

APPENDIX B
Letter Report
Coating Identification Dorchester Wall

Letter of Report

To: James Maddigan
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Ottawa, ON K1S 1X2
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From: Jennifer Pont
Jablonski Building Conservation, Inc.
40 West 27th Street, 12th Floor
New York, NY 10001
Tel.: 212.532.5557 x.12
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Email: jpont@jbconservation.com

Date: July 12, 2017

Re: Coating Identification
Dorchester Wall

Jablonski Building Conservation, Inc. (JBC) was retained by the client to examine a coating on a concrete cap. A piece of the cap was sent to JBC for analysis. The goal of this analysis was to identify the type of coating. The sample was removed by the client.

Methodology

Upon receipt of the sample, Architectural conservator Jennifer Pont of JBC analyzed the sample under magnification with ultraviolet light to determine the number of finish layers present and get a general idea of the composition of the coatings. The samples were examined microscopically using a Motic Stereo Zoom microscope with 10X - 63X magnification and a Zeiss Axioskop 40 polarizing light microscope with ultraviolet illuminator.

Following microscopic analysis, a 2" x 4" section of the sample was removed and sent out for infrared spectroscopic analysis to further identify the binder and fillers in the coating.

Overview

The sample received by JBC consisted of a large piece of concrete with between one and two white finish layers. These coatings were similar in composition, likely an oil-acrylic blend and were likely part of the same finish campaign, as there was no dirt layer between the two layers. Both layers contained aggregate resulting in the stucco-like appearance of the sample.

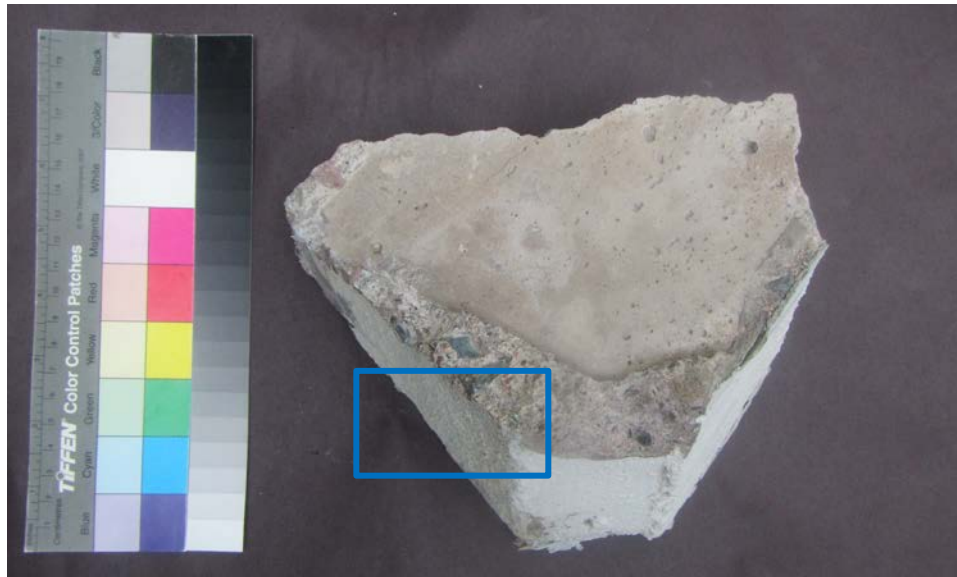


Figure 1. Sample received by JBC. Blue box denotes area sent for analysis

Infrared Spectroscopic Analysis

A 2" x 4" section of the coated concrete was removed from the main sample and sent to KTA-Tator, Inc. for infrared spectroscopic analysis to identify the binder of the coating and fillers or pigments were possible. Their analysis is attached as a supplement to this report.

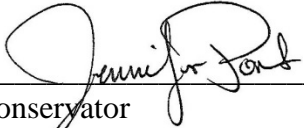
The binder was identified as an acrylic binder, which was consistent with the UV observations made by JBC. The stretch of peaks from $492\text{-}796\text{ cm}^{-1}$ and the doublet around 3000 cm^{-1} both indicate the presence of carbon-carbon and carbon-hydrogen bonds found in oil paints. However, the definition of the peaks at lower wavenumbers suggest that any oil-based additive used was highly refined, something seen in more modern oil-acrylic paints used on hardy exterior surfaces such as concrete.

Common fillers including a carbonate material (likely calcium carbonate) and crystalline silica (likely glass balloons) were also identified. These materials are added to paint to increase the hiding power and lower the sheen or gloss of the coating. The pigment used was titanium dioxide. Each of these is consistent with a modern acrylic coating.

Recommendations

Should the client wish to remove the coating, paint stripping tests should be conducted with a variety of commercial products. Due to the texture of the concrete and the coating, a long-dwell solvent-based stripper will likely be the most effective.

Sincerely,

Jennifer Pont 
Architectural Conservator
Jablonski Building Conservation, Inc.



July 6, 2017

Via Email: mjablonski@jbconservation.com

Ms. Mary Jablonski
Owner
Jablonski Building Conservation, Inc.
40 West 27th Street, Floor 12
New York, NY 10001

SUBJECT: **Results of Infrared Spectroscopic Analysis of Concrete Coating;
KTA Project No. 370472**

Dear Ms. Jablonski:

In accordance with KTA-Tator, Inc. (KTA) Proposal PN177907 and the subsequent signed Authorization to Proceed dated June 23, 2017, KTA has completed the infrared spectroscopic analysis on the submitted concrete coating. This report contains descriptions of the testing procedures employed and the results of the testing.

SAMPLES

An unlabeled 2" x 4" section of coated concrete was received from Jablonski Building Conservation, Inc. on June 29, 2017 and designated as Sample KTA-1. It should be noted that at no time did KTA personnel witness the acquisition of the samples listed below.

INFRARED SPECTROSCOPY

Infrared spectroscopic analysis was performed with a Mattson Galaxy Model 3020 Fourier transform infrared spectrometer. Sample scrapings of the coating material were combined with potassium bromide powder and formed into a pellet under high pressure. The pellet was then placed in the optical path of the spectrometer and a spectrum was obtained over the range of 4000 to 400 cm^{-1} (appended).

Briefly, the analysis revealed that the KBr pellet obtained of the white topcoat of Sample KTA-1 was most consistent with an acrylic resin as evidenced by the spectral bands at 1731 and 1164 cm^{-1} along with the shoulder near 1240 cm^{-1} . The presence of carbonate material was evidenced by the bands at 1450 and 875 cm^{-1} . Crystalline silica was evidenced by the band at 1085 cm^{-1} along with the doublet at 796/775 cm^{-1} . Titanium dioxide was evidenced by the broad band from 700 to 500 cm^{-1} .

KTA-Tator, Inc.

115 Technology Drive
Pittsburgh, PA 15275

412.788.1300
www.kta.com

If you have any questions concerning the testing or this report, please contact me by telephone at 412.788.1300 extension 230, or by email at mswogger@kta.com.

Sincerely,

KTA-TATOR, INC.



Melissa A. Swogger
Analytical technician



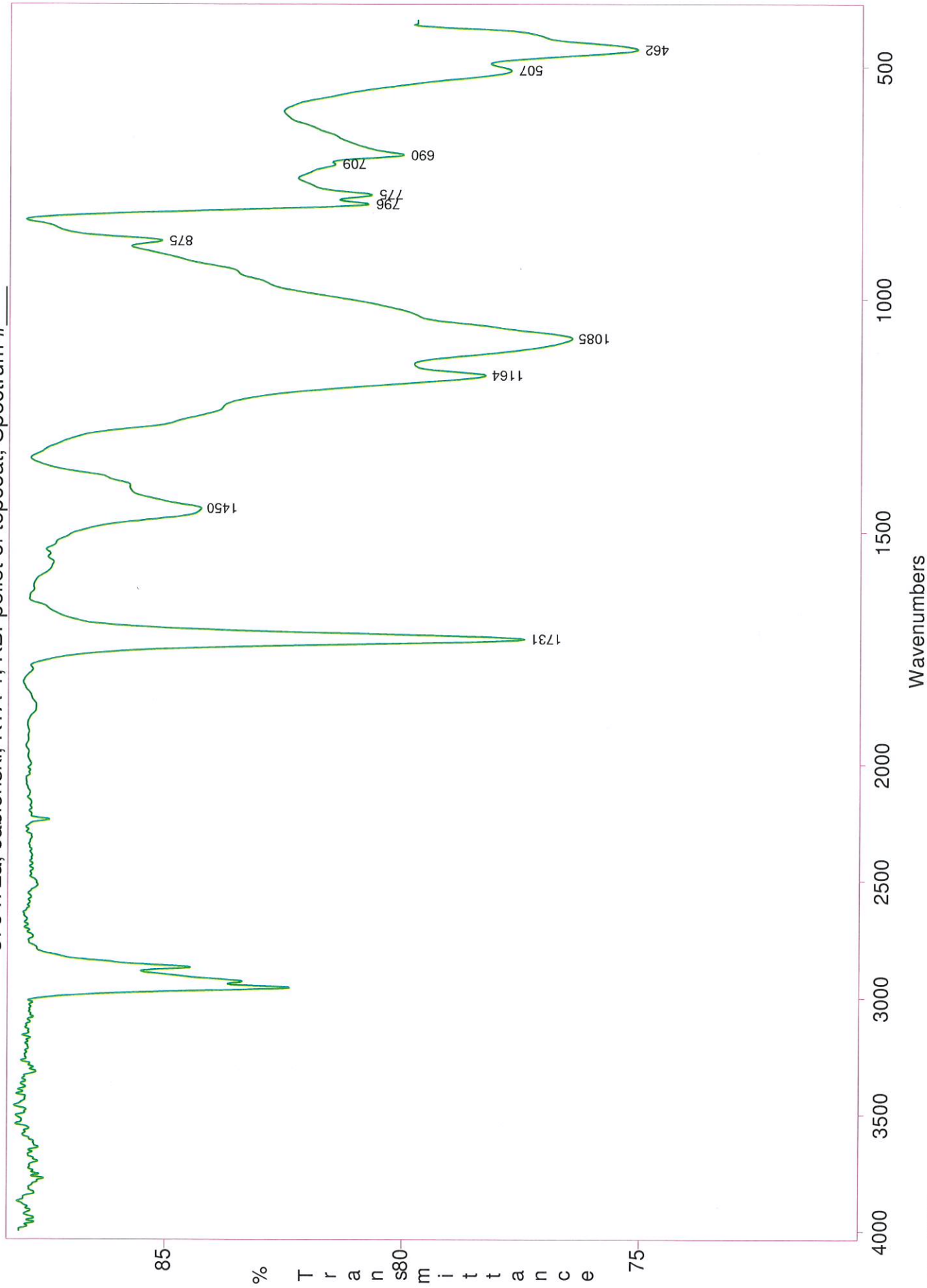
Valerie D. Sherbondy
Technical Manager – Analytical Laboratory Services

Appendix: Infrared Spectrum

MAS/VDS:tbr
JN370472
(370472 Jablonski.doc)

NOTICE: This report represents the opinion of KTA-TATOR, INC. This report is issued in conformance with generally accepted industry practices. While customary precautions were taken to verify the information gathered and presented is accurate, complete and technically correct, this report is based on the information, data, time, materials, and/or samples afforded. This report should not be reproduced except in full.

370472a, Jablonski, KTA-1, KBr pellet of topcoat, Spectrum # _____



Operator: MAS
Resolution: 4.0

Scans: 32
Date: Wed Jul 05 08:16:37:81 2017