
LOCAL HISTORIC DISTRICT: Dilworth

PROPERTY ADDRESS: 1308 Lexington Avenue

SUMMARY OF REQUEST: Painting brick/masonry (Limewash)

APPLICANT: Ryan and Megan Burton

Details of Proposed Request

Existing Conditions

The existing structure is a brick 1.5 story Cottage style home constructed in 1950. The chimney has stone accents. The property is identified as a non-contributing structure in the Dilworth National Register (1987). Some areas on the house have mismatched brick or mortar from previous work.

Proposal

The proposal is a limewash application to the brick exterior. Limewashing is considered the same as painting and is a violation of the Secretary of Interior Standards according to the NC State Historic Preservation Office.

Policy & Design Guidelines, Page 30

1. The selection of paint colors is considered to be a matter of choice for property owners, and has no bearing on the preservation of structures. Therefore, the Historic District Commission does not regulate the choice of paint colors. HDC Staff can provide advice on historic color choices if a property owner desires.
2. Only traditionally painted materials, such as wood, should be painted.
3. Foundations must be visually differentiated from the main body of the structure.
4. The painting of unpainted brick or masonry will require a Certificate of Appropriateness. Painting brick or masonry is not considered a change of color, but a fundamental change in the character of a building. The painting of brick or other masonry will not be permitted except in such special circumstances as:
 - a. The repainting of buildings first painted prior to the establishment of the appropriate Local Historic District.
 - b. Cases where a brick building has poorly matched additions or repair work, and where the painting is designed to unify the disparate parts of the building.

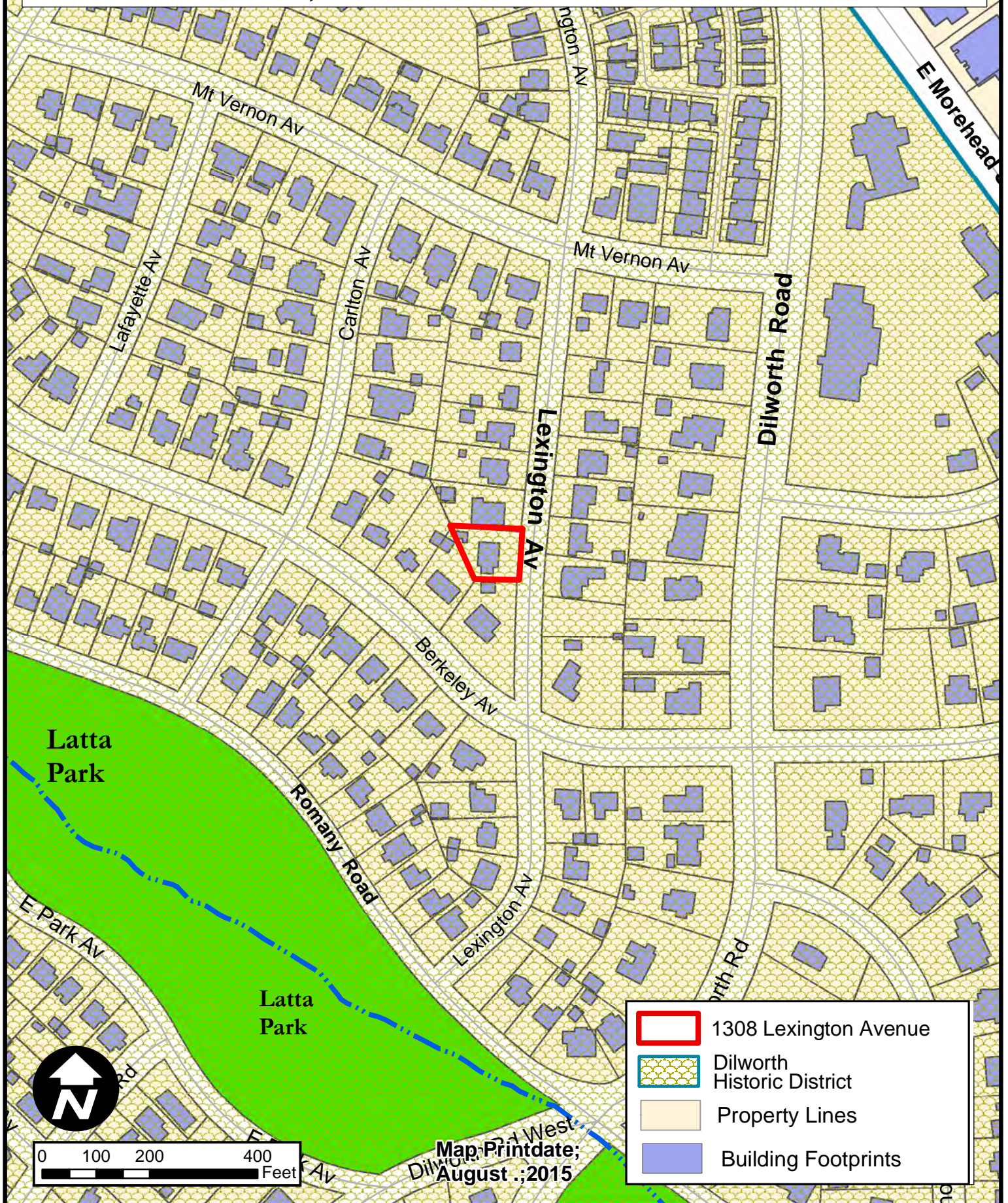
Staff

f Analysis

The HDC will determine if an exception should be granted for painting/limewashing brick based on item 4b above.

Charlotte Historic District Commission - Case 2015-153

Historic District; Dilworth



Charlotte Historic District Application

Certificate of Appropriateness for 1308 Lexington Avenue, Dilworth

Request

Obtain a Certificate of Appropriateness to apply a limewash on the home's brick veneer and the foundation of the detached garage at the back of the property. In addition to improving overall exterior aesthetics, we expect to achieve the following:

1. Unify a 1988 second-floor shed dormer addition with the original 1947 home.
2. Camouflage noticeable white paint drips and streaks that were the result of former careless paint jobs. (Previous attempts to remove the paint were unsuccessful.)
3. Minimize visibility of recent and upcoming mortar repairs.

Additional details on these goals are outlined on page 3.



Photo 1: Street view of the home.



Photo 2: Rear view, showing shed dormer addition.



Photo 3: Brick foundation on garage at rear of property.



Photo 4: Side view from back right corner of property.

Limewashed Brick Veneer

Limewash (a mixture of hydrated lime and water) would be applied with a brush to allow some of the color of the brick to show through. This will result in a breathable coating that lightens and softens the color of the brick, without requiring the maintenance of painted brick.

Limewash can be applied in a number of different ways to achieve different effects. It may be diluted to create a translucent wash over the brick, or can be applied to provide full coverage. Depending on how it is applied, the coverage can be even, or result in a splotchy look with more brick color showing through in some areas than others. We would seek to achieve an even and translucent coverage, as shown in the subsequent sample photos.

In preparation for applying the limewash, we would test application techniques and dilution percentages on sample bricks, or in an inconspicuous place on the back of the house or garage.

Example Photos of Limewash



Photo 5: Example of the translucent effect of limewash.



Photo 6: Close-up view of limewashed brick veneer.



Photo 7: Limewash being applied to a brick fence.



Photo 8: Limewash being applied to a house.

Additional Details

The home's architectural features – such as the radius-top front door and bay window – lend themselves to a cottage-style aesthetic. A limewashed veneer would soften and lighten the house, and improve its curb appeal and visibility in the shaded front yard. Moreover, the limewash would help unify the upstairs addition (visible from the rear and side yards), conceal unfortunate and numerous paint splatters and smears, and reduce the prominence of mortar repairs.

Addition Unification

A 1988 upstairs addition was achieved by a shed dormer that spans the back of the house. The shed dormer is clad in clapboard siding, and is partially visible from the street. Though well-executed to retain the scale and overall architectural style of the home, we would like the addition to be less noticeable, while retaining the white trim and siding.



Photo 9: The shed dormer spans the back of the house.



Photo 10: The addition is partially visible from the street.

Paint Camouflage

Unfortunately, previous paint jobs left white drops, splatters and spears of white paint all over the brick exterior. Attempts to remove the paint through gentle cleaning were unsuccessful. A professional hired to clean the brick in March 2015 advised that there are more stringent chemical methods that may be used to remove the paint, but he cautioned against them due to potential damage to the brick, mortar, or both. The following photographs illustrate the paint splatters and drips. While not visible from the street, the paint is noticeable as you approach the home – especially at the front and side entries.



Photo 11: Drips and splatters below eave.



Photo 12: More drips and splatters below eave.



Photo 13: Splatters and smears along foundation.



Photo 14: Smears and drips below painted siding.



Photo 15: Drip and splatter marks on front of house.



Photo 16: Smeared paint down the length of the front gutter.



Photo 17: Smears around former front porch rail.



Photo 18: Smears around side entry overhang.



Photo 19: Paint smears and drips at side entry.

Mortar Repair Disguise

We have made some mortar repairs that are noticeable, though not unsightly. However, additional repairs are needed on the front of the home, and they would be noticeable from the street. A limewash applied after the mortar repairs are made would minimize their visibility from the street.



Photo 20: Mortar repairs made at side entry.



Photo 21: More mortar repairs made at side entry.



Photo 22: Mortar repairs needed on front steps. They would be very visible from the street.



Photo 23: Close-up of mortar repairs needed at front steps.

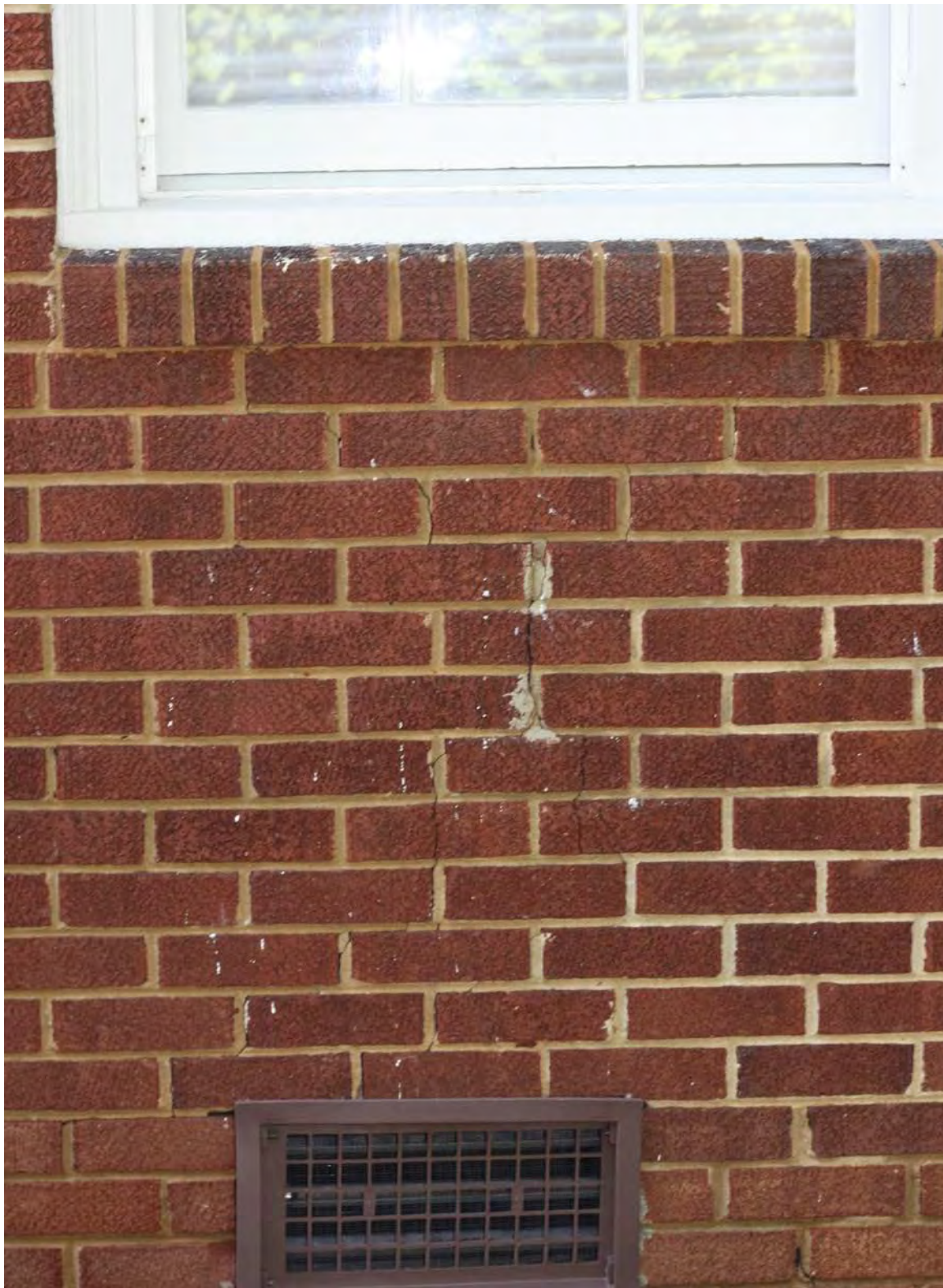
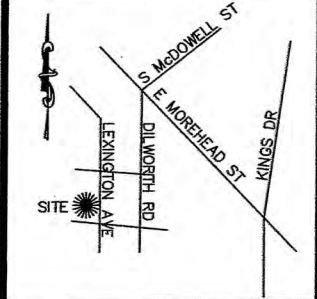


Photo 24: Mortar repairs needed at front of the house would be very visible from the street. Also shows paint splatters.

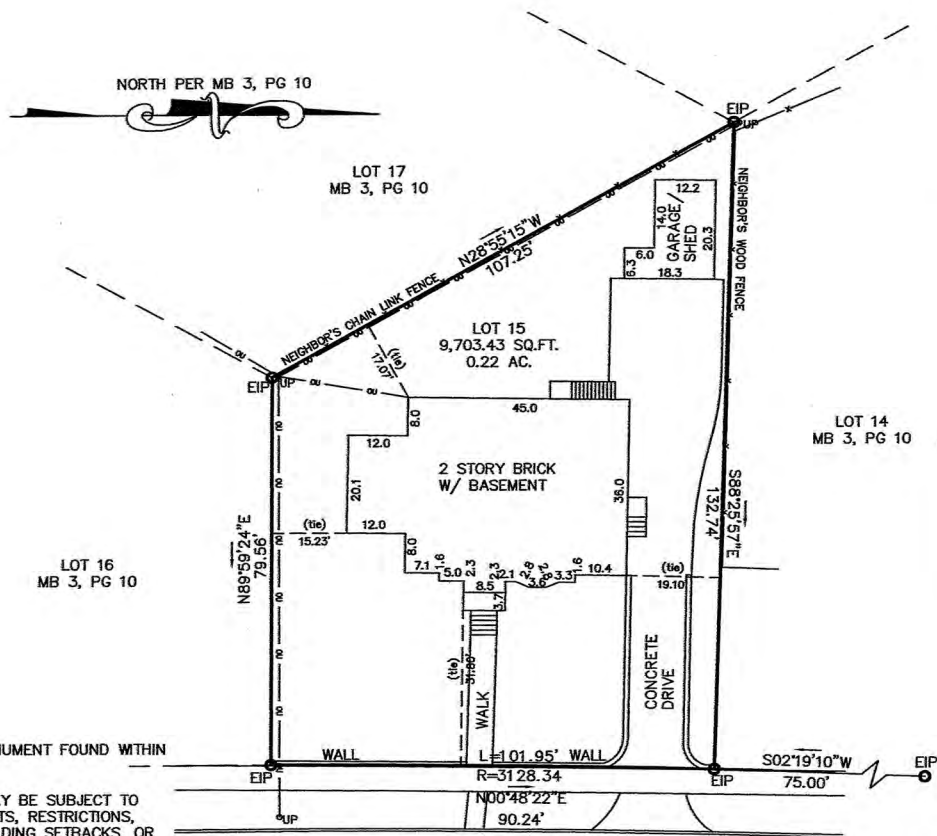


LOCATION MAP
NOT TO SCALE



I certify that this survey was completed under my direct supervision (as recorded in DB 5281, PG 255); the lines not surveyed were drawn from the deeds referenced on the adjoining lots; that the ratio of precision is 1:75758; and that this map meets the requirement of The Standards of Practice for Land Surveying in North Carolina (21 NCAC 56.1600).
This 7th day of May, 2014.

G. Kemp Miller
G. KEMP MILLER, PLS, CFS
7330 E. Lakeside Dr.
Charlotte, NC 28215
704-535-0287
704-577-6516



- NOTES:
1. NO NCGS MONUMENT FOUND WITHIN 2000'
 2. PROPERTY MAY BE SUBJECT TO OTHER COVENANTS, RESTRICTIONS, EASEMENTS, BUILDING SETBACKS, OR RIGHTS-OF-WAY THAT MAY BE DISCLOSED BY A FULL AND ACCURATE TITLE SEARCH.
 3. PROPERTY CURRENTLY ZONED: R-4
SETBACKS: FRONT = 30'
SIDE = 5'
REAR = 40'

HOUSE ENCLOSED INTO REAR SETBACK. HOWEVER, THE HOUSE WAS BUILT IN 1947 AND IS CONSIDERED A LEGAL NON-CONFORMING STRUCTURE.

4. EIP = EXISTING IRON PIPE
UP = UTILITY POLE
—o— = OVERHEAD UTILITY

5. THIS PROPERTY IS NOT IN A SPECIAL FLOOD HAZARD AREA PER FEMA PANEL 3710454300K, DATED 3/2/09.

PHYSICAL SURVEY OF LOT 15 of DILWORTH, BLOCK 27

PROPERTY OF RYAN and MEGAN BURTON

SCALE: 1"=30' CHARLOTTE, MECKLENBURG CO., NC
AS RECORDED IN: MB 3, PG 10

DATE: 5/7/2014
PID# 123-092-10

EXISTING CONDITIONS









Traditional European Limewash

Limewash is a **breathable material recommended for historic buildings**, friable masonry, and sustainable new design. It is considered suitable for historic brick, stone, plaster, and stucco because it protects fragile or damaged masonry from further weathering.¹

*"Limewash has always been, and remains, a most effective way to protect, maintain and beautify the surface of historically-significant structures."*²

Exterior elements cause limewash to erode over time (to an extent, it can be removed with water and brushing). It may be renewed by applying one or two thin coats every 5-10 years.³

Benefits of Limewash

- Used for 10,000 years as a method to sterilize and protect building walls from the elements.⁴
- Vapor permeable and breathable; moisture doesn't get trapped behind the limewash, so it won't bubble, peel, or deteriorate the masonry.⁵
 - Limewash has a vapor permeability rating of 350 units, while most masonry paints are below a rating of 75 units.⁶
- Can be applied to achieve a translucent coverage (see photo supplied by the US Heritage Group).
- Gradually erodes to develop a charming, uneven patina.



What is Limewash?

"Limewash is a mixture of slaked lime putty (calcium hydroxide) in water that sets slowly by absorbing carbon dioxide from the air. The chemical reaction that occurs produces crystals of calcite. These crystals are unusual because they have a double reflective index: light entering each crystal is reflected back in duplicate. This results in the wonderful surface glow that is characteristic of limewashed surfaces and is not found in modern look alike paint products or imitation coatings."⁷

¹ US Heritage Group. "Limewash." June 3, 2013. Web. July 23, 2015. <<http://usheritage.com/limewash/>>.

² Peter Mold and Richard Godbey. "Limewash: Compatible Coverings For Masonry And Stucco." NLA Building Lime Group. March 11, 2005. <https://lime.org/documents/lime_basics/limewash.pdf>

³ Minerva Stone Conservation. "All You Need to Know About Limewash." Publication date unknown. Web. July 23, 2015. <<http://www.minervaconservation.com/articles/limewash.html>>

⁴ R.H. Bennett, MBE and John Speweik, CSI. "Limewash Returns." Clem Labine's Period Homes Magazine. Summer 2000. <<http://centennialpreservation.com/docs/SPEWEIK-Limewash>Returns-2000.pdf>>

⁵ P. Allen Smith Garden Home. "Limewashing the Gate Houses." Publication date unknown. Web. July 23, 2015. <<http://www.pallensmith.com/articles/limewashing-the-gate-houses>>

⁶ R.H. Bennett, MBE and John Speweik, CSI. "Limewash Returns."

⁷ R.H. Bennett, MBE and John Speweik, CSI. "Limewash Returns."

Limewash Returns

R.H. Bennett, MBE and John Speweik, CSI



It's very popular now to restore old houses and to build new homes that look like they have been there for a 100 years or more. One of the decorative finishes that gives this centuries-old look is the use of a traditional European lime wash. Many paint manufactures have come up with look alike versions of the traditional material, but nothing replaces the real thing-- not only for its appearance but also for the health of the home.

While the romantic magic of limewashed homes amazes many of its admirers today, limewash has long been a common method of protecting walls and has been used for at least ten thousand years. Limewash is essentially a mixture of slaked lime putty (calcium hydroxide) in water that sets slowly by absorbing carbon dioxide from the air.

The chemical reaction that occurs produces crystals of calcite. These crystals are unusual because they have a double reflective index: light entering each crystal is reflected back in

duplicate. This results in the wonderful surface glow that is characteristic of limewashed surfaces and is not found in modern look alike paint products or imitation coatings.

Limewash was the early predecessor to modern paint products. But in its true application and effect on a wall it really acts more like an absorptive stain and it has different characteristics than modern paints. Limewash is not a coating that lays on the surface of the wall, but rather it penetrates into the surface of brick, stone and wood to create a peel-free surface. After it hardens limewash remains vapor permeable and will not trap moisture in the wall.

One of the attractive things about this traditional material is that it gradually wears off the surface of the wall and leaves a very pleasant uneven aged look. Many architects and designers seek this look but they have had challenges creating it for their clients because they have been using the wrong products, such as paint, to achieve the effect.

If it is a traditional look you want it may simply be best to go back to the traditional materials that have been delivering the real thing for thousands of years. Limewash develops a unique patina that is unrivaled by other coatings, and it is a traditional shelter coat, which gives protection, beauty and durability to stucco, stonework, plasterwork and brickwork.

When limewash was discovered man was not looking for a decorative finish to impress his neighbors. He had actually discovered a sacrificial treatment that protected his home against the worst weather. Early mud structures and adobe and wattle and daub walls were very vulnerable to climate, and limewash helped to protect these surfaces from rapid deterioration.

The Spring Traditions

In Europe, the tradition in the spring was to cut back the hedges and limewash the house. Usually white, the material would be mixed up into a creamy consistency and applied with longhaired horse brushes over the entire house. The material would be very translucent and very thin, and it was worked into the surface by rubbing in circular strokes. Year after year this tradition was practiced until the very thin layers of limewash would become a thick protective finish with the ability to breathe.



In America very few authentic limewash homes exist today. Many have been since painted with white paints or some formulation of white Portland cement and sand coating. The evidence of this change in materials has become increasingly apparent, as many older homes have begun to show signs of rapid deterioration due to trapped moisture in the walls. Prior to the development of modern paints and Portland cement most homes were constructed of solid, porous materials, which keep the moisture out, by their sheer thickness and the high porosity or vapor permeability. This means the walls had the ability to dry out faster than the moisture could penetrate the thickness of the wall.

The use of open fires and in particular the kitchen fire, which remained alight throughout the year, aided rapid drying while providing both heating and ventilation. Some idea of the ventilation this provides can be gained by watching the speed at which the smoke pours out of the chimney, as air is drawn into the home at exactly the same rate. This ventilation ensured that any moisture present in the home was expelled through the chimney in a very short time.

A traditional limewash finish maintains the ability of a home to breathe, as it is one of the most permeable decorative finishes known. Tests show that limewash has a vapor permeability rating of 350 units, while many masonry paints are well below a rating of 75 units. If walls can't breathe, then, water can become trapped, which often leads to rapid deterioration. Peeling or blistering paint is often the most visible sign of trapped moisture, and this happens when the highest concentration of moisture forces through the paint--taking the modern paint off with it.

The Material Used

As late as World War II limewash was still being used in the United States. Limewash is made by burning limestone, which produces a quicklime that is then mixed with water to form lime putty. The lime putty is mixed with water and other ingredients to produce a limewash. The use of limewash started to decline when the use of modern paints and acrylic coatings became popular.

Tallow was often added to limewash to make it water droplet resistant while retaining most of its qualities of water permeability. A type of animal fat tallow was primarily used with beeswax for candle making and therefore widely available in the 19th century. The butcher, the baker, and the candlestick maker--as the nursery rhyme suggests--was a source for tallow. More recently raw linseed oil has been added for the same purpose.



Other alternatives used today include casein, which resists dusting and can be used as an adhesive for difficult surfaces that may not absorb the limewash as readily as brick or wood.

Lime also helps prevent the spread of disease, which is why farmers would regularly limewash pen walls between livestock.

For colored limewash care should be taken in selecting pigments to make sure they are not affected by ultra violet light or have a reaction with the lime. Earth pigments are recommended because they are least likely to fade in the sunlight or by a chemical reaction with the lime. Colors need to be dry tested to ensure the correct hue has been achieved.

A mock up sample should be included as part of the decision process on any project. The material will dry many shades lighter than what appears in the wet container. A limewash may take several days to show its final color as it cures.

Application

When applying limewash, safety goggles and gloves should always be worn because lime is irritating to the skin and eyes. Limewash is a water-based product and is most suitable for application onto an absorbent background. Traditionally it was applied to earth walls, brick, plasterwork, stucco, wood and stone. Concrete also takes limewash well because it is absorbent.

Limewash should not be applied over existing painted surfaces or drywall. Old paint should be removed, and if a paint stripper is used make sure that the pH of the surface has not been radically changed.

If an acid based stripper is used it may leave the surface of the wall with an acidic residue and the limewash will fail to adhere. All surfaces should be washed down with clean cold water and left until the surface is damp but not dripping wet. The best results are achieved by working the limewash into the surface of the wall by almost scrubbing it in with a brush stiffer than a paint brush but softer than a scrubbing brush. The application should be in a circular motion working it into the surface and spreading as far as possible. The work should be finished with vertical strokes.

Limewash cures by absorbing carbon dioxide from the air. If high humidity and low temperature persist during application this may prevent the material from curing and delay the carbonation process. Successive coats may be applied and are recommended after 6 hours drying between applications. Lightly dampen the surface before applying the next coat. Care must also be taken to make sure the limewash does not dry out too quickly from direct sunlight. A slow wet moist cure is ideal which means the applicators may need to apply the material during the late afternoon or evening hours.

Limewash must be applied as thinly as possible to facilitate this carbonation process and to prevent crazing and cracking. The best materials to use in restoring and preserving historic buildings are the original materials themselves. Limewash is now commercially available again and is available in a ready-to-use form. Limewash provides years of beauty, protection, and an authentic look--because it is authentic.

About the authors:

R.H. Bennett, MBE is the director of The Lime Centre in Winchester, Hampshire, England. He recently custom produced a traditional limewash for the royal family to restore Windsor Castle. Mr. Bennett works as an international historic masonry consultant and is best known for his work on the Statue of Liberty and Stonehenge. You may contact Mr. R.H. Bennett at: www.thelimecentre.co.uk

John Speweik, CSI is the director of education and a historic masonry instructor at the U.S. Heritage Group Training Center based in Chicago. Mr. Speweik is a fifth generation mason and author. He works to share his experience and knowledge of traditional limewash with the general public in hands-on training workshops held throughout the year. You may contact Mr. Speweik for a workshop schedule at: www.usheritage.com

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