



HISTORIC PRESERVATION COMMISSION

Marc Elrich
County Executive

Sandra I. Heiler
Chairman

Date: August 15, 2019

MEMORANDUM

TO: Hadi Mansouri
Department of Permitting Service

FROM: Dan Bruechert
Historic Preservation Section
Maryland-National Capital Park & Planning Commission

SUBJECT: Historic Area Work Permit #883946 – Exterior Limewash

The Montgomery County Historic Preservation Commission (HPC) has reviewed the attached application for a Historic Area Work Permit (HAWP). This application was **Approved** at the August 14, 2019 Historic Preservation Commission meeting.

The HPC staff has reviewed and stamped the attached construction drawings.

THE BUILDING PERMIT FOR THIS PROJECT SHALL BE ISSUED CONDITIONAL UPON ADHERENCE TO THE ABOVE APPROVED HAWP CONDITIONS AND MAY REQUIRE APPROVAL BY DPS OR ANOTHER LOCAL OFFICE BEFORE WORK CAN BEGIN.

Applicant: Tom and Melissa Dann
Address: 34 W. Kirke St., Chevy Chase

This HAWP approval is subject to the general condition that the applicant will obtain all other applicable Montgomery County or local government agency permits. After the issuance of these permits, the applicant must contact this Historic Preservation Office if any changes to the approved plan are made. Once work is complete the applicant will contact Dan Bruechert at 301.563.3408 or dan.bruechert@montgomeryplanning.org to schedule a follow-up site visit.





Historic Area Work Permit Application
34 W. Kirke Street
Chevy Chase, MD

Applicant: Melissa & Thomas Dann
Architect: Patrick Cooke, RA of Thomson & Cooke Architects

REVIEWED

By Dan.Bruechert at 2:41 pm, Aug 15, 2019

Our house at 34 West Kirke Street in the Chevy Chase Village Historic District is a c.1915 brick bungalow for which we are nearing completion of an extensive historic renovation. Our plans for the renovation were previously approved by HAWP in Case No. 35/13-16GG (Permit #800901). During the course of construction, we discovered that there were extensive problems with the brick exterior that require remediation not previously contemplated in our initial HAWP application.

Deterioration of the Brick Exterior and Resulting Interior Moisture and Mold

The exterior of the house was constructed of brick veneer over plaster. All bricks are porous, but on our house the use of just a single layer of unprotected bricks over plaster compounded the problem of moisture penetration. In the attached pictures of the original and current side and front facades of the house, the brick shows signs of efflorescence, cracks in the mortar joints, changes in the width or joint profile, damp walls and damaged interior plaster due to moisture.

One of the first things we noticed as we began work on the house were wall interiors that were covered in black mold. Further examination revealed that the mold had permeated the interior of the wall, with consistent moisture coming into the walls from the brick facade. Water infiltration is one of the most common causes of brick deterioration. At our house, as some of the pictures show, there is evidence of water penetration on the interior and exterior. Plaster was broken up and moist, and wood joists were rotting. We replaced much of this but approximately 60% of our exterior is the original brick that still has significant flaws that may allow for water to continue to penetrate.

There is efflorescence on the brick, which according to the Masonry Institute suggests there has been “sufficient moisture in the wall to render the salts into a soluble solution and ... a path for the soluble salts to migrate to the surface where... the salts then crystallize and cause efflorescence.” (<https://www.masonryinstitute.org/pdf/612.pdf>)

Per the NPS guidelines: “While masonry is among the more durable of historic building materials, it is also very susceptible to damage by improper maintenance or repair techniques, and harsh or abrasive cleaning methods.” In considering options for cleaning the brick, we found that most cleaning products are categorized as pollutants and cannot be neutralized (<https://www.nps.gov/tps/how-to-preserve/briefs/1-cleaning-water-repellent.htm>). In any event, simply cleaning the facade will not remedy the moisture issue. The level of poorly matched brick and mortar materials, badly executed repointing and repair, uneven width or joint profile and other issues means that the exterior will remain unsightly and never achieve historical accuracy. Moreover, one of our main concerns is that the risk of moisture affecting the interior will not diminish.

Historic Preservation of Brick with Limewash

In order to identify a historically approved method for preserving our brick facade, protecting against moisture and mold, and improving the house’s appearance consistent with surrounding historic properties, we have researched the pros and cons of applying various coatings to the brick. Regular paint methods — acrylic-based, oil-based or others — can further damage brick because they prevent the brick from breathing. It is critical for brick to breath so that water can evaporate.

Limewash, on the other hand, is a centuries old technique that has been used in a variety of historic preservation contexts. The National Center for Preservation Technology and Training (<http://www.ncptt.nps.gov>) has carried out and published studies about limewash and its impact on brick. In one of the articles, *The Other White Paint*”, the NCPTT acknowledged limewash’s widespread historic use: “Its most popular cultural reference may come out of *The Adventures of Tom Sawyer*, but limewash (also known as whitewash) is enjoying renewed interest as a protectant for historic structures, thanks in part to research undertaken by NCPTT and its partners.” (<https://www.ncptt.nps.gov/blog/the-other-white-paint/>).

The National Park Service, in an article *Limewash: An Old Practice and a Good One*” writes “If buildings are not painted, limewash can slow deterioration of wood and brick due to weather and allow the rain to run down the outside walls without soaking in. It helps buildings ‘breathe’ by allowing trapped moisture to pass out of the building, reducing mildew and rotting of structural timbers.” (<https://www.nps.gov/articles/limewash-an-old-practice-and-a-good-one.htm>).

Unlike paint, limewash absorbs with porous surfaces (like brick) and reacts to carbon dioxide, hardening and forming protective crystalline calcium carbonate which aids in its protective qualities. According to an abstract presented at the International Building Lime Symposium 2005, *Limewash: Compatible Coverings for Masonry and Stucco*, “Limewash is vapour-permeable and allows a building to ‘breathe.’ Limewash is robust and, in the proper number of coats, may consolidate and improve the condition of the underlying substrate ... Limewash has always been, and remains, a most effective way to protect, maintain and beautify the surface of historically-significant structures.” (https://www.lime.org/documents/lime_basics/limewash.pdf). To access this article for free you need to google this; it is available for sale on the website). Limewash, which is highly alkaline, also resists fungal growth and insect damage.

Lastly, limewash has the added benefit of being easily removable if subsequent owners desire to revert to the original brick. Limewash coating can be removed with a pressure washer, or by hand, either with a bucket of water and a stiff nylon scrub brush. See, e.g. “All You Need to Know About Limewashed Brick”, <https://www.bobvila.com/articles/limewashed-brick/>.

Again, as illustrated by the attached photographs of the brick veneer on our house and the pervasive problems experienced over time due to moisture infiltration, we believe that the only historically appropriate solution is the application of a breathable limewash protective coating.

If we are approved, we plan to purchase the limewash from a producer who uses only the historically-accurate methodology of making limewash. Two of these Virginia Lime Works Company (virginialimeworks.com) and Charleston Limewash (limewash.com).

Requested Action

To summarize, we are requesting approval to apply limewash to the exterior brick surfaces of our house for the following reasons:

1. Stabilize the deteriorating brick: the brick surface is damaged and marred by previous poor repairs, efflorescence, and consistent and long-term moisture infiltration. Limewash would provide the necessary breathable but water-resistant surface needed to preserve the brick.
2. Aesthetic: although we have been engaged in a painstaking historic renovation, we are unable to properly restore the existing brick and it will remain an eyesore and detract from the historic beauty of the house relative to surrounding historic properties. We have broad support from our neighbors, and we plan to submit letters of support from all adjacent property owners.
3. Future owners could easily remove the limewash if they chose to do so.

APPROVED
Montgomery County
Historic Preservation Commission

Sandra L. Heiler

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Other Supporting Resources

<https://www.nps.gov/articles/limewash-an-old-practice-and-a-good-one.htm>

<https://www.ncptt.nps.gov/blog/the-other-white-paint/>

https://www.spab.org.uk/sites/default/files/Control_of_Dampness_0.pdf

<http://centennialpreservation.com/resources.php>

<http://centennialpreservation.com/docs/SPEWEIK-Limewash>Returns-2000.pdf>

<http://www.americanlimetechnology.com/ushg-old-world-european-finishes/>

https://www.lime.org/documents/lime_basics/limewash.pdf

<https://www.ncptt.nps.gov/blog/limewash-handmade-and-modern-brick/4/>



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