



## Identification of Dorchester Buff sandstone for historic restoration

935 Broadway, New York City

(5/12/2020) Fabricator's Secret was asked to identify the source of sandstone for repair & replacement of the façade at 935 Broadway (see photos of building on this page). By this report, we confirm that we located the original stone, and it is still available for cut to size projects.

Here below is our research, along with photos of samples comparing them to the original pieces taken from the building.

The initial inspection of the stone revealed that the species of sandstone was not readily apparent. Therefore, we had to research the source.

### **Research approach;**

The primary assumption was that the sandstone came from some part of North America close enough for the waterborne transportation common in the 19<sup>th</sup> Century.



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Therefore, that would include quarries along the Erie Canal/Great Lakes region, or anywhere along the Eastern Seaboard. Current suppliers and other experts were contacted from the Midwest (Berea formation that goes from Michigan, Ohio, Pennsylvania, West Virginia, and Kentucky), the Medina deposits (Western New York), plus various now extinct quarries in Maryland/Virginia area, as well as open and closed quarries in Atlantic Canada (New Brunswick and Nova Scotia).

The results were all negative except those in New Brunswick, Canada. With that one exception, all the other sandstones were either too light (white/light beige), too dark (chocolate brown sometimes with reddish tinge) or too heavily veined.

Simultaneously, we reviewed other historic buildings in New York from the same time period, and found that the great staircase in the Bethesda Terrace in Central Park was also a sandstone from New Brunswick. A quick visit to Central Park confirmed the similarity between our façade pieces and the Bethesda balustrade and cheekwalls. See photos (Figure 3.0 and 4.0) documenting the sample from 935 Broadway shown next to the posts, balusters, and rails in Central Park, in Appendix II.

Thankfully, for all New Yorkers, but especially this research project, we could turn to the Conservancy that manages Central Park. The Central Park Conservancy was founded in 1980 in the aftermath of Central Park's decline in the 1960s and 1970s. Since their founding, they have completed more than \$800 million toward the restoration and enhancement of the park, returning it to its previous glory. This meant, they had already done the research into our mystery sandstone.

While two field contacts in Nova Scotia put us onto several sources in New Brunswick, it was Matt Reiley, the Manager of Conservation for the Central Park Conservancy, who helped us narrow it down to one single source. Matt put us onto **Atlantic Stone** in New Brunswick, where Central Park had obtained replacement material for their own improvements. After Fabricator's Secret reviewed samples from more than one quarry in New Brunswick, the **Dorchester Buff** from Atlantic Stone did, in fact, prove to be the perfect match.

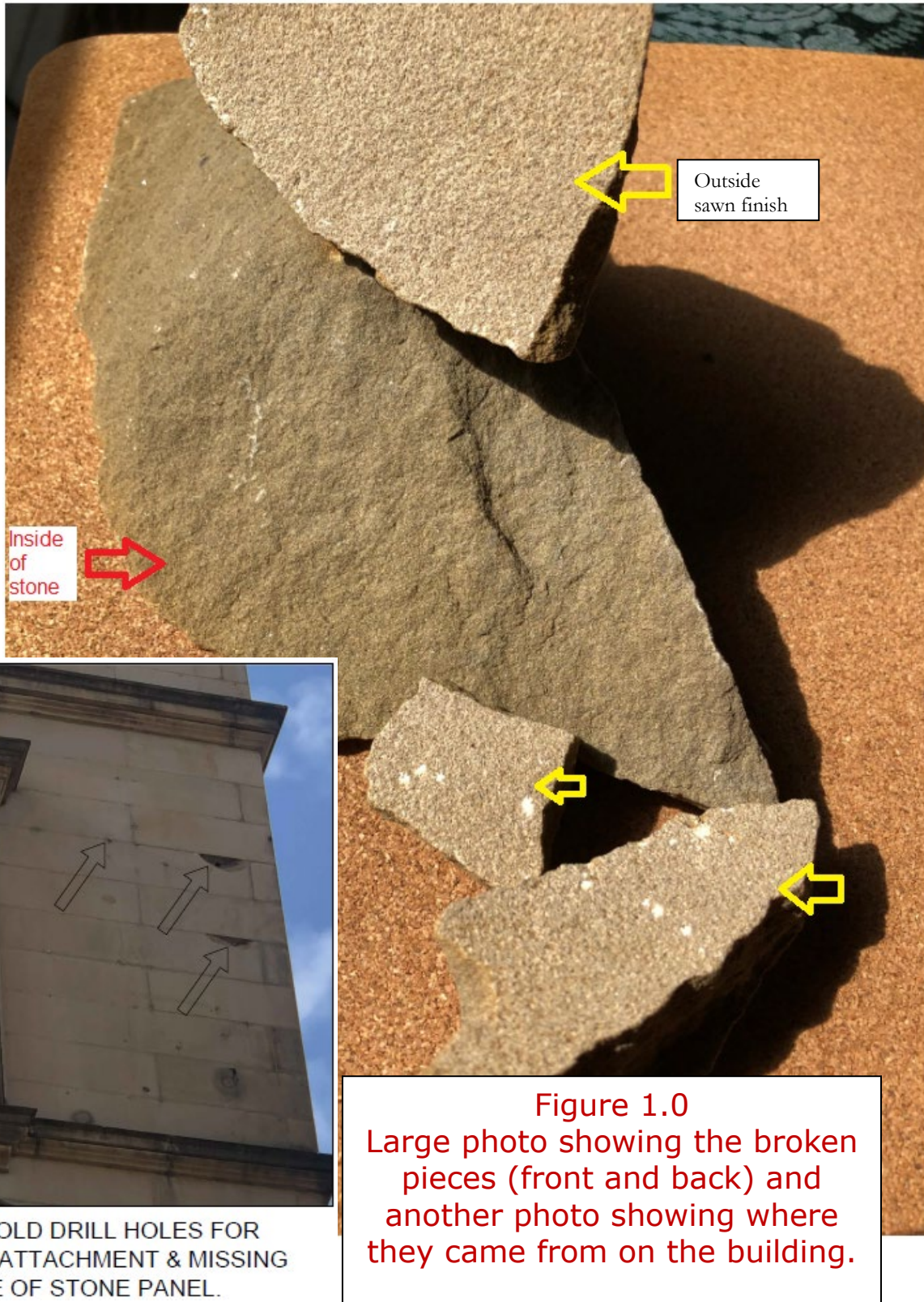
Atlantic Stone purchased the quarries of the **Dorchester Freestone Company** several decades ago. It is this Dorchester material which is on both our building on 935 Broadway and in Central Park around the Bethesda Terrace.

Evidence to support this statement include timing, and corroborating research;

- 1) The Dorchester Freestone Company was initially formed in 1859, two years before our building was built. It was formed by several Wall Street investors for use in construction of buildings in New York City. Historic records show this material being regularly shipped to Manhattan for construction purposes.

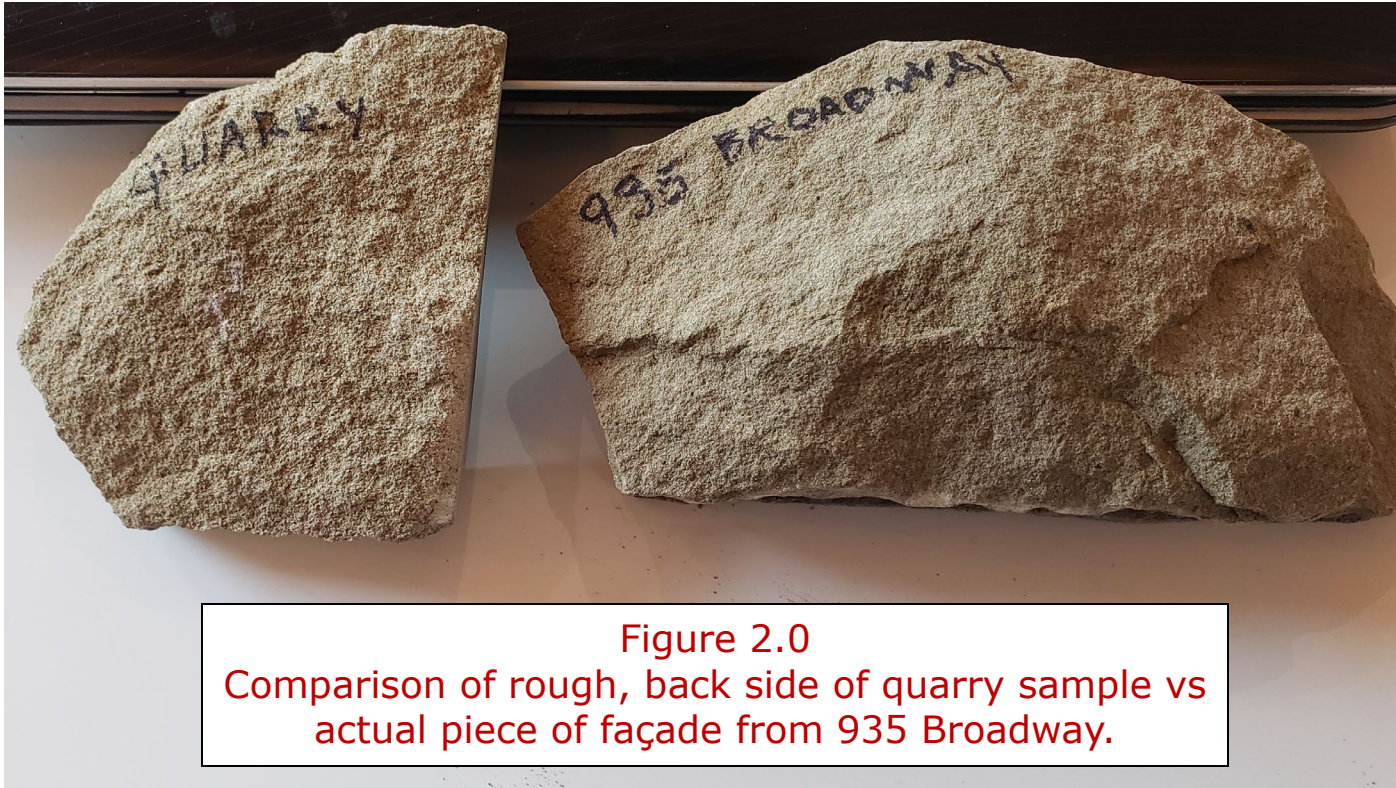


- 2) This species is also confirmed in a thesis in historic preservation, written by Christopher Gembinski at the University of Pennsylvania (see Appendix I). His research confirmed the stone at Bethesda Terrace is from Dorchester Freestone. Gembinski is now the Director of Technical Services at Building Conservation Associates, Inc (BCA).



P16: OLD DRILL HOLES FOR  
SIGN ATTACHMENT & MISSING  
PIECE OF STONE PANEL.





**Figure 2.0**  
**Comparison of rough, back side of quarry sample vs actual piece of façade from 935 Broadway.**

Fred Pellerin, the owner of Atlantic Stone, has confirmed that there are several levels to the quarry (sandstone forms as sedimentary deposits) and the colors range from a mocha at the top layer to buff to olive drab at the bottom. We sent Fred a sample (see Figure 2.0, right piece) of stone from the façade of 935 Broadway, and Fred replied in an email on May 5<sup>th</sup>, “I was in the quarry again on Saturday and identified several locations where strata stone matched very closely to that of your specimen, which is good news. Again, volume will not be a problem.”

**Weathered appearance:**

Please note, the brownish tone of the back of the stone in Figure 2.0 is not the sand colored appearance on the face. Figure 1.0 contains some bits of stone that have fallen from the building, showing both front and back. From those photos, you can see the background color and the outside finish have a different appearance in color and texture. This is due to weathering on the face and the particular structure of sandstone.

Fred explains the following;

- 1) The finish he says that is closest to ours is the modern sawn cut finish (see Figure 5.0 in appendix - sample available upon request). When you saw cut the sandstone, you slice many of the silicate particles (the sand) on the edge, making them more prominent and a higher percentage of the face’s surface.

You also dislodge some brownish material between the silicate, making the face appear even lighter and closer to the color of sand.

- 2) He goes on to explain that the continued weathering of our stone happened over time as more and more cementitious material in between the silica bits (the sand) washed out. This happened through abrasion via a number of assaults (pollution, particulate material the air, weather and freeze thaw cycles). Once that in-between material washed away, all that's left is the silica – hence the current sand color surface of our building. He says, since the silicate particles in his sandstone is the same at all levels, each level will look the same on the surface over time.
- 3) Gembinski, in his thesis, also confirms the finish was “sawn & rubbed”. Fred Pellerin of Atlantic Stone explains that sometimes a sawn finish leaves slight, circular markings from the blades and a slight buffing or “rubbing” is used to make them go away.

**Conclusion:**

Our assessment is that we have found the source for the original sandstone at 935 Broadway, and that it is still available. We have also identified the finish. A sample in our office is available for review. We stand ready to provide cut to size pieces in this stone, when construction reopens in our fair city.

Sincerely,



Christopher L. Johnson  
President  
Fabricator's Secret Inc.

Appendix I

Thesis (Historic Preservation), Graduate Program in Historic Preservation  
1998

Bethesda Terrace: Conditions Assessment and Evaluation of Previous Stone  
Conservation Treatments

Christopher John Gembinski  
University of Pennsylvania

[https://repository.upenn.edu/cgi/viewcontent.cgi?article=1471&context=hp\\_theses](https://repository.upenn.edu/cgi/viewcontent.cgi?article=1471&context=hp_theses)



## Appendix II



Figure 3.0 – left  
Comparison of sample from 935  
Broadway versus sandstone at  
Bethesda Terrace.

Figure 4.0 – below  
Comparison of uncut back of  
sample from 935 Broadway  
versus exposed interior of stone  
at Bethesda Terrace.





**Figure 5.0**  
**Surface comparison of new Dorchester Buff (sawn finish) vs actual piece of façade from 935 Broadway.**

