. The standard reference for this phase of the work is *Recording Historic Buildings,* compiled by Harley J. McKee for the Historic American Buildings Survey, National Park Service, Washington, D.C., 1970.

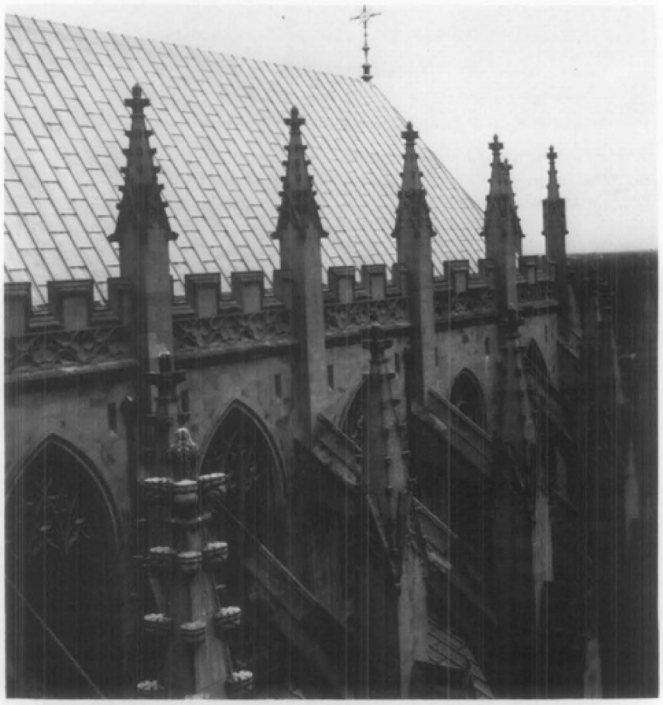
Replacing the Historic Roofing Material

Professional advice will be needed to assess the various aspects of replacing a historic roof. With some exceptions, most historic roofing materials are available today. If not, an architect or preservation group who has previously worked with the same type material may be able to recommend suppliers. Special roofing materials, such as tile or embossed metal shingles, can be produced by manufacturers of related products that are commonly used elsewhere, either on the exterior or interior of a structure. With some creative thinking and research, the historic materials usually can be found.



Because of the roof's visibility, the slate detailing around the dormers is important to the character of this structure. Note how the slates swirl from a horizontal pattern on the main roof to a diamond pattern on the dormer roofs and side walls. (18th and Que Streets, NW, Washington, D.C.)

Craft Practices: Determining the craft practices used in the installation of a historic roof is another major concern in roof restoration. Early builders took great pride in their work, and experience has shown that the "rustic" or irregular designs commercially labled "Early American" are a 20th-century invention. For example, historically, wood shingles underwent several distinct operations in their manufacture including splitting by hand, and smoothing the surface with a draw knife. In modern nomenclature, the same item would be a "tapersplit" shingle which has been dressed. Unfortunately, the rustic appearance of today's commercially available "handsplit" and re-sawn shingle bears no resemblance to the hand-made roofing materials used on early American buildings.



Good design and quality materials for the roof surface, fastenings, and flashing minimize roofing failures. This is essential on roofs such as on the National Cathedral where a thorough maintenance inspection and minor repairs cannot be done easily without special scaffolding. However, the success of the roof on any structure depends on frequent cleaning and repair of the gutter system. (Washington, D.C., photo courtesy of John Burns, A.I.A.)

Early craftsmen worked with a great deal of common sense; they understood their materials. For example they knew that wood shingles should be relatively narrow; shingles much wider than about 6" would split when walked on, or they may curl or crack from varying temperature and moisture. It is important to understand these aspects of craftsmanship, remembering that people wanted their roofs to be weather-tight and to last a long time. The recent use of "mother-goose" shingles on historic structures is a gross underestimation of the early craftsman's skills.

Supervision: Finding a modern craftsman to reproduce historic details may take some effort. It may even involve some special instruction to raise his understanding of certain historic craft practices. At the same time, it may be pointless (and expensive) to follow historic craft practices in any construction that will not be visible on the finished product. But if the roofing details are readily visible, their appearance should be based on architectural evidence or on historic prototypes. For instance, the spacing of the seams on a standing-seam metal roof will affect the building's overall scale and should therefore match the original dimensions of the seams.

Many older roofing practices are no longer performed because of modern improvements. Research and review of specific detailing in the roof with the contractor before beginning the project is highly recommended. For example, one early craft practice was to finish the ridge of a wood shingle roof with a roof "comb"—that is, the top course of one slope of the roof was extended uniformly beyond the peak to shield the ridge, and to provide some weather protection for the raw horizontal edges of the shingles on the other slope. If the "comb" is known to have been the correct detail, it should be used. Though this method leaves the top course vulnerable to the weather, a disguised strip of flashing will strengthen this weak point.

Detail drawings or a sample mock-up will help ensure that the contractor or craftsman understands the scope and special requirements of the project. It should never be assumed that the modern carpenter, slater, sheet metal worker, or roofer will know all the historic details. Supervision is as important as any other stage of the process.



Special problems inherent in the design of an elaborate historic roof can be controlled through the use of good materials and regular maintenance. The shape and detailing are essential elements of the building's historic character, and should not be modified, despite the use of alternative surface materials. (Gamwell House, Bellingham, Washington)

Alternative Materials

The use of the historic roofing material on a structure may be restricted by building codes or by the availability of the materials, in which case an appropriate alternative will have to be found.

Some municipal building codes allow variances for roofing materials in historic districts. In other instances, individual variances may be obtained. Most modern heating and cooking is fueled by gas, electricity, or oil—none of which emit the hot embers that historically have been the cause of roof fires. Where wood burning fireplaces or stoves are used, spark arrestor screens at the top of the chimneys help to prevent flaming material from escaping, thus reducing the number of fires that start at the roof. In most states, insurance rates have been equalized to reflect revised considerations for the risks involved with various roofing materials.

In a rehabilitation project, there may be valid reasons for replacing the roof with a material other than the original. The historic roofing may no longer be available, or the cost of obtaining specially fabricated materials may be prohibitive. But the decision to use an alternative material should be weighed carefully against the primary concern to keep the historic character of the building. If the roof is flat and is not visible from any elevation of the building, and if there are advantages to substituting a modern built-up composition roof for what might have been a flat metal roof, then it may make better economic and construction sense to use a modern roofing method. But if the roof is readily visible, the alternative material should match as closely as possible the scale, texture, and coloration of the historic roofing material.

Asphalt shingles or ceramic tiles are common substitute materials intended to duplicate the appearance of wood shingles, slates, or tiles. Fire-retardant, treated wood shingles are currently available. The treated wood tends, however, to be brittle, and may require extra care (and expense) to install. In some instances, shingles laid with an interlay of fire-retardent building paper may be an acceptable alternative.

Lead-coated copper, terne-coated steel, and aluminum/zinc-coated steel can successfully replace tin, terne plate, zinc, or lead. Copper-coated steel is a less expensive (and less durable) substitute for sheet copper.

The search for alternative roofing materials is not new. As early as the 18th century, fear of fire cause many wood shingle or board roofs to be replaced by sheet metal or clay tile. Some historic roofs were failures from the start, based on over-ambitious and naive use of materials as they were first developed. Research on a structure may reveal that an inadequately designed or a highly combustible roof was replaced early in its history, and therefore restoration of a later roof material would have a valid precedent. In some cities, the substitution of sheet metal on early row houses occurred as soon as the rolled material became available.

Cost and ease of maintenance may dictate the substitution of a material wholly different in appearance from the original. The practical problems (wind, weather, and roof pitch) should be weighed against the historical consideration of scale, texture, and color. Sometimes the effect of the alternative material will be minimal. But on roofs with a high degree of visibility and patterning or texture, the substitution may seriously alter the architectural character of the building.

Temporary Stabilization

It may be necessary to carry out an immediate and temporary stabilization to prevent further deterioration until research can determine how the roof should be restored or rehabilitated, or until funding can be provided to do a proper job. A simple covering of exterior plywood or roll roofing might provide adequate protection, but any temporary covering should be applied with caution. One should be careful not to overload the roof structure, or to damage or destroy historic evidence or fabric that might be incorporated into a new roof at a later date. In this sense, repairs with caulking or bituminous patching compounds should be recognized as potentially harmful, since they are difficult to remove, and at their best, are very temporary.

Precautions

The architect or contractor should warn the owner of any precautions to be taken against the specific hazards in installing the roofing material. Soldering of sheet metals, for instance, can be a fire hazard, either from the open flame or from overheating and undected smoldering of the wooden substrate materials.

Thought should be given to the design and placement of any modern roof appurtenances such as plumbing stacks, air vents, or TV antennas. Consideration should begin with the placement of modern plumbing on the interior of the building, otherwise a series of vent stacks may pierce the roof membrane at various spots creating maintenance problems as well as aesthetic ones. Air handling units placed in the attic space will require vents which, in turn, require sensitive design. Incorporating these in unused chimneys has been very successful

in the past.

Whenever gutters and downspouts are needed that were not on the building historically, the additions should be made as unobtrusively as possible, perhaps by painting them out with a color compatible with the nearby wall or trim.

Maintenance

Although a new roof can be an object of beauty, it will not be protective for long without proper maintenance. At least twice a year, the roof should be inspected against a checklist. All changes should be recorded and reported. Guidelines should be established for any foot traffic that may be required for the maintenance of the roof. Many roofing materials should not be walked on at all. For some—slate, asbestos, and clay tile—a self-supporting ladder might be hung over the ridge of the roof, or planks might be spanned across the roof surface. Such items should be specifically designed and kept in a storage space accessible to the roof. If exterior work ever requires hanging scaffolding, use caution to insure that the anchors do not penetrate, break, or wear the roofing surface, gutters, or flashing.

Any roofing system should be recognized as a membrane that is designed to be self-sustaining, but that can be easily damaged by intrusions such as pedestrian traffic or fallen tree branches. Certain items should be checked at specific times. For example, gutters tend to accumulate leaves and debris during the spring and fall and after heavy rain. Hidden gutter screening both at downspouts and over the full length of the gutter could help keep them clean. The surface material would require checking after a storm as well. Periodic checking of the underside of the roof from the attic after a storm or winter freezing may give early warning of any leaks. Generally, damage from water or ice is less likely on a roof that has good flashing on the outside and is well ventilated and insulated on the inside. Specific instructions for the maintenance of the different roof materials should be available from the architect or contractor.

Summary

The essential ingredients for replacing and maintaining a historic roof are:

- Understanding the historic character of the building and being sympathetic to it.
- Careful examination and recording of the existing roof and any evidence of earlier roofs.
- Consideration of the historic craftsmanship and detailing and implementing them in the renewal wherever visible.
- Supervision of the roofers or maintenance personnel to assure preservation of historic fabric and proper understanding of the scope and detailing of the project.
- Consideration of alternative materials where the original cannot be used.
- Cyclical maintenance program to assure that the staff understands how to take care of the roof and of the particular trouble spots to safeguard.

With these points in mind, it will be possible to preserve the architectural character and maintain the physical integrity of the roofing on a historic building.

This Preservation Brief was written by Sarah M. Sweetser, Architectural Historian, Technical Preservation Services Division. Much of the technical information was based upon an unpublished report prepared under contract for this office by John G. and Diana S. Waite. Some of the historical information was from Charles E. Peterson, FAIA, "American Notes," *Journal of the Society of Architectural Historians.*

The illustrations for this brief not specifically credited are from the files of the Technical Preservation Services Division.

This publication was prepared pursuant to Executive Order 11593, "Protection and Enhancement of the Cultural Environment," which directs the Secretary of the Interior to "develop and make available to Federal agencies and State and local governments information concerning professional methods and techniques for preserving, improving, restoring and maintaining historic properties." The Brief has been developed under the technical editorship of Lee H. Nelson, AIA, Chief, Preservation Assistance Division, National Park Service, U.S. Department of the Interior, Washington, D.C. 20240. Comments on the usefulness of this information are welcome and can be sent to Mr. Nelson at the above address. This publication is not copyrighted and can be reproduced without penalty. Normal procedures for credit to the author and the National Park Service are appreciated. **February 1978.**



Decorative features such as cupolas require extra maintenance. The flashing is carefully detailed to promote run-off, and the wooden ribbing must be kept well-painted. This roof surface, which was originally tin plate, has been replaced with lead-coated copper for maintenance purposes. (Lyndhurst, Tarrytown, New York, photo courtesy of the National Trust for Historic Preservation)

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