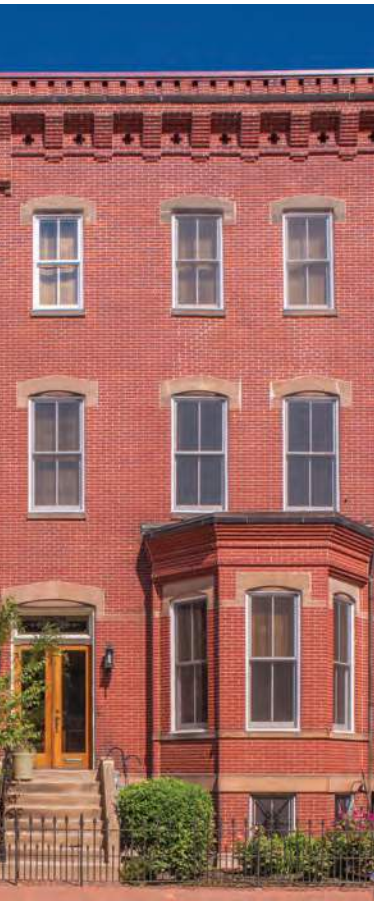
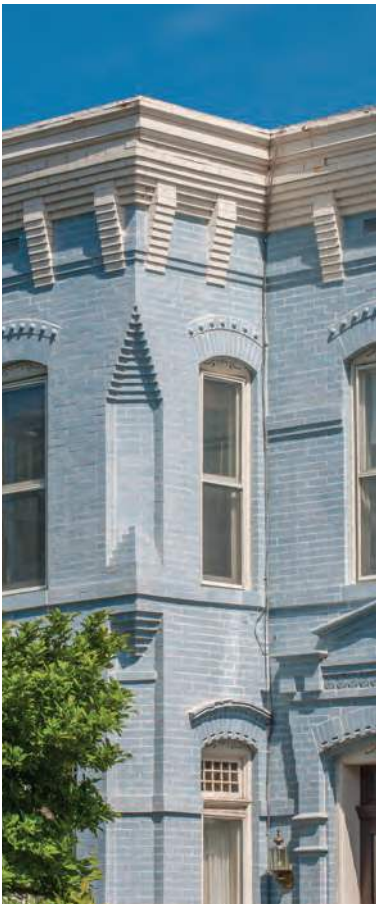
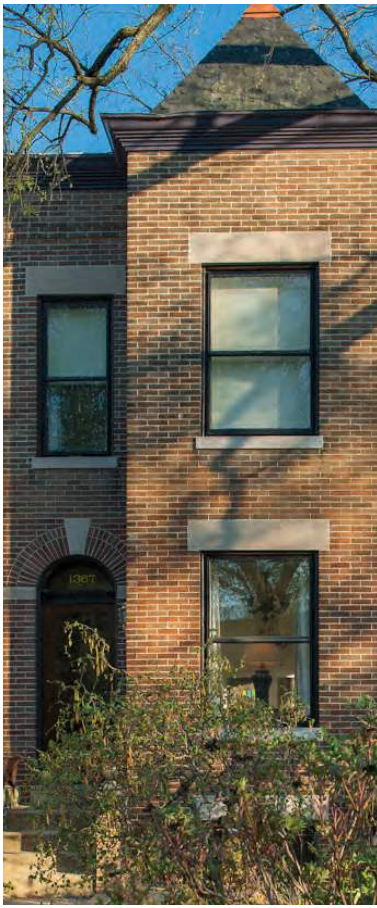
RENAISSANCE
DEVELOPMENT

Specialists in Exterior Masonry & Historic Preservation







Tuckpointing

GENERAL INFORMATION

Tuckpointing

Most of the brick buildings in Washington, DC's historic neighborhoods show indications that they need tuckpointing. Their masonry joints contain powdery mortar that crumbles to the touch and is easily extracted with a key or pencil. These joints, which appear dark or shadowed, are recessed from the brick faces, allowing moisture to penetrate the walls. Eventually, brick courses will sag and buckle, indicating significant structural failure that will worsen exponentially over time.

TYPICAL BRICK FACADES
IN WASHINGTON, DC

Recommended Tuckpointing Practices

- Historic structures should be tuckpointed in their entirety, not in sections. Tuckpointing of all exterior walls, regardless of their appearance or condition, will ensure that every issue—including gaps in mortar, harmful cement repairs, and failing/uneven brick courses—are addressed and rectified

- Scaffolding should be erected to ensure that craftsmen can access the entire building. Ladders are inadequate and potentially dangerous, as they cannot accommodate workers, tools, and the materials required to complete the work properly

- Tuckpointing work should be completed by a highly skilled crew of trained masons. Even a modest DC row house requires a minimum crew of three workmen, since this work must be carefully organized and executed from both on scaffolding and on the ground

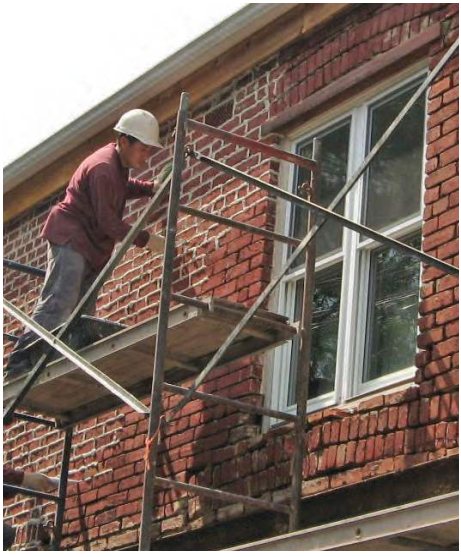
- All mortar joints—whether untouched or filled with cement—must be scraped out to a minimum depth of ½ inch. Some joints will need to be opened to a depth of as many as three inches to ensure that the new mortar bonds properly with the existing mortar deep inside the wall

- Lime mortar consistent in molecular content and density to the original mortar should be used to tuckpoint historic buildings. Many contractors and some historic preservation agencies advocate the use of Type N or Type O mortar. These mixes consist mostly of lime, are inexpensive, and readily available. They do, however, contain a small percentage of cement. While it is generally assumed that cement in limited quantities will not harm a historic structure, this is highly debatable. Lime mortar containing no cement is by far the best option for tuckpointing historic structures

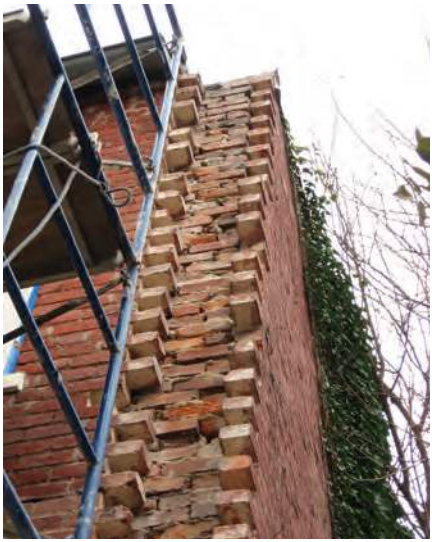
- Tuckpointed mortar joints should be struck with a tool creating a slight concave recess in the joint to prevent water penetration and staining on the brick wall

- Newly tuckpointed walls should be thoroughly cleaned with a diluted acid solution or a specially formulated masonry cleaner to remove dirt, staining, and any residual mortar left on the brick faces during restoration work

- When completed properly, a tuckpointing project will ensure a historic building's structural integrity for decades to come



What is Tuckpointing?



PARTIALLY DEMOLISHED LOAD BEARING BRICK WALLS

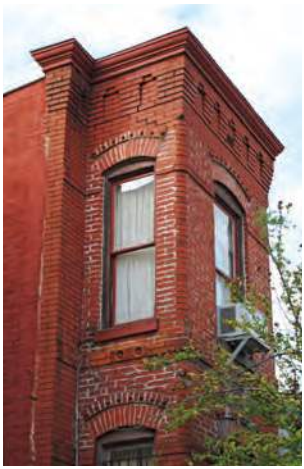
Tuckpointing—or repointing—describes the restoration and preservation of brick buildings by removing the deteriorated mortar between masonry joints and replacing it with lime-based mortar. If done correctly, tuckpointing will ensure the structural integrity, longevity, and value of historic masonry buildings.

Brick structures in Washington, DC built from the 1700s until the 1920s have load bearing walls consisting only of bricks and mortar. They generally contain no iron, steel, or any other reinforcing structural support. These load bearing buildings—meaning that their own weight provides structural integrity—were built of coal-fired clay bricks assembled with lime-based mortar.

Limestone, a material used in construction for centuries, is burned in a kiln into a smoldering powder [much like lighted charcoal briquettes]. This substance, combined with sand, crushed shells, horse hair, and other natural materials produces mortar. The resulting "hot mix" was placed below, on top of, and between bricks to form buildings large and small.

This time-honored construction technique vanished after World War II. During the war, builders used cement—an industrially-produced material patented around 1900—to construct structures quickly and inexpensively. By the late 1940s, this building method was directed toward creating new houses, commercial buildings, and highways.

Risks with Improper Tuckpointing Methods



SPOT TUCKPOINTING
USING CEMENT

Although cement—the key ingredient in concrete—fueled America's booming postwar economy, revolutionized the building industry, and is common in new construction, its use on historic buildings is both inappropriate and detrimental. If a pre-World War II brick building is tuckpointed with cement, that material's extreme density [its level of hardness] will cause the softer coal-fired bricks to crack.

In addition, the acidic chemicals in cement are incompatible with both the molecular structure of both historic bricks and lime-based mortar. Removing cement from old brick joints reveals severely compromised lime mortar underneath, which is always in worse condition than if the joint had never been improperly repaired.

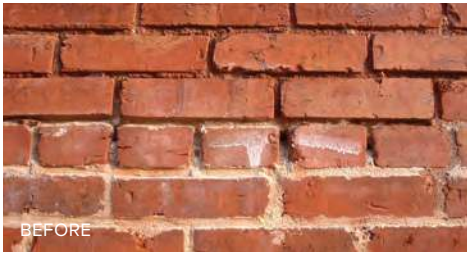
Some consider "spot tuckpointing"— filling holes with cement only where damage is most apparent—a reasonable repair, especially because it is quick and inexpensive. Although this practice is visible all over Washington, spot tuckpointing is merely a stopgap approach that can neither stabilize a building nor halt its deterioration.

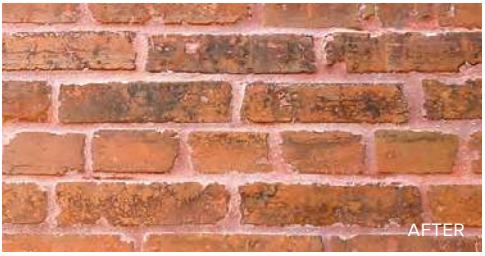
If a historic building is not tuckpointed properly, it will show signs of structural damage and water penetration. These problems are most readily apparent around door and window openings, but can occur anywhere on a brick façade.

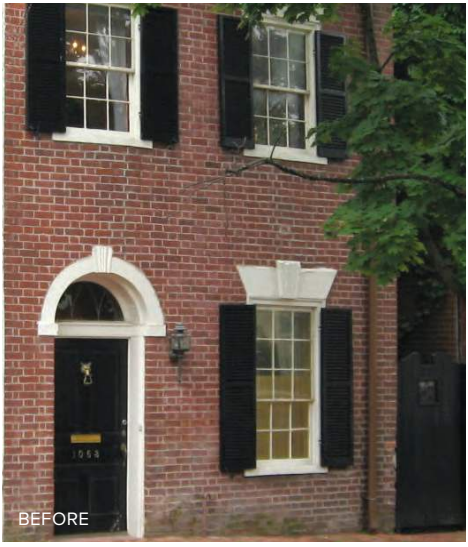
Mortar failure is easily recognizable at a building's ground level. After running down the walls from the roofline, precipitation stains the brick walls [often with black or green mold] and penetrates the mortar joints.

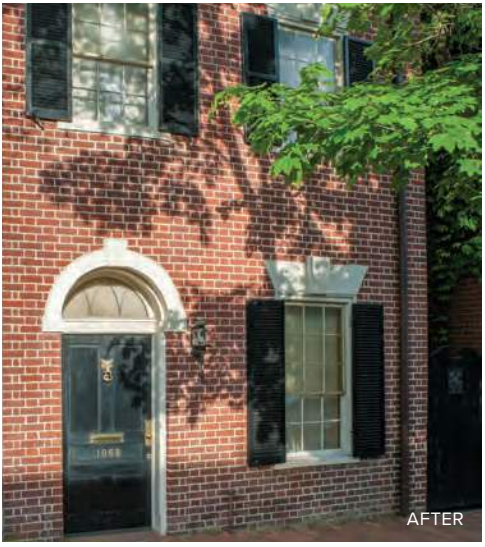
The obvious signs of mortar deterioration—particularly at eye level—are not isolated, but rather indicative of the building's overall condition. Regardless of the wall's exact location [at ground level or three stories up], water inevitably penetrates all the building's brick joints and damages the mortar.

Since cement repairs deteriorate lime mortar, the resulting gap between the cement and lime also allows water to work its way into the wall. Evidence of water damage on interior walls, however, does not necessarily correspond to the same location on the building's exterior.

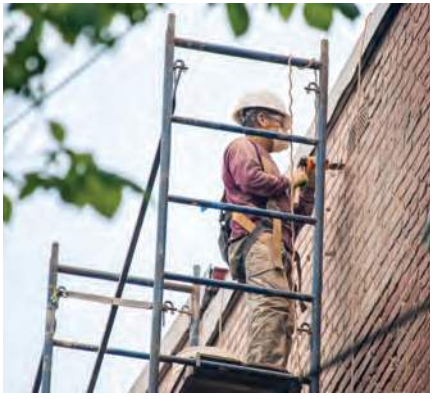


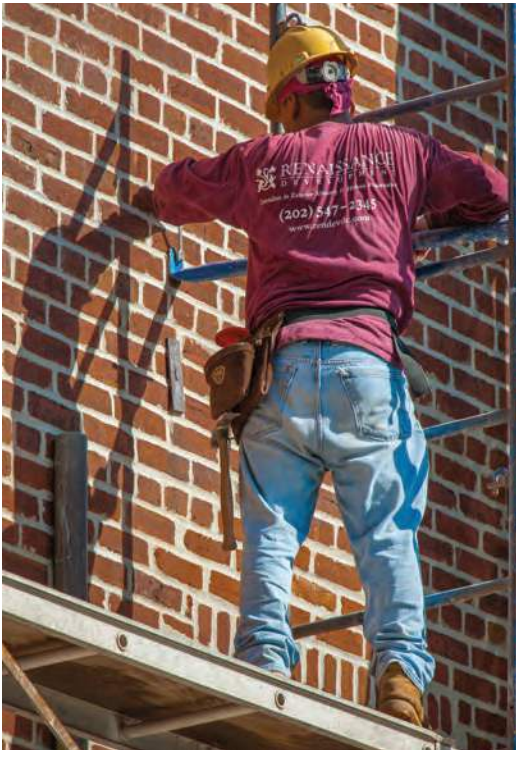






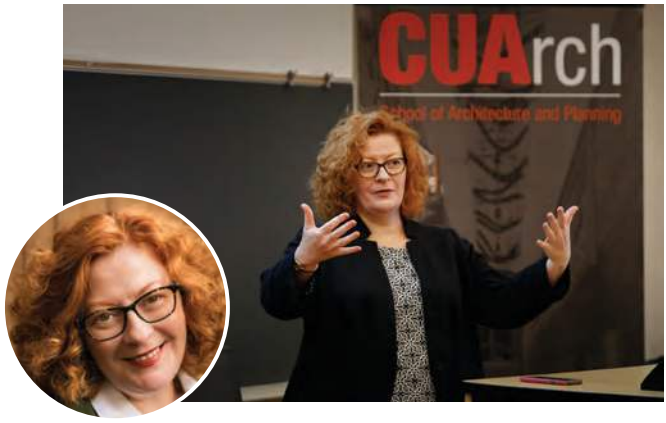
TUCKPOINTING PROJECTS COMPLETED BY RENAISSANCE DEVELOPMENT.





COMPANY CRAFTSMEN AT WORK ON MASONRY RESTORATION PROJECTS

Renaissance Development Inc. is a Washington, DC-based company that specializes in tuckpointing: the restoration of historic brick buildings using traditional methods and materials. The company also produces exterior masonry work including patios, walkways, retaining walls, steps, and driveways using brick, stone, and concrete. During the past two decades, Renaissance Development has completed hundreds of projects in the District of Columbia and Old Town Alexandria, Virginia.



Dr. Christina K. Wilson, founder and president of Renaissance Development, holds a doctorate in architectural history from the University of Virginia. After a distinguished career working in museums and adult education, Dr. Wilson founded Renaissance Development in 2004. In addition to her duties as CEO, Dr. Wilson teaches architectural history and theory at The Catholic University of America.

Dr. Wilson's extensive knowledge of historic buildings, combined with the meticulous efforts of the company's highly trained artisans, has made Renaissance Development the Washington Metropolitan Region's preeminent company in exterior masonry restoration.

RENAISSANCE
DEVELOPMENT

Restoration • Rejuvenation • Rebirth

Contact us today for a free estimate!

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www.rendevdc.com