From:	Werner, Jeffrey B
To:	William (Bill) L. Owens, AIA
Cc:	Murphy, Mollie
Subject:	BAR action - FUMC solar panels
Date:	Thursday, January 19, 2023 6:18:17 PM

Certificate of Appropriateness
BAR # 22-10-02
101 East Jefferson Street, TMP 330190000
North Downtown ADC District
Owner: First United Methodist Church
Applicant: William L. Owens, AIA
Project: FUMC solar panels

Mr. Owens:

The CoA for the above referenced project was denied by the City of Charlottesville Board of Architectural Review on January 18, 2023. The following action was taken:

> Motion to deny CoA by Ms. Lewis. Second by Mr. Schwarz. Vote 4-3, motion passed. (*Yes*: Schwarz, Zehmer, Lewis, Bailey. *No*: Birle, Gastinger, Timmerman.)
>
> Having considered the standards set forth within the City Code, including the ADC District Design Guidelines, I move to find that the proposed slate roof replacement and roof-top solar panels at 101 East Jefferson Street do not satisfy the BAR's criteria and are not compatible with this property and the other properties in the North Downtown ADC District for the following reasons:
> - the removal of the slate and obscuring and damaging the slate does not meet our guidelines;
> - this proposed system of rooftop installation does not comply with the Secretary of Interior standards;
>
> and the BAR denies the application as submitted.

The meeting video is on-line at the link below. The discussion starts at approximately 01:06:00.
https://boxcast.tv/channel/vabajtzezuyv3iclkx1a?b=vwgi4ucrrynjjfn6rbqt

Per city Code Sec. 34-285 (*Approval or denial of applications by BAR*) and Sec. 34-286 (*City council appeals*), following the denial of a CoA request, the applicant may appeal the decision to City council by filing a written notice of appeal within ten working days of the date of the decision. [Note: *Ten working days* allows an appeal to be filed by February 1, 2023.] The appeal shall "set forth, in writing, the grounds for an appeal, including the procedure(s) or standard(s) alleged to have been violated or misapplied by the BAR, and/or any additional information, factors or opinions he or she deems relevant to the [appeal]."
The fee for an appeal of BAR decision is $125.
Link to City Code: ADC Districts - City Code Section
If you have any questions, please contact me at wernerjb@charlottesville.gov

Please remove the notice sign posted at the site.

Sincerely,

Jeff Werner, AICP

Historic Preservation and Design Planner
City of Charlottesville
Neighborhood Development Services
City Hall | P.O. Box 911
610 East Market Street
Charlottesville, VA 22902
Phone: 434.970.3130
Email: wernerjb@charlottesville.gov

City of Charlottesville
Board of Architectural Review
Staff Memo
January 18, 2023

Certificate of Appropriateness
BAR # 22-10-02
101 East Jefferson Street, TMP 330190000
North Downtown ADC District (contributing)
Owner: First United Methodist Church
Applicant: William L. Owens, AIA
Project: Install solar panels

Background
Year Built: 1923
District: North Downtown ADC District
Status: Contributing

First United Methodist Church is a Colonial Revival, brick church with a monumental portico and four Doric columns, with a tower and steeple.

Prior BAR Actions (See appendix for complete list)
September 20, 2022: Informal discussion, staff questions re: proposed solar panels.
Meeting video (04:41:00): BAR Meeting Video Sept 20 2022

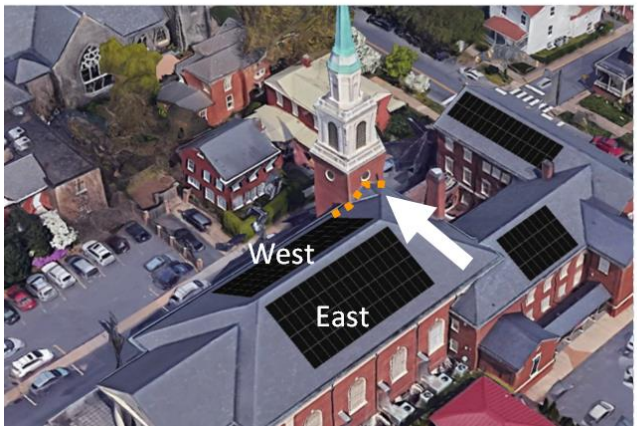
October 18, 2022: Motion to approve solar panels (BAR #22-10-02) failed, 2-4. BAR accepted applicant's request for deferral.
Meeting video (02:06:00): BAR Meeting Video Oct 18 2022
Submittal: 101 East Jefferson Street - BAR Submittal Oct 2022

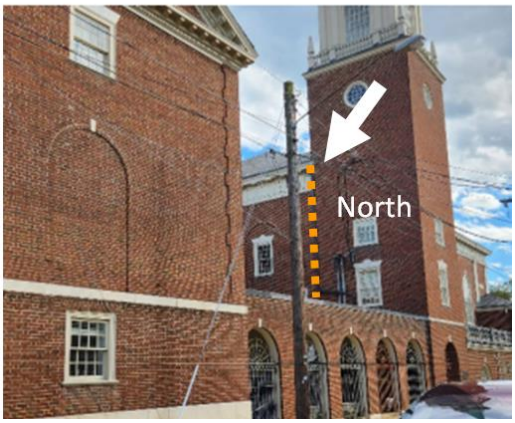
Application
- Submittal: Wm. L Owens Architect, First United Methodist Church Solar Panel Project, dated December 27, 2022: Narrative, photos, and product specs (29 pages).

Request CoA for installation of roof-top solar panels.
- Where solar panels are to be installed, the existing slate shingles will be removed, and replaced by asphalt shingles over waterproof underlayment. Salvageable slate will be stored for repairs on remaining slate roofs or for re-installation, if considered later. [Staff Note on the existing roof: Buckingham slate. Original to building, 1923. Life cycle of Buckingham slate can exceed 150 years.]

- All electrical connections will be made in the attic or the basement. The only exposed equipment, other than the solar panels. will be a 2" conduit running from the backside of the array on the west facing roof, along the roofline at the east face of the steeple, and down the north face of the steeple to the existing electrical service at ground level in the courtyard. The conduit will be painted to match the existing slate or brick.
- The solar panels [on the mountain rails] will be no greater than 6" above the roof.

Approx. routing: 2" conduit.





Discussion

Initial request: Install panels onto existing slate roof

At the September 20, 2022 meeting, staff asked the BAR for informal comments on this pending request, with the following offered:

- BAR Questions:
  - How will the panels be installed/mounted? (Brackets, hardware, etc.)
  - Where will wires/cables/conduit and equipment boxes be placed and how will they be screened, of necessary?
  - How high will the panels be above the slate?
  - How will the slate roof be protected during installation and subsequent maintenance of the solar panels? (Concern for condition of slate tiles with more-frequent activity.)
  - Photo-sim: panels on sanctuary are oriented NW.
- BAR Comments:
  - Preference: install panels on rear addition; avoid panels on sanctuary.
  - Re: maximizing panel area, a frame over the parking area (east side) might be evaluated.

Current request: Install panels onto asphalt shingles

The BAR's primary concern has been how the slate roof will be impacted by the activity related to the installation and maintenance of the solar panels. The applicant's proposal resolves that concern.

Like the City of Charlottesville,[1] the FUMC congregation has made a commitment to support renewable energy. The ADC District design guidelines are somewhat silent on--if not in opposition to—externally adapting historic structures to accommodate on-site alternative and renewable energy sources. The guidelines do encourage *sustainability* and *green building.* However, they refer to

[1] Charlottesville Climate Action Plan: Strategies and Key Actions for Reducing Greenhouse Gas Emissions in Our Community, November 2022 Link: Charlottesville-Climate-Action-Plan Nov 2022

solar [collectors] only once—in discouraging them on historic roofs--there is no mention of *photovoltaic*, *alternative*, or *renewable* [energy]. Regardless, the urgency to act has increased exponentially since the guidelines were adopted.

Term	Times Used
Sustainable / Sustainability	18
Green Building	6
Solar	1
Photovoltaic / Alternative / Renewable [Energy]	0

While not emphasized in the design guidelines, the City's Comprehensive Plan, adopted in 2021, specifically recommends expanding opportunity for solar power, see below. [Staff note: The Comp Plan refers to *residential homes* and *municipal buildings*; however, staff is comfortable interpreting this as a *City-wide* goal.]

> From the five guiding principles [emphasis added]: The City government will reduce its carbon footprint and other environmental impacts. <u>The Charlottesville community will be empowered and encouraged to reduce their environmental footprint and benefit from energy efficiency efforts</u>. All will have access to high-quality natural resources, including improved air, soil, and water quality.
>
> <u>From Chapter 4</u>: Strategy 3.4 Encourage sustainable, energy efficient building designs and low impact development as complementary goals to historic preservation, including through support for adaptation, reuse, and repurposing of the built environment.
> - Sub-strategies:
> - Continue evaluating recommendations appropriate for historic structure improvements that increase energy efficiency and promote sustainability. Incorporate [the above] into the design guidelines for Architectural Design Control Districts, Individually Protected Properties, Historic Conservation Districts, and Entrance Corridor Overlay Districts.
> - Support the implementation of solar photovoltaic systems for historic structures.
> - Consider applying the Secretary of the Interior Standards for Historic Rehabilitation to all City-owned property more than 50 years old, and apply appropriate preservation technologies in all additions and alterations, while also pursuing sustainability and energy conservation goals.
>
> <u>From Chapter 7</u>: Strategy 1.5: Pursue use of cleaner sources of energy (e.g., renewable energy strategies) community-wide.
> - Sub-strategies:
> - Consider local policies and incentives to expand solar power in residential homes.
> - Pursue siting solar power on appropriate municipal buildings.

From the design guidelines, Chapter I - *Introduction*:
- *Nothing in these guidelines should be construed to discourage green building or sustainable design. If such a design is found to conflict with a specific guideline, the BAR shall work with*

the applicant to devise a creative solution that meets that applicant's goal for sustainability that is also compatible with the character of the district and the property.

- *The guidelines are flexible enough to both respect the historic past and to embrace the future.*

Staff Recommendations

To be clear, a strict application of the design guidelines and of the Secretary's Standards would recommend denial of this request. With that, the options available to the BAR are: a) approve the CoA by, as instructed by the design guidelines, working *with the applicant to devise a creative solution that meets that applicant's goal for sustainability*; or, b) deny the CoA, acknowledging the matter can be appealed to City Council who *may consider additional information, factors or opinions deem[ed] relevant to the [appeal]*. (That is, Council may consider factors the BAR cannot.)

In choosing an option, staff suggests the BAR consider including guidance from the Comp Plan policy re: climate change and our environment. The following questions might be helpful--not to defer to obvious responses, but to establish context in considering how much flexibility the guidelines allow.

- Do the design guidelines and the Secretary's Standards express a clear, unambiguous direction?
- *Reversibility*: Are the impacts of the proposed work reversible?
- What guidance is offered in the City's Comprehensive Plan and how should they be used, if at all?
- In the pending updates to the design guidelines, would the BAR envision allowing or accommodating this and similar requests?
- If the existing roof was asphalt shingles—or if the slate was replaced with faux slate, which the BAR has allowed--how would this request be treated?
- Would approval stablish an unacceptable, possibly unanticipated, precedent?

If the BAR approves the CoA, staff suggests the following conditions be considered:

- Slate shingles removed will be properly stored for later use on the building.
- If/when the solar panels are removed, the asphalt shingles will be replaced with either slate or a suitable faux-slate shingle.

Suggested Motions

Approval: Having considered the standards set forth within the City Code, including the ADC District Design Guidelines, I move to find the proposed slate roof replacement and roof-top solar panels at 101 East Jefferson Street satisfies the BAR's criteria and is compatible with this property and other properties in the North Downtown ADC District, and that the BAR approves the application [as submitted].

Or, [... as submitted] with the following conditions:

Denial: Having considered the standards set forth within the City Code, including the ADC District Design Guidelines, I move to find that the proposed slate roof replacement and roof-top solar panels at 101 East Jefferson Street do not satisfy the BAR's criteria and are not compatible with this property and other properties in the North Downtown ADC District, and that for the following reasons the BAR denies the application as submitted:

Criteria, Standards and Guidelines

Review Criteria Generally

Sec. 34-284(b) of the City Code states that, In considering a particular application the BAR shall approve the application unless it finds:

(1) That the proposal does not meet specific standards set forth within this division or applicable provisions of the Design Guidelines established by the board pursuant to Sec. 34-288(6); and

(2) The proposal is incompatible with the historic, cultural or architectural character of the district in which the property is located or the protected property that is the subject of the application.

Pertinent Standards for Review of Construction and Alterations include:

(1) Whether the material, texture, color, height, scale, mass and placement of the proposed addition, modification or construction are visually and architecturally compatible with the site and the applicable design control district;

(2) The harmony of the proposed change in terms of overall proportion and the size and placement of entrances, windows, awnings, exterior stairs and signs;

(3) The Secretary of the Interior Standards for Rehabilitation set forth within the Code of Federal Regulations (36 C.F.R. §67.7(b)), as may be relevant;

(4) The effect of the proposed change on the historic district neighborhood;

(5) The impact of the proposed change on other protected features on the property, such as gardens, landscaping, fences, walls and walks;

(6) Whether the proposed method of construction, renovation or restoration could have an adverse impact on the structure or site, or adjacent buildings or structures;

(7) Any applicable provisions of the City's Design Guidelines.

Pertinent Guidelines from Chapter I – *Introduction*

Link: Chapter 1 Introduction (Part 1)

Sustainability: Sustainability and preservation are complementary concepts, and both goals should be pursued. **Nothing in these guidelines should be construed to discourage green building or sustainable design. If such a design is found to conflict with a specific guideline, the BAR shall work with the applicant to devise a creative solution that meets that applicant's goal for sustainability that is also compatible with the character of the district and the property.**

Flexibility: The following guidelines offer general recommendations on the design for all new buildings and additions in Charlottesville's historic districts. **The guidelines are flexible enough to both respect the historic past and to embrace the future.** The intent of these guidelines is not to be overly specific or to dictate certain designs to owners and designers. The intent is also not to encourage copying or mimicking particular historic styles. These guidelines are intended to provide a general design framework for new construction. Designers can take cues from the traditional architecture of the area and have the freedom to design appropriate new architecture for Charlottesville's historic districts.

Pertinent Guidelines from Chapter IV - *Rehabilitation*

Link: Chapter 4 Rehabilitation

G. Roof

1) When replacing a standing seam metal roof, the width of the pan and the seam height should be consistent with the original. Ideally, the seams would be hand crimped.

2) If pre-painted standing seam metal roof material is permitted, commercial-looking ridge caps or ridge vents are not appropriate on residential structures.
3) Original roof pitch and configuration should be maintained.
4) The original size and shape of dormers should be maintained.
5) Dormers should not be introduced on visible elevations where none existed originally.
6) Retain elements, such as chimneys, skylights, and light wells that contribute to the style and character of the building.
7) When replacing a roof, match original materials as closely as possible.
    a. Avoid, for example, replacing a standing-seam metal roof with asphalt shingles, as this would dramatically alter the building's appearance.
    b. Artificial slate is an acceptable substitute when replacement is needed.
    c. Do not change the appearance or material of parapet coping.
8) Place solar collectors and antennae on non-character defining roofs or roofs of non-historic adjacent buildings.
9) Do not add new elements, such as vents, skylights, or additional stories that would be visible on the primary elevations of the building.

Pertinent Guidelines from the Secretary's Standards

1. A property shall be used for its historic purpose or be placed in a new use that requires minimal change to the defining characteristics of the building and its site and environment.
2. The historic character of a property shall be retained and preserved. The removal of historic materials or alteration of features and spaces that characterize a property shall be avoided.
3. Each property shall be recognized as a physical record of its time, place, and use. Changes that create a false sense of historical development, such as adding conjectural features or architectural elements from other buildings, shall not be undertaken.
4. Most properties change over time; those changes that have acquired historic significance in their own right shall be retained and preserved.
5. Distinctive features, finishes, and construction techniques or examples of craftsmanship that characterize a historic property shall be preserved.
6. Deteriorated historic features shall be repaired rather than replaced. Where the severity of deterioration requires replacement of a distinctive feature, the new feature shall match the old in design, color, texture, and other visual qualities and, where possible, materials. Replacement of missing features shall be substantiated by documentary, physical, or pictorial evidence.
7. Chemical or physical treatments, such as sandblasting, that cause damage to historic materials shall not be used. The surface cleaning of structures, if appropriate, shall be undertaken using the gentlest means possible.
8. Significant archeological resources affected by a project shall be protected and preserved. If such resources must be disturbed, mitigation measures shall be undertaken.
9. New additions, exterior alterations, or related new construction shall not destroy historic materials that characterize the property. The new work shall be differentiated from the old and shall be compatible with the massing, size, scale, and architectural features to protect the historic integrity of the property and its environment.
10. New additions and adjacent or related new construction shall be undertaken in such a manner that if removed in the future, the essential form and integrity of the historic property and its environment would be unimpaired.

Building Exterior – Roofs: Alterations/Additions for the New Use

Recommended:

Installing mechanical and service equipment on the roof such as air conditioning, transformers, or solar collectors when required for the new use so that they are inconspicuous from the public right-of- way and do not damage or obscure character defining features.

Designing additions to roofs such as residential, office, or storage spaces; elevator housing; decks and terraces; or dormers or skylights when required by the new use so that they are inconspicuous from the public right-of-way and do not damage or obscure character-defining features.

Not Recommended:
Installing mechanical or service equipment so that it damages or obscures character-defining features; or is conspicuous from the public right-of-way.

Radically changing a character-defining roof shape or damaging or destroying character-defining roofing material as a result of incompatible design or improper installation techniques.

Energy Conservation - Roofs

Recommended:
Placing solar collectors on non-character-defining roofs or roofs of non-historic adjacent buildings.

Not Recommended:
Placing solar collectors on roofs when such collectors change the historic roofline or obscure the relationship of the roof features such as dormers, skylights, and chimneys.

The Secretary of the Interior's Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Building
https://www.nps.gov/orgs/1739/upload/sustainability-guidelines.pdf
Pages 14 and 15
Solar Technology

Recommended:

- Considering on-site, solar technology only after implementing all appropriate treatments to improve energy efficiency of the building, which often have greater life-cycle cost benefit than on-site renewable energy.
- Analyzing whether solar technology can be used successfully and will benefit a historic
- building without compromising its character or the character of the site or the surrounding historic district.
- Installing a solar device in a compatible location on the site or on a non-historic building or addition where it will have minimal impact on the historic building and its site.
- Installing a solar device on the historic building only after other locations have been investigated and determined infeasible.
- Installing a low-profile solar device on the historic building so that it is not visible or only minimally visible from the public right of way: for example, on a flat roof and set back to take advantage of a parapet or other roof feature to screen solar panels from view; or on a secondary slope of a roof, out of view from the public right of way.

- Installing a solar device on the historic building in a manner that does not damage historic roofing material or negatively impact the building's historic character and is reversible.
- Installing solar roof panels horizontally – flat or parallel to the roof—to reduce visibility

Not Recommended:

- Installing on-site, solar technology without first implementing all appropriate treatments to the building to improve its energy efficiency.
- Installing a solar device without first analyzing its potential benefit or whether it will negatively impact the character of the historic building or site or the surrounding historic district.
- Placing a solar device in a highly-visible location where it will negatively impact the historic building and its site.
- Installing a solar device on the historic building without first considering other locations.
- Installing a solar device in a prominent location on the building where it will negatively impact its historic character.
- Installing a solar device on the historic building in a manner that damages historic roofing material or replaces it with an incompatible material and is not reversible.
- Removing historic roof features to install solar panels.
- Altering a historic, character-defining roof slope to install solar panels.
- Installing solar devices that are not reversible.
- Placing solar roof panels vertically where they are highly visible and will negatively
- impact the historic character of the building.

APPENDIX

Prior BAR Actions re; 101 East Jefferson Street

- February 17, 2004 – Preliminary discussion re: iron fencing.
- April 20, 2004 – BAR approved the addition of a five-ft high, wrought iron fence parallel to the east property line to protect the public from a large window well.
- March 15, 2011 – BAR approved (7-0) modifications to/replacement of main entry doors as submitted with conditions: (a) door be replaced, not modified, with existing doors saved/stored on site; and (b) glass in the new door is clear glass, not beveled glass.
- June 21, 2011 – BAR approved (6-0) a new bathroom addition as submitted.
- October 18, 2016 – BAR approved (8-0) steeple lighting. (BAR awarded a *2020 Preservation and Design Award:* Rehabilitation of Historic Steeple and Installation of Steeple Illumination.)

Solar panel installations reviewed by BAR since 2010. All were approved.
Since 2010, the BAR has reviewed 15 projects with solar panel arrays, all were approved. (See list in the Appendix.) Since adoption of the current design guidelines, the BAR has reviewed and approved 11 CoA requests for photovoltaic panels--eight in ADC Districts and three in HC Districts. All, except one, were rooftop arrays.

The design guidelines for Rehabilitation do not specifically recommend against solar panels on historic roofs; instead recommending they be placed *on non-character defining roofs or roofs of non-historic adjacent buildings*. In the BAR staff reports for several projects reviewed between 2010 and 2017, the Preservation and Design Planner applied the following when recommending approval: *The panels extend up from the roof by less than one foot, which does not significantly change the profile of the roofline*. This appears to be an interpretation of a recommendation in the Secretary's Standards to not place panels *where they will change the historic roofline or obscure the relationship of the roof features such as dormers, skylights, and chimneys*. That is, panels that are installed low and parallel to the roof surface will <u>*not*</u> *change the profile of the roofline*.

Date	Address	District	Roof type (location of panels)
Apr-10	215 East High St	North Downtown	parapet (not visible)
Aug-10	222 South St	Downtown	frame in back yard (rear)
Oct-10	219 14th St NW	Rugby-U Circle-Venable	standing-seam metal (side)
Mar-12	230 West Main St	Downtown	parapet (not visible)
Oct-16	206 West Market St	Downtown	parapet (not visible)
Aug-16	450 Rugby Rd	Rugby-U Circle-Venable	flat roof (rear)
May-17	615 Lexington Ave	Martha Jeff HC	standing-seam metal (rear)
Jul-18	503 Lexington Ave	Martha Jeff HC	standing-seam metal (side)
Apr-19	1102 Carlton Ave	IPP	standing-seam metal (rear)
Aug-19	507 Ridge St	Ridge Street	frame in back yard (rear)
Mar-19	206 5th St NE	North Downtown	membrane (rear)
Mar-19	420 Park St	North Downtown	standing-seam metal (side and rear)
Mar-19	924 Rugby Rd	Rugby Road HC	standing-seam metal (front and rear)
Aug-21	735 Northwood Ave	North Downtown	standing-seam metal (front)
Jun-22	636 Park St	North Downtown	standing-seam metal (rear)

<u>Etc.</u>
During the 2018-2020 [pre-COVID] discussions re: updating the design guidelines, staff noted the following BAR comments related to solar panels:

Chapter III – *Rehabilitation*. Roof:

- Should not damage or interfere with historic material.
- If existing roof is relatively flat, panels should not create the illusion of a sloped roof.
- Advise owners to inspect condition of existing roof prior to attaching solar equipment; make necessary repairs—even replacement—prior to installing solar equipment.
- Address/evaluate photovoltaic shingles as replacement shingles.
- Address/evaluate how panels are attached to historic roofs.

WILLIAM L. OWENS ARCHITECT, LLC

FIRST UNITED METHODIST CHURCH
Solar Panel Project

December 27, 2022

Description of Proposed Work

As part of green initiatives currently ongoing at the church, the congregation of First United Methodist Church (101 East Jefferson Street) wishes to consider adding solar panel arrays on several of the church building's roof surfaces. The church has received a promise of a large donation to seed the project and will fund the remaining cost through matching donations and the Federal tax credit now available to nonprofits as part of the Inflation Reduction Act of 2022.

The goal of the project is to reduce the church's demand for electrical service as much as possible through being supportive of renewable energy and demonstrating good stewardship of the environment. In order to accomplish this goal, the church wishes to maximizing the coverage of solar panels as much as practicable. As proposed, (see attached photo simulations) the church's electrical costs would be reduced by approximately 50% at a savings of about $11,000 per year.

Following the presentation of the project concept to the BAR in October, the church met with its roofer and solar provider to reevaluate the project's approach, particularly to installation, since the mounting of the solar panels through the existing 100-year-old slate shingle roof was a major topic of concern at the meeting. The church now proposes to remove the slate shingles under the solar arrays and replace them with a waterproofing underlayment and dark colored asphalt shingles. This will allow for a more typical installation of the panels by the solar provider (see attached product information) and reduce the maintenance concerns for the church associated with a slate roof installation.

The existing slate tiles that are replaced for asphalt shingles will be salvaged and used to repair any damage to the exposed roof during installation or stored by the church for possible restoration if the solar panels are removed in the future. In addition, the roofer has found a source for new slate shingles that matches the original Buckingham Slate tiles, also for use in any required repair or future replacement.

Since the solar panels sit parallel to and only 6" above the roof surface, and project 12"-24" beyond the mounting rails, the asphalt shingles will not be visible, even when standing on the roof itself. The geometry of the arrays has been revised to a regular rectangular shape from the stepped geometry previously proposed to simplify the new roof installation and more easily disguise the asphalt shingles. All roof areas not covered by solar panels will remain visible as the existing slate shingles.

The solar panel arrays themselves will not be viewable on the church roofs from the surrounding block (see attached site photos) and only seen from the church parking lot and at a significant distance. Since the panels are mounted close to and matching the existing roof slopes, they should not be considered as changing the historic roofline or altering the character defining features of the church.

1645 Redwing Lane, Charlottesville, VA 22911 434.974.1620 bowens@wloarchitect.com www.wloarchitect.com

First United Methodist Church
Solar Panel Project

Photo Simulation 1

First United Methodist Church
Solar Panel Project

Photo Simulation 2

First United Methodist Church
Solar Panel Project

Photo Simulation 3

First United Methodist Church
Solar Panel Project

Site Photos – East Jefferson Street

Property from E. Jefferson St./1st St. N. Intersection

Property from E. Jefferson St./2nd St. N.E. Intersection

Facing Property from E. Jefferson St.

Facing Property from E. Jefferson St.

First United Methodist Church
Solar Panel Project

Site Photos – 1st Street N.

Property from E. High St./1st St. N. Intersection

Property from E. Jefferson St./1st St. N. Intersection

Facing Properties from E. Jefferson St./1st St. N. Intersection

Facing Properties from E. High St./1st St. N. Intersection

First United Methodist Church
Solar Panel Project

Site Photos – 2nd Street N.E.

Neighboring Property from 2nd Street N.E.

Property from 2nd Street N.E.

Facing Property from E. High St./2nd St. N.E. Intersection

Facing Property from E. Jefferson St./2nd St. N.E Intersection

First United Methodist Church
Solar Panel Project

Site Photos – E. High Street

Property from E. High St./2nd St. N.E. Intersection

Property from E. Hight St./1st St. N. Intersection

Facing Properties from E. High St./1st St. N. Intersection

Facing Properties from E. High St./2nd St. N.E. Intersection

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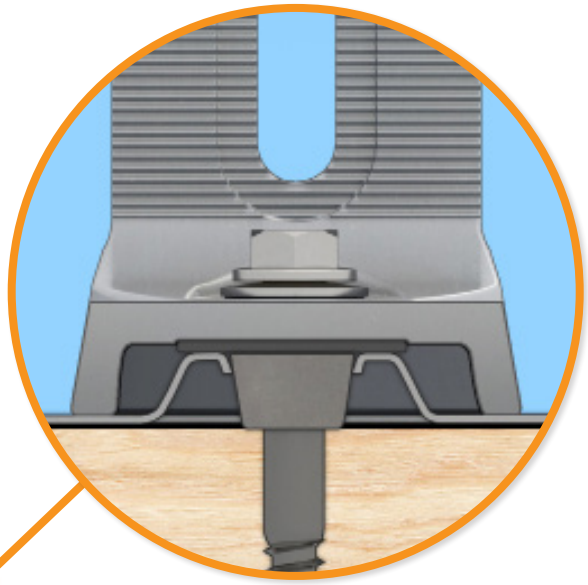
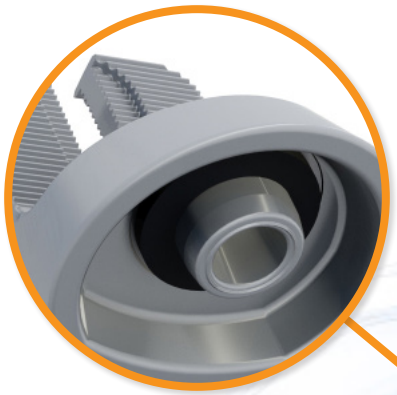
The optimized flashing design features a large viewport, for easy alignment with the pilot hole. And the GripCap® and GripCap+® sit snugly in place, so the lag can be driven single-handedly.



Three-Tier Water Seal, Reimagined

FlashVue®'s seal architecture utilizes three layers of protection. The viewport is elevated 0.30", and provides a "friction-fit" for the GripCap®. The GripCap® fully covers the viewport while a sealing washer adds another layer of protection. And an EPDM washer and lag bolt "seal the deal" in the



GripCap® & GripCap+®

The 360º capable GripCap® (2.74" tall) and GripCap+® (3.74" tall) can be placed in any orientation, and provide a "friction-fit" for easy installs. Push snug into the viewport, without worrying it will roll away or rotate while driving the lag.

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The large viewport makes it easy to align the flashing with the pilot hole, and drive the lag centered into the rafter. The elevated rim not only provides a sturdy dock for the GripCap® or GripCap+®, but increases water-shedding

Intertek

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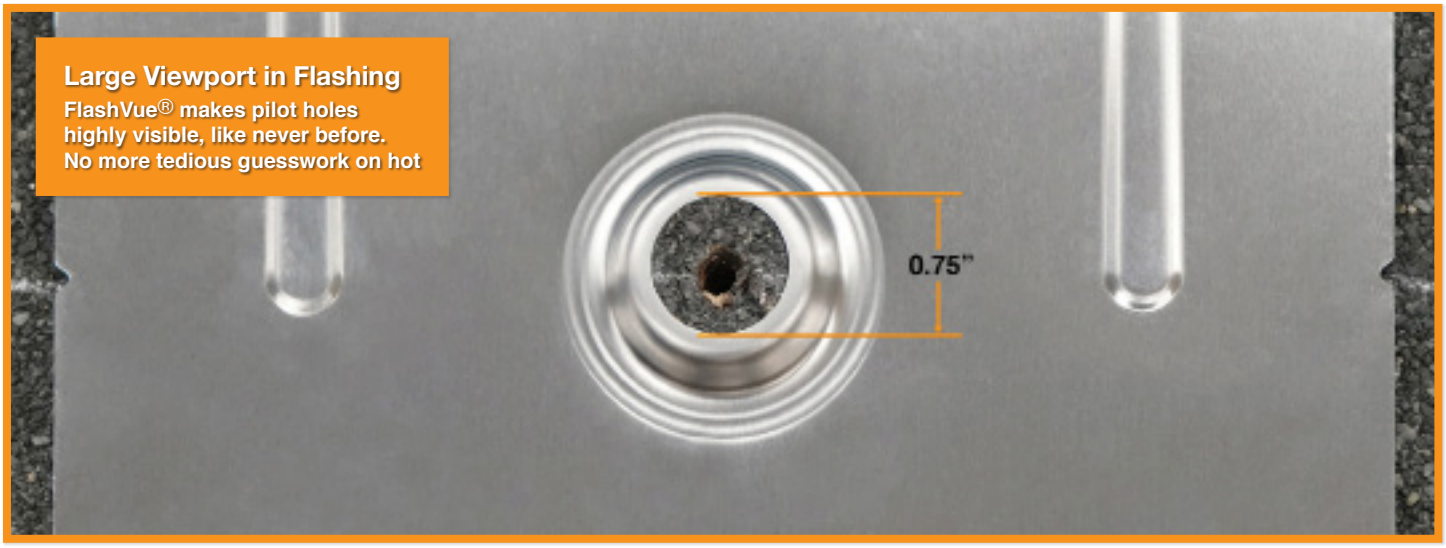
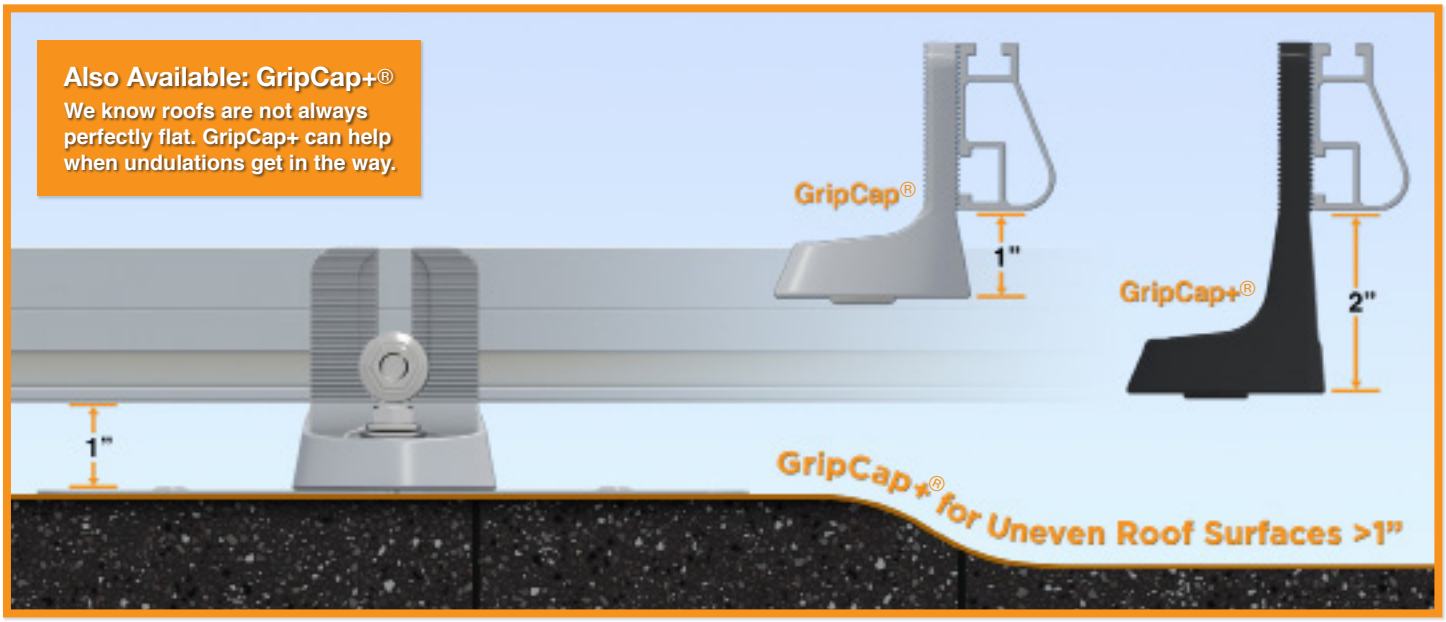
UL 2703, 441 (27)
TAS 100(A)-95

See Your Pilot Holes



Solve Roof Undulations



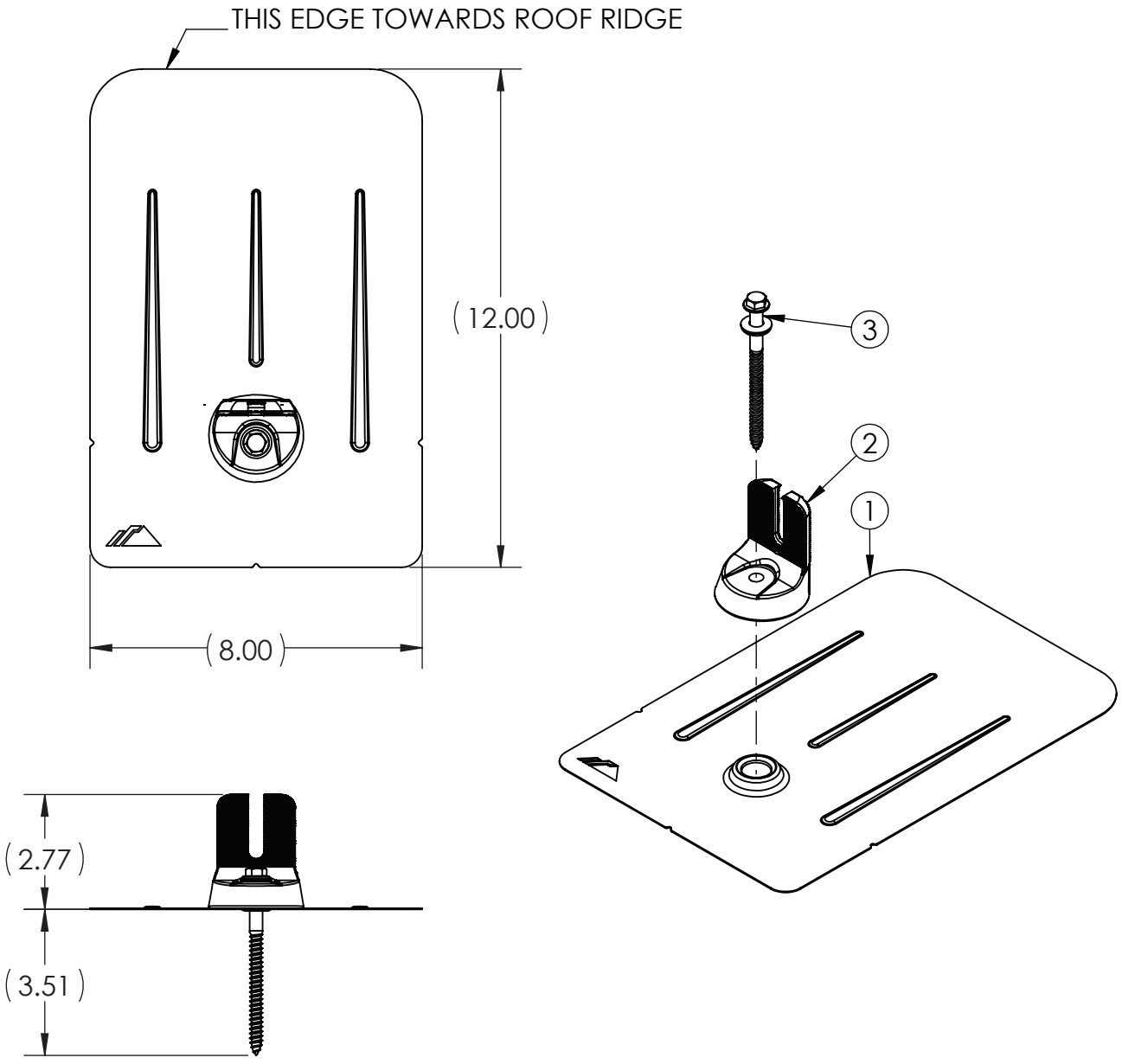
Trusted Strength & Certification

Attachment Loading
FlashVue® has been tested and rated to support 1161 (lbs) of uplift and 353 (lbs) of lateral load.

Structural Certification
Designed and certified for compliance with the International Building Code & ASCE/SEI-7.

Water Seal Ratings
Passed both the UL 441 Section 27 “Rain Test” and TAS 100-95 “Wind Driven Rain Test” by Intertek.

UL 2703 Listed System
Conforms to UL 2703 mechanical and bonding requirements. See Flush Mount Manual for more info.

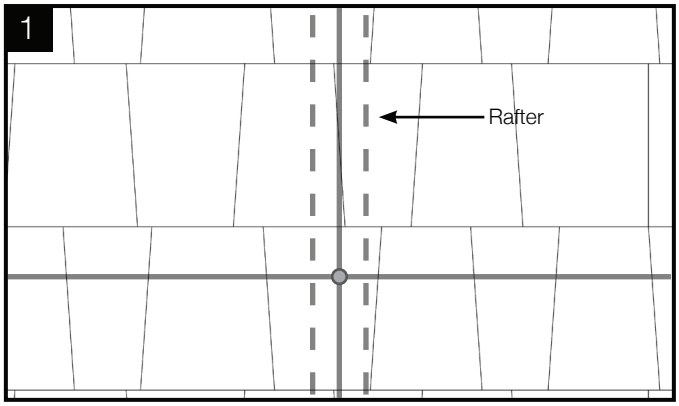


ITEM NO.	DESCRIPTION
1	FM FLASHING, MILL OR BLACK
2	GRIP CAP, MILL OR BLACK
3	LAG & BONDED WASHER, 5/16 X 4.25, 7/16 HEX HEAD

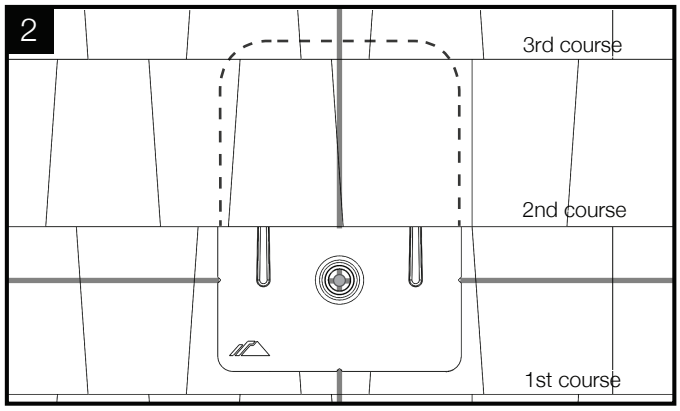
FLASHVUE®		
SIZE A	DO NOT SCALE DRAWING	
SCALE:1:4	WEIGHT: 0.6 lbs	SHEET 1 OF 1

Installation

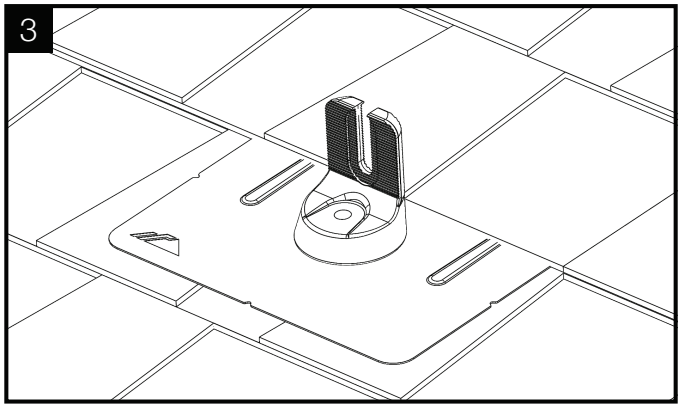
Tools Requi red: tape measure, chalk, approved sealing materials, driver with 1/4” bit and 7/16” hex socket



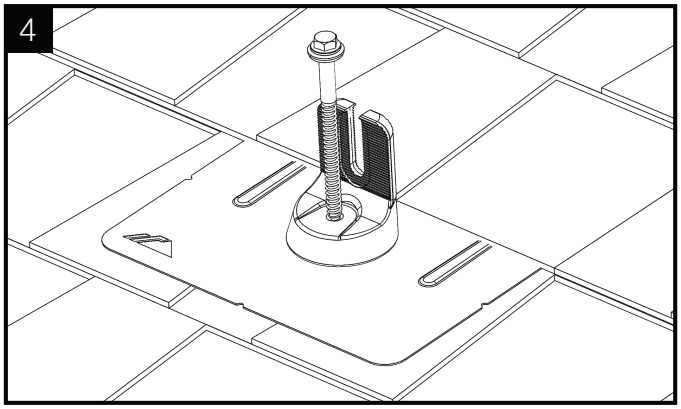
Locate rafters and snap vertical and horizontal lines to mark locations of flashings. Drill 1/4” pilot holes, then fill with roofing manufacturer's approved sealant.



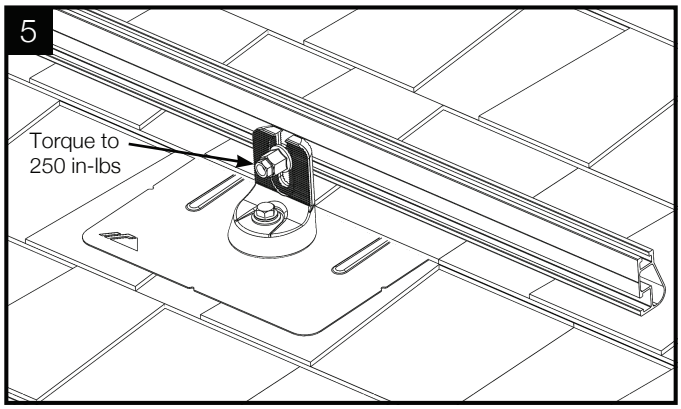
Slide flashing between 1st and 2nd course, so the top is at least 3/4” above the edge of the 3rd course and the bottom is above the edge of the 1st course. Line up pilot hole with view port.



Press Grip Cap onto flashing in desired orientation for E/W or N/S rails.



Insert lag bolt with EPDM backed washer through flashing. Tighten lag bolt until fully seated. FlashVue is now installed and ready for IronRidge XR Rails.



Attach rails to either side of the open slot using bonding hardware. Level rail at desired height, then torque to 250 in-lbs (21 ft-lbs).

Structural Certification
Designed and Certified for Compliance with the International Building Code & ASCE/SEI-7.

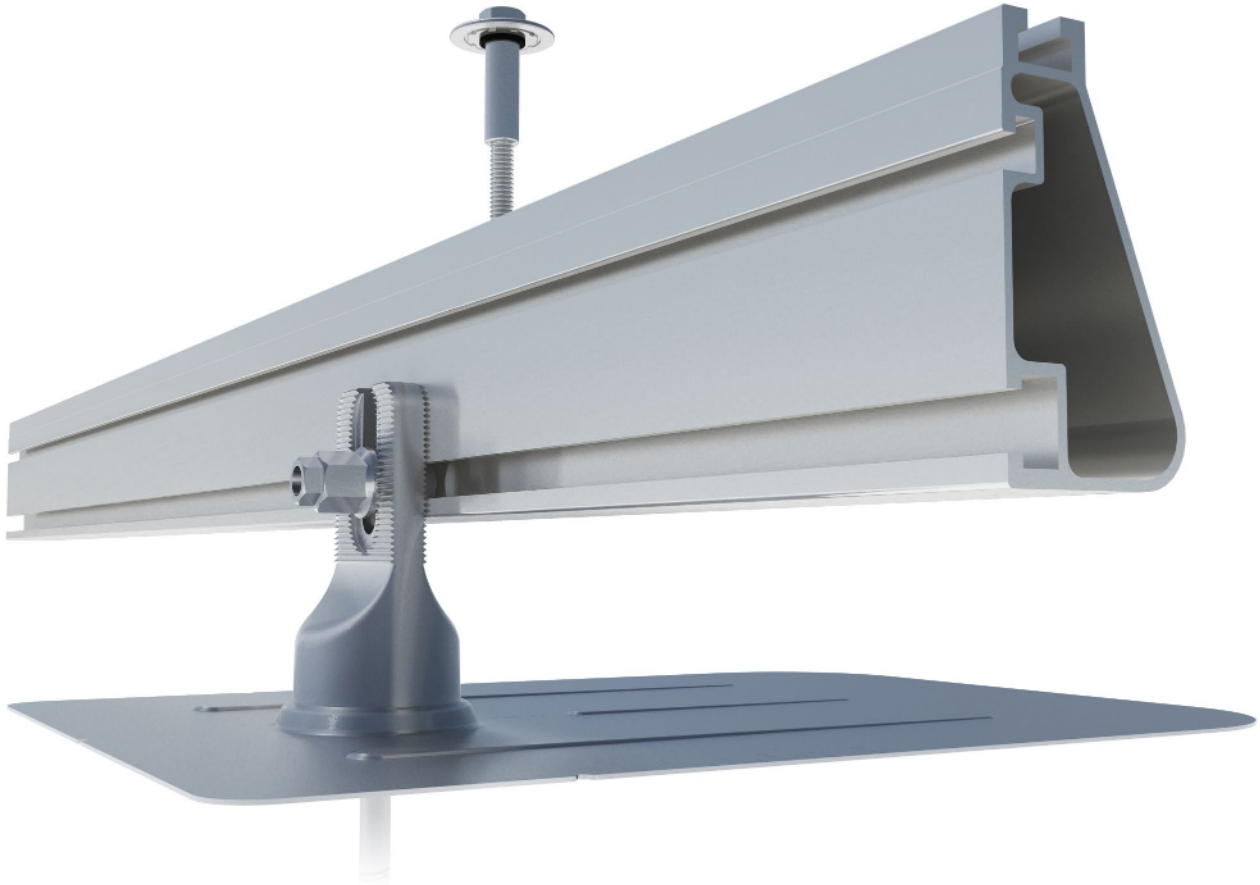
Water Seal Ratings
Water Sealing Tested to UL 441 Section 27 “Rain Test” and TAS 100(A)-95 “Wind Driven Rain Test” by Intertek. Tested and evaluated without sealant. Any roofing manufacturer approved sealant is allowed.

UL 2703
Conforms to UL 2703 (2015) Mechanical and Bonding requirements. See Ironridge Flush Mount Installation Manual for full ratings.

Datasheet

IRONRIDGE

Flush Mount System



Built for solar's toughest roofs.

IronRidge builds the strongest mounting system for pitched roofs in solar. Our components have been tested to the limit and proven in extreme environments, including Florida's high-velocity hurricane zones.

Our rigorous approach has led to unique structural features, such as curved rails and reinforced flashings, and is also why our products are fully certified, code compliant and backed by a 25-year warranty.

Strength Tested

All components evaluated for superior structural performance.

PE Certified

Pre-stamped engineering letters available in most states.

Class A Fire Rating

Certified to maintain the fire resistance rating of the existing roof.

Design Assistant

Online software makes it simple to create, share, and price projects.

UL 2703 Listed System

Entire system and components meet newest effective UL 2703 standard.

25-Year Warranty

Products guaranteed to be free of impairing defects.

XR Rails

XR10 Rail

A low-profile mounting rail for regions with light snow.

- 6’ spanning capability
- Moderate load capability
- Clear and black finish

XR100 Rail

The ultimate residential solar mounting rail.

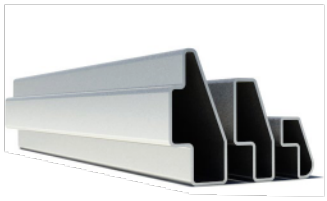
- 8’ spanning capability
- Heavy load capability
- Clear and black finish

XR1000 Rail

A heavyweight mounting rail for commercial projects.

- 12’ spanning capability
- Extreme load capability
- Clear anodized finish

BOSS™ Bonded Splices



Bonded Structural Splices connect XR Rails together.

- Integrated bonding
- No tools or hardware
- Self-centering stop tab

Clamps & Grounding

UFO™

Universal Fastening Objects bond modules to rails.

- Fully assembled & lubed
- Single, universal size
- Clear and black finish

Stopper Sleeves

Snap onto the UFO to turn into a bonded end clamp.

- Bonds modules to rails
- Sized to match modules
- Clear and black finish

CAMO™

Bond modules to rails while staying completely hidden.

- Universal end-cam clamp
- Tool-less installation
- Fully assembled

Bonding Hardware

Bond and attach XR Rails to roof attachments.

- T & Square Bolt options
- Nut uses 7/16” socket
- Assembled and lubricated

Attachments

FlashFoot2™

Flash and mount XR Rails with superior waterproofing.

- Twist-on Cap eases install
- Wind-driven rain tested
- Mill and black finish

FlashVue™

Flash and mount conduit, strut, or junction boxes.

- Twist-on Cap eases install
- Wind-driven rain tested
- Secures ¾” or 1” conduit

Knockout Tile

Replace tiles and ensure superior waterproofing.

- Flat, S, & W tile profiles
- Form-fit compression seal
- Single-lag universal base

All Tile Hook

Mount on tile roofs with a simple, adjustable hook.

- Works on flat, S, & W tiles
- Single-socket installation
- Optional deck flashing

Resources

Design Assistant

Go from rough layout to fully engineered system. For free.

Go to IronRidge.com/design

Endorsed by FL Building Commission

Flush Mount is the first mounting system to receive Florida Product approval for 2017 Florida Building Code compliance.

Learn More at bit.ly/floridacert

LANDMARK SURVEY

IDENTIFICATION

Street Address: 101 East Jefferson Street
Map and Parcel: 33-190
Census Track & Block: 1-107
Present Owner: First Methodist Church
Address: 101 East Jefferson Street
Present Use: Church
Original Owner: First Methodist Church
Original Use: Church

BASE DATA

Historic Name: First Methodist Church
Date/Period: 1923-24
Style: Colonial Revival
Height to Cornice: 31
Height in Stories: 2
Present Zoning: B-1
Land Area (sq.ft.): 89 x 115
Assessed Value (land + imp.): 25,880 + 230,730 = 265,610

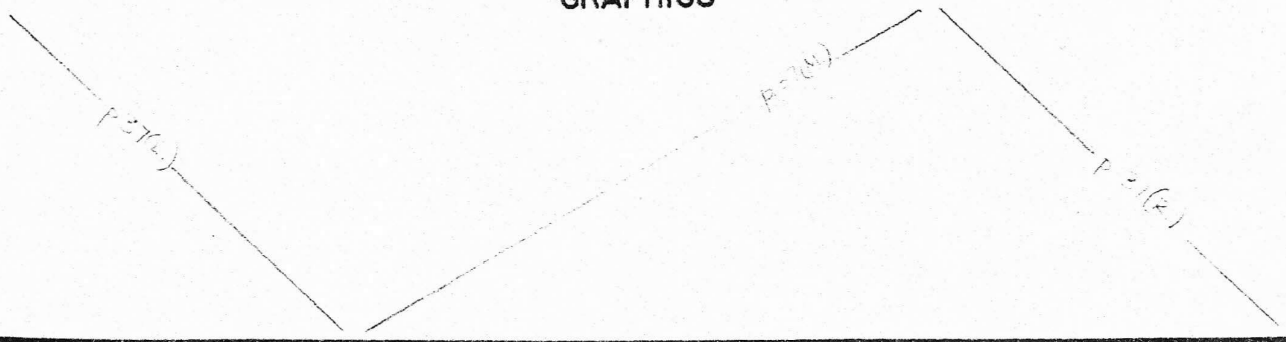
ARCHITECTURAL DESCRIPTION

Colonial Revival Church with a monumental portico of four doric columns, entablature with triglyphs, and a broad pediment. One of the most unusual features of this church is its detached tower and steeple. The source for this arrangement is clearly Wren's church type, which he developed after the Great Fire of 1666. Other impressive features of this design include the flight of entrance steps which spill out well beyond the flanking terraces which are themselves inspired by those found on the Lawn of the University. The interior is painted to resemble ashlar masonry and is fitted with typical panelled woodwork. The architect for this church was Joseph Hudnut.

HISTORICAL DESCRIPTION

The First Methodist Church bought the lot from R. S. J. Sterling in January of 1922. The $20,000 purchase price included a residence appraised at $2,200, which was removed to make room for the present structure. This site is the third to be occupied by the First Methodist Church. The earliest, built 1834-35, was situated on a lot bounded by Water, First, and South Streets. The second, begun in 1859, was finished in 1867, and was located on the corner of West Second and Water Streets.

GRAPHICS



CONDITIONS

Good

SOURCES

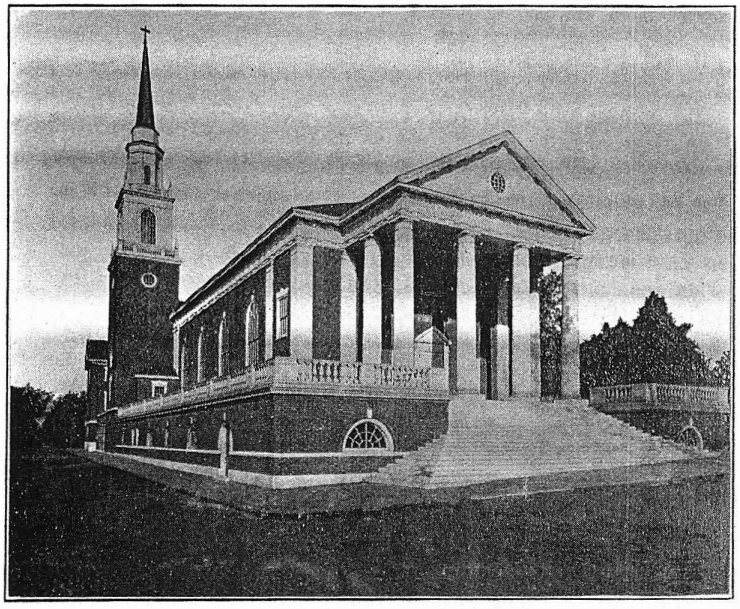
Alexander's Recollections, 1963 editions.
City Records

A CENTURY OF METHODISM IN CHARLOTTESVILLE VIRGINIA

By

A. L. BENNETT

A BRIEF ACCOUNT OF SOME OF THE MEN AND EVENTS CONNECTED WITH THE FIRST METHODIST EPISCOPAL CHURCH, SOUTH, OF CHARLOTTESVILLE, VIRGINIA



FIRST METHODIST EPISCOPAL CHURCH, SOUTH, CHARLOTTESVILLE, VA.

A Short History Prepared for the Centennial Celebration November 11-14, 1934.

Published by
FIRST METHODIST EPISCOPAL CHURCH, SOUTH
CHARLOTTESVILLE, VIRGINIA
1 9 3 4

The first Meth. church in Ch'ville was a small brick structure, built on the site now partly occupied by the old parsonage. It was built by James Lobbin, and had a seating capacity of about 350, including the gallery at the rear end. The very high pulpit, somewhat like that found in the old Episcopal churches, was used.

1st bldg.

The lot on which the church stood was purchased in 1834, from Jesse Scott, a colored man, for $150. Scott presented the church with $10 of the purchase money. This was considered very cheap, even in that day. The trustees' names were Gessner Harrison, Nathan C. Goodman, Stapleton Sneed, Matthew and Thomas Wingfield, Ebenzer Watts and Thomas Price.

The lot (bounded by Water, First and South Streets) contained about half an acre and the church stood in the center, surrounded by a large yard. The entrance was on the north side, facing Water Street. The building was surmounted by a tower of peculiar structure which Dr. Hammet said resembled an inverted card table. This comment caused the legs of the "card table" promptly to be sawed off.

There was no organ in the church, public opinion being at that time against the use of instrumental music in the service, as shown by the fact that an old lady of a sister denomination left her church upon the introduction of the violin into the choir. Nevertheless the singing was hearty, and was considered an important part of the service.

The church was dedicated in 1835 by Bishop Emory. Edward Wadsworth was then pastor. Says the late Rev. James A. Riddick: "At the Conference of 1835 Rev. Edward Wadsworth was appointed to Charlottesville and Scottsville, with one church, Temple Hill, near Carter's Bridge, between. He alternated the Sabbaths between the two towns and preached at Temple Hill during the week. Wadsworth was a young man of great ability, and Methodism gained considerably that year in all his churches. Dr. Wm. Hammet was then chaplain at the University of Virginia and greatly assisted Jamison, the first pastor and Wadsworth in securing funds for the new church.

The next year Riddick says: "I was assigned to the same charge which Wadsworth had held. The moral and religious statue of the two towns was fairly good and the Sabbath was properly observed."

"In 1837 Charlottesville was made an independent sta-

CHAPTER THREE

THE SECOND PERIOD

By the late fifties the congregation felt the need of a larger and better church. What we call the "old church" —the one located at the corner of Second and Water Streets and now used as a garage was begun under Dr. Judkins in 1859 but the work was interrupted by the War Between the States. The edifice was completed in 1866-67 while Thomas A. Ware was pastor. G. W. Spooner, a member of the church was the builder. Of the workmen on this building only one, George Nimmo, aged 84, is now living. The work done under the Ware pastorate cost $3900. By 1887 under the pastorate of H. M. Hope the congregation decided to enlarge and remodel the church at a cost of $7000.00. G. W. Spooner, the original builder and his son were the contractors. Another son, George, was the draftsman. He afterwards became one of our ministers and was superannuated last year. In a letter to the committee he states that nothing of the old church remained except the walls. A choir loft was added to the rear of the pulpit, circular galleries on the front and sides were built, the roof was made steep with open finsh ceiling, new windows placed, towers built on both front corners with one of them continuing up into a high spire, modern and beautiful pews as well as a pipe organ—the first such instrument the church had—installed. The basement consisted of three rooms for the primary department of the Sunday School, the Board of Stewards and general assembly. This was the most modern church building in the city at that time.

Only the lecture or Sunday School room in the basement was finished until after the war. It was here that the services were conducted during that period.

During the days of the War Between the States Thos. H. Early (1860-62) and Jno. S. Lindsay (1862-65) were our pastors. The records indicate "in the army" after many of the names of members, some of whom never returned. It was said that Lindsay endeared himself to the people because of his work among the wounded soldiers brought here.

W. Aiken Smart (1913-14) is a son of Dr. R. D. Smart, who five years previous was pastor of First Church. Young Smart was recognized as one of the most promising young men in the Conference. His pastorate was terminated in the summer of 1914 by a call to a professorship in Emory University, which he ably fills today. But he did much in this one year for First Church, whose membership for the first time reached the thousand mark. In his final meeting with the quarterly conference he stated his greatest regret in leaving Charlottesville was that he would not be its pastor when the new church was completed.

L. T. Williams (1914-16), now superannuated and living in Richmond, served First Church during two years when unsuccessful efforts for a new church were continued. A net gain of 218 members and an even greater increase in the Sunday School were made.

The years 1916-20 found the affable J. K. Joliff as our pastor. Many efforts to secure a new church met with the failure which befell the previous ones, but the membership showed a net gain of one hundred and fifty. The church for the sixth time entertained the Virginia Conference in 1918. Bishop Hendrix presiding and Dr. B. F. Lipscomb, a former pastor and Presiding Elder, serving as secretary.

In the fall of 1920 H. P. Myers, a young minister who had not served a church of the first rank was sent to Charlottesville, because he had performed his task so well in the smaller churches the Bishop and his advisors believed he could build a new church. What he lacked in years was more than offset in energy, earnestness and good judgment. He spent some months in visiting his members and reviving the sentiment for a new building.

On April 4, 1921, a committee composed of N. T. Shumate, W. H. Snyder, B. G. Childs, Dr. Wm. R. Smithey, O. E. Hawkins, H. B. Graves, J. D. Via, W. R. Barksdale, W. E. Wilson, and S. F. Hamm was appointed to secure pledges of $100,000 for a new church. So well was this duty performed that $104,431 was subscribed within a few weeks.

The next obstacle to be overcome was the location. This question had been discussed for many years and had caused a division of opinion. Some members desired the old site; others wanted a new and better located lot. Options had

been secured and allowed to expire for years; committees had been unable to solve this vexing problem.

The church wisely secured its pledges before appointing on July 25, 1921 a committee on location composed of M. V. Pence, chairman of the board; O. E. Hawkins, its treasurer; and N. T. Shumate. In the following September the location now used (bounded by First High and Jefferson Streets) was accepted.

On October 10, 1921, a committee on church plans consisting of N. T. Shumate, J. E. Harrison, W. H. Snyder, B. G. Childs, and S. F. Hamm was appointed. On October 31, 1921, Jos. Hudnut of New York City was selected as architect. The plans and specifications were adopted the following February.

present bldg

The building committee, composed of J. R. Morris, M. V. Pence and N. T. Shumate, arranged with the Charlottesville Lumber Company to erect the church on a cost plus ten per cent commission. The firm, however, donated half of its commissions to the church in addition to the liberal contributions made by several members of the firm who were members of the church. J. E. Harrison, Vice-President of the Company, and a member of the board, supervised the work and endeavored to make the structure a monument to the city.

Ground for the building was broken on March 12, 1923 at which time Bishop Du Bose, who was residing in Charlottesville spoke. The work was immediately begun and rushed, although a great amount of earth had to be moved. So rapidly did this progress that the laying of the corner stone by the Masonic Grand Lodge of Virginia was held on March 31, 1924, M. W. Callahan being the Grand Master. Bishop Candler delivered a great address on the occasion.

The work on this large plant went forward so quickly that the last service was conducted in the old church on Sunday, October 5, 1924, a day mingled with rejoicing because of the progress made in achieving our goal of having one of the best church plants in Southern Methodism and sadness because we were leaving our old church which had housed us since 1859 and the site of our church home since our organization.

On the following Sunday, November 1, 1924, Dr. Myers preached the first sermon in the new church. Though the

main auditorium was not completed until the following fall. In the meantime the social room was used for the church services. The Sunday School building was used, however, from the first day we entered the church.

While the four year pastorate of Dr. Myers will always be remembered because of the erection of the church, it would be recorded as one of the most successful in our history if the edifice had not been constructed. At the same time he was erecting the church he was building the membership and Sunday School and effecting an organization for effective work.

Henry C. Pfeiffer was assigned the task of finishing the church and occupying the main auditorium on the first Sunday in December, 1925. Bishop McMurry preached at both services on this occasion to one of the largest congregations ever assembled in Charlottesville. During the week former pastors were present to conduct the services.

The building has an auditorium that will seat 975; a social room of the same size to care for the social and physical needs of the church; a student club room, dedicated to the memory of Dr. F. H. Smith, a chapel with a seating capacity of 300, which is used as an assembly room for the adult department of the Sunday School, prayer services and Epworth League; a large and well furnished kitchen; a comfortable ladies parlor, and above all ample auditoriums and class rooms for every department of the church school.

The lots upon which the church is erected, building and equipment cost slightly more than $300,000, of which the Board of Church Extension of the Methodist Episcopal Church, South, gave $72,125.42 out of funds left from war work and the Board of Missions of the Virginia Conference gave $20,000. When the building was completed the church owed a debt of $109,700 which has been reduced to $51,800.

So well did Dr. Pfeiffer perform his duties that he served the church from 1924-28, being the sixth and last pastor to serve us for four consecutive years. He was at his best in organizing the work so as to use the new plant to its maximum capacity. As a preacher, he was among the best in the conference; as a gentleman, none surpassed him. His pastorate marked four years of growth in every phase of the work of the church.

J. W. Moore (1928-30) came to First Church after

a rich and successful pastorate in many of our largest churches. He is a deep thinker and able preacher with a wonderful storehouse of apt illustrations to aid him in driving home a truth. The membership continued to increase and every department of the church was working well when he was appointed to the Eldership of the Petersburg District at the end of his second year.

The beautiful copy of Raphael's Transfiguration in the north end of the church auditorium was the work of and presented on October 26, 1930, by Mrs. Ada Woodson Quarles, a faithful and useful member of the church, as a memorial to her father, Rev. John T. Payne, who died December 23, 1918, after being a member of the Virginia Conference for more than thirty years and to her brother, Corporal Maurice L. Payne, Co. D, 317th Infantry Division, A. E. F., who was killed in France, July 29, 1918.

Because their service to us have been so recent and helpful, mention is made of the Eldership of: W. Archie Wright, 1921-25, who came to the district as a young Elder. He served and greatly aided us during the period when we were erecting our church. M. S. Colonna proved a capable, patient and efficient leader. T. F. Carroll, another young man, showed remarkable executive ability as well as being an able preacher. Daniel T. Merritt, our present Elder, won us by his able leadership and lovely character. We wish we could keep him in his responsible position indefinitely.

C. C. Bell (1930-33) a young and energetic preacher who was not afraid of hard work followed Dr. Moore for three years of diligent labor during a time when the people were facing the depression and debt on the building courageously. He went from First Church to Trinity, Newport News, where he is proving quite successful with a splendid program of work.

In 1933 the members of the church were made happy by the return of George E. Booker whom many remembered so pleasantly from his former pastorate. He left us an able man, but returned enriched by his pastorate in many of the leading churches in the conference as well as the Eldership of the Richmond District for four years. He is recognized as one of the ablest ministers in Southern Methodism. His popularity with both the clergy and laymen is

THE SECRETARY OF THE INTERIOR'S STANDARDS FOR REHABILITATION &

ILLUSTRATED GUIDELINES ON **SUSTAINABILITY** FOR REHABILITATING HISTORIC BUILDINGS

U.S. Department of the Interior
National Park Service
Technical Preservation Services

Sustainability

Before implementing any energy conservation measures to enhance the sustainability of a historic building, the existing energy-efficient characteristics of the building should be assessed. Buildings are more than their individual components. The design, materials, type of construction, size, shape, site orientation, surrounding landscape and climate all play a role in how buildings perform. Historic building construction methods and materials often maximized natural sources of heating, lighting and ventilation to respond to local climatic conditions. The key to a successful rehabilitation project is to identify and understand any lost original and existing energy-efficient aspects of the historic building, as well as to identify and understand its character-defining features to ensure they are preserved. The most sustainable building may be one that already exists. Thus, good preservation practice is often synonymous with sustainability. There are numerous treatments--traditional as well as new technological innovations--that may be used to upgrade a historic building to help it operate even more efficiently. Increasingly stricter energy standards and code requirements may dictate that at least some of these treatments be implemented as part of a rehabilitation project of any size or type of building. Whether a historic building is rehabilitated for a new or a continuing use, it is important to utilize the building's inherently-sustainable qualities as they were intended. It is equally important that they function effectively together with any new measures undertaken to further improve energy efficiency.

15

[15] Glass skylight illuminates historic shopping arcade.

16

17

[16-18] Inherently sustainable features of historic buildings: Shutters and a deep porch keep the interior cool in a historic house in a warm climate (top); a skylight provides natural light to the interior of this mid-20th century house (center); partially glazed partitions and doors allow natural light into the corridor of a historic office building (bottom).

18

PLANNING

RECOMMENDED	NOT RECOMMENDED
Forming an integrated sustainability team when working on a large project that includes a preservation professional to ensure that the character and integrity of the historic building is maintained during any upgrades.	Omitting preservation expertise from a sustainability project team.
Analyzing the condition of inherently-sustainable features of the historic building, such as shutters, storm windows, awnings, porches, vents, roof monitors, skylights, light wells, transoms and naturally-lit corridors, and including them in energy audits and energy modeling, before planning upgrades.	Ignoring inherently-sustainable features of the existing historic building when creating energy models and planning upgrades.
Identifying ways to reduce energy use, such as installing fixtures and appliances that conserve resources, including energy-efficient lighting or energy-efficient lamps in existing light fixtures, low-flow plumbing fixtures, sensors and timers that control water flow, lighting and temperature, before undertaking more invasive treatments that may negatively impact the historic building.	
Prioritizing sustainable improvements, beginning with minimally invasive treatments that are least likely to damage historic building material.	Beginning work with substantive or irreversible treatments without first considering and implementing less invasive measures.

SOLAR TECHNOLOGY

RECOMMENDED	NOT RECOMMENDED
Considering on-site, solar technology only after implementing all appropriate treatments to improve energy efficiency of the building, which often have greater life-cycle cost benefit than on-site renewable energy.	Installing on-site, solar technology without first implementing all appropriate treatments to the building to improve its energy efficiency.
Analyzing whether solar technology can be used successfully and will benefit a historic building without compromising its character or the character of the site or the surrounding historic district.	Installing a solar device without first analyzing its potential benefit or whether it will negatively impact the character of the historic building or site or the surrounding historic district.
Installing a solar device in a compatible location on the site or on a non-historic building or addition where it will have minimal impact on the historic building and its site.	Placing a solar device in a highly-visible location where it will negatively impact the historic building and its site.
Installing a solar device on the historic building only after other locations have been investigated and determined infeasible.	Installing a solar device on the historic building without first considering other locations.

72

73

Recommended: [72-73] Solar panels were installed appropriately on the rear portion of the roof on this historic row house that are not visible from the primary elevation.

74

Recommended: [74] Free-standing solar panels have been installed here that are visible but appropriately located at the rear of the property and compatible with the character of this industrial site.

75

Not Recommended: [75] Solar roof panels have been installed at the rear, but because the house is situated on a corner, they are highly visible and negatively impact the character of the historic property.

SOLAR TECHNOLOGY

RECOMMENDED	NOT RECOMMENDED
Installing a low-profile solar device on the historic building so that it is not visible or only minimally visible from the public right of way: for example, on a flat roof and set back to take advantage of a parapet or other roof feature to screen solar panels from view; or on a secondary slope of a roof, out of view from the public right of way.	Installing a solar device in a prominent location on the building where it will negatively impact its historic character.
Installing a solar device on the historic building in a manner that does not damage historic roofing material or negatively impact the building's historic character and is reversible.	Installing a solar device on the historic building in a manner that damages historic roofing material or replaces it with an incompatible material and is not reversible.
	Removing historic roof features to install solar panels.
	Altering a historic, character-defining roof slope to install solar panels.
	Installing solar devices that are not reversible.
Installing solar roof panels horizontally -- flat or parallel to the roof—to reduce visibility.	Placing solar roof panels vertically where they are highly visible and will negatively impact the historic character of the building.

76

77

79

Not Recommended: [79] Although installing solar panels behind a rear parking lot might be a suitable location in many cases, here the panels negatively impact the historic property on which they are located.

Recommended: [76-77] Solar panels, which also serve as awnings, were installed in secondary locations on the side and rear of this historic post office and cannot be seen from the front of the building. [78] Solar panels placed horizontally on the roof of this historic building are not visible from below.

78

ROOFS—COOL ROOFS AND GREEN ROOFS

RECOMMENDED	NOT RECOMMENDED
Retaining and repairing durable, character-defining historic roofing materials in good condition.	Replacing durable, character-defining historic roofing materials in good condition with a roofing material perceived as more sustainable.
Analyzing whether a cool roof or a green roof is appropriate for the historic building.	
Installing a cool roof or a green roof on a flat-roofed historic building where it will not be visible from the public right of way and will not negatively impact the building's historic character.	Installing a cool roof or a green roof without considering whether it will be highly visible from the public right of way and will negatively impact the building's historic character.
Selecting appropriate roofing materials and colors when putting a new cool roof on the historic building.	Installing a cool roof that is incompatible in material or color with the historic building.
Ensuring that the historic building can structurally accommodate the added weight of a green roof and sensitively improving the structural capacity, if necessary.	Adding a green roof that would be too heavy and would damage the historic building or supplementing the structural capacity of the historic building in an insensitive manner.

85

86

Recommended: [85-86] A cool or green roof is best installed on a flat roof where it cannot be seen from the public right of way and will not negatively impact the character of the historic building.

87

Not Recommended: [87] Historic roofing materials in good condition should be retained rather than replaced with another material perceived as more sustainable, such as, in this case, solar roofing shingles.

88

Not Recommended: [88] This new, cool white metal roof is not an appropriate material or color for this historic mid-20th century house.

National Park Service
U.S. Department of the Interior

Technical Preservation Services
National Center for Cultural Resources

ITS
NUMBER 32

Interpreting
The Secretary of the Interior's Standards for Rehabilitation

Subject: Slate Roof Treatments

Applicable Standards: 2. Retention of Historic Character
6. Repair/Replacement of Deteriorated or Missing Features Based on Evidence

Issue: The roof of a historic building is often its most character-defining feature and a roof covered in slate only adds to this character. Slate as a roofing material continues to be one of the most durable materials available, with a life-span as long as 150 years. It is also weatherproof, aesthetically appealing, and readily obtainable. Although the recommended treatment is to repair a slate roof or replace it in kind if necessary, with rising costs and a variety of alternative roofing products on the market, property owners may prefer to replace slate with alternative roofing materials. These include asphalt-based fiberglass shingles, polymer-based shingles (often containing recycled materials such as rubber), and less successfully, concrete and metal shingles. Replacing a deteriorated historic roof may fail to meet the Secretary's Standards if it is replaced with a material that does not have the same visual qualities as the original. Slate roofs can often be repaired and some roofers specialize in this practice by removing and replacing only the most damaged tiles and keeping as much of the original as possible. This is the recommended approach. It may be accomplished on an as-needed basis and is generally cost effective. Most importantly, it preserves the roofing material, and thus, preserves the building's historic character.

At times, however, slate may be damaged beyond repair or missing entirely. What, then, is the most appropriate treatment? Replacement of the slate in kind to match the existing is always the preferred treatment. However each project must be evaluated on a case-by-case basis, taking into account the existing condition of the roof, its profile and visibility, the availability of materials, and the overall design of the building.

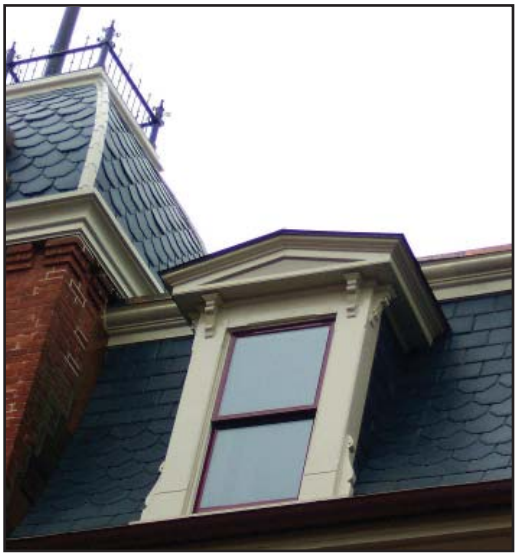
Typical view of Colonial-Revival apartment building in complex before rehabilitation. Note the mottled appearance of original slate due to numerous past repairs.

Application 1 *(Compatible Treatment)*: After surveying approximately fifty buildings in this Colonial Revival-Style apartment complex, it was determined that the 80-year old slate roofing was in poor condition. As a result, the owner proposed that all the slate be removed and replaced with a polymer-based substitute. The most distinctive features of these simple 2-1/2 story brick garden apartments are their hipped and gabled slate roofs, which are very visible within the complex. Therefore, replacement with a substitute material was deemed incompatible and the owner agreed to use new slate from the original quarry. The new slate roofs, which require only seasonal maintenance, are a sound investment and historically appropriate.

Close up of damaged and previously repaired slate.

Right: *New rubber slate (center; left) next to historic slate (right).*

Application 2 *(Compatible Treatment)*: This 1894 example of Second Empire architecture is "high style" with pedimented dormers, balconies, corbelled cornices, a dominant central tower, and a small mansard roof covered in slate. Prior to rehabilitation the property was in extremely deteriorated condition and although some of the slate on the mansard was still there, it was delaminating, fractured, and partially painted. Since the roof is only one of many decorative elements making up the primary façade and not the sole defining feature of the building, replacing the slate with a polymer-based substitute slate was an acceptable alternative. Although the replacement slate is visible, it replicates the decorative fish-scale pattern of the historic slate and, thus, has the same appearance as the original roof. Because the building is on a narrow street and is generally viewed at an angle rather than head on, the mansard roof is not the major focal point.



Left: *Second Empire former hotel, built in 1894.*

Right: *Close-up of substitute slate after installation.*

Application 3: *(Compatible Treatment)*: After careful inspection, the slate roof of this circa 1895 former brewery was determined to be beyond repair and during rehabilitation was replaced with high quality asphalt-based fiberglass shingles. The new asphalt shingles are the same size and color as the original slate and have similar shadow lines. The roof, with its many towers, turrets and monitors, is clearly a distinctive and prominent feature, but because of the massive scale and height of the building, it can only be viewed at a considerable distance. For this reason, a substitute roofing material was acceptable in this instance.

Above: *Close up of the replacement roof after installation.*

Left: *View of the historic brewery taken from a distance after rehabilitation.*

Audrey T. Tepper, Technical Preservation Services, National Park Service

National Park Service
U.S. Department of the Interior
Technical Preservation Services

ITS
NUMBER 52

Interpreting
The Secretary of the Interior's Standards for Rehabilitation

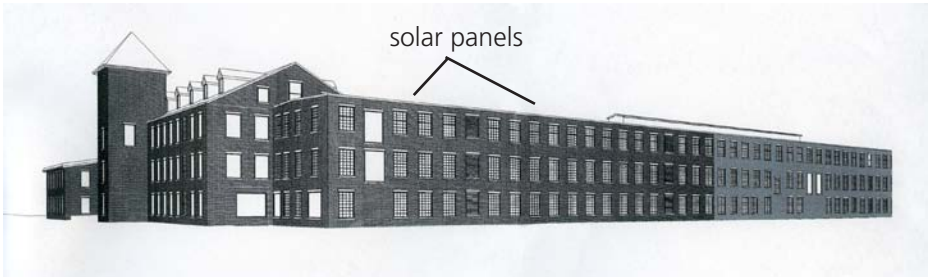
Subject: Incorporating Solar Panels in a Rehabilitation Project

Applicable Standards:
2. Retention of Historic Character
9. Compatible Additions/Exterior Alterations

Issue: Enhancing the energy efficiency of a historic building is important. To that end, it is often possible to install features such as solar panels and photovoltaic cells provided they are installed in a sensitive manner. Because these elements must be positioned to take advantage of unobstructed sunlight, the roof of a historic structure is an obvious location. The roofline of a historic building is often a distinctive feature. Therefore, the installation of solar panels should conform to guidance regarding rooftop additions, i.e. that they be minimally visible, to avoid altering the historic character of the building. Historic buildings with a flat roof or parapet can usually accommodate solar panels because the panels will be hidden, while properties with a hipped or gabled roof are generally not good candidates for a rooftop solar installation. Solar panels on historic buildings should not be visible from the public right of way such as nearby streets, sidewalks or other public spaces.

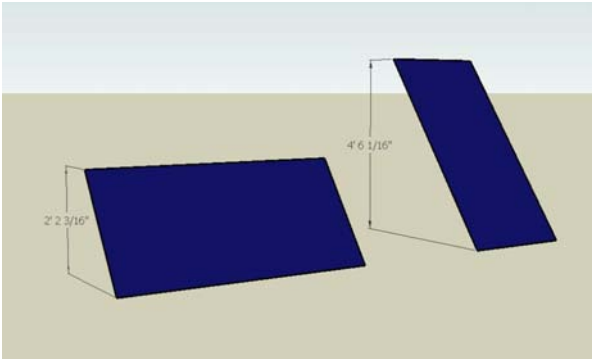
In circumstances where solar collectors are not placed on rooftops, they should only be positioned in limited or no-visibility locations in secondary areas of the property. Vegetation or a compatible screen may also be an option to further reduce the impact of these features on a historic property. For some historic buildings, it may not be possible to incorporate solar panels and meet the Secretary of the Interior's Standards for Rehabilitation.

Application 1 (*Compatible treatment*): The rehabilitation of this mid-nineteenth century mill incorporated a large, roof-mounted photovoltaic installation. Although the historic building does not have a parapet wall at the roofline, the height of the building and the arrangement of the panels render the entire installation invisible from the ground. It is important to note that the panels are placed horizontally. Had the panels been installed with a vertical tilt, the angle required to maximize efficiency would have caused the panels to extend significantly higher above the roof. Simply changing the direction in which the panels are tilted can affect their visibility and reduce their impact on the character of the historic property.



Because of the size of this historic mill, a large array of solar panels could be installed on the flat roof without being seen from the ground.

Solar panels installed on the flat roof.



By placing the panels horizontally, the overall height of the installation and its visibility is reduced.

Application 2 (*Incompatible treatment*): During the rehabilitation of this late-nineteenth century commercial building, a conspicuous rooftop monitor with prominent solar panels and skylights was constructed on the one-story structure. The size and finish of this rooftop addition are incompatible with the historic character of the building. However, the building could have accommodated both skylights and solar panels if they had been installed differently. An alternative design that could have met the Standards would have included low-profile skylights and solar panels concealed behind the parapet wall.

The addition of a large rooftop monitor featuring skylights on the front slope and solar panels on the rear slope is not compatible with the historic character of this small, one-story commercial building.

Application 3 (*Compatible treatment*): The rehabilitation of this historic post office incorporated solar panels as dual-function features: generation of electricity and shading for south-facing windows. In this instance, the southern elevation of the building is also a secondary elevation with limited visibility from the public right of way. Additionally, because this area of the building is immediately next to the post office's loading dock, it has a more utilitarian character than the primary facades and, therefore, can better accommodate solar panels. Because the panels are in a suitable location at the rear of the property and are appropriately sized to serve as awnings, they do not affect the overall historic character of the property. Additionally, a screen of tall plantings shields the solar panels from view from the front of the building, further limiting their visibility.

Above: *Shown from the rear of the property, these solar panels serve a secondary function as awnings to shade south-facing windows. Because of their location at the back of the building immediately adjacent to a loading dock, the installation of these panels does not affect the historic character of the property.*

Left: *The solar panels are not visible from the front of the building. Additionally, even if the vegetation were removed, the installation would only be minimally visible along an alley at the rear of a secondary side elevation.*

Jenny Parker, Technical Preservation Services, National Park Service

National Park Service

ARTICLE

Solar Panels on Historic Properties: On a Cross Gable

King's Daughters Home, North Carolina

It is often easier to accommodate solar hot water systems than photovoltaic systems on historic properties because fewer panels are necessary. Solar hot water can often operate utilizing only a few panels, while photovoltaic systems often require multiple arrays to produce enough electricity to be worth the investment.

The visual prominence of the two solar collectors installed on this cross gable is further minimized by the complexity of this elevation.

Several specific circumstances made it possible to install solar collectors on a street–facing slope of this gable roof. The panels were flush–mounted on a low–pitch roof, and only two were required. They were installed on a portion of the roof that is set back from the face of the building behind a prominent pediment. Thus, the solar collectors are visible but not conspicuous, and this installation meets the Standards in the context of the overall project.

Front of the King's Daughters Home. The solar panels are installed on the facade that faces the street at the right edge of this photograph.

Next article: Solar panels on a rear porch roof

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National Park Service

ARTICLE

Solar Panels on Historic Properties: On a Low-Slope Gable

Vermont Residence

The gable end of this historic apartment building faces the street. Low profile solar collectors for a water heating system were flush mounted on the sloped roof on the south side of the gable. Though visible, these few panels have relatively little impact on the historic character of the property. However, if the roof had been a more prominent feature of the property, this installation may not have been appropriate.

Low-profile solar collectors located on the south side of the gable roof are minimally visible.

From this angle, the panels are more noticeable, yet the historic character of the building is not significantly diminished.

Next article: Solar panels on a cross gable

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