



## Memorandum

Date: 24 February 2016

To: William Smith, Boyd/Smith Inc.

From: Tyler M. Meek, Paul M. Millette

Project: 151755 – Facade Inspection, The Carillon, 185 Massachusetts Avenue,  
Boston, MA

Subject: GFRC Coatings, Repair Options

Phoenix Bay State Construction Co., Inc. (Phoenix), with Simpson Gumpertz & Heger Inc. (SGH) guidance, has completed installation of the KEIM coating products on the west face of the building. Photo 1 shows the state of the mockup area prior to cleaning of the GFRC panels and installation of the KEIM products. Photos 2 through 4 show the mockup area after completion of the coating installation and replacement of the sealant joints. Photos 3 and 4 show existing conditions on the level above the mockup area that are similar to the condition of the mockup area prior to our work.

As part of our research on GFRC panels and their performance in the New England environment, we reviewed two similar projects: The Center of the Arts building at Endicott College (Photo 5) and The St. George condominiums in Revere, Massachusetts.

The Center of the Arts building at Endicott College has similar cracking (Photo 7) and a small amount of efflorescence staining (Photo 8) similar to The Carillon. It appears the GFRC panels have been cleaned in some areas of the building. However, where the panels have not been cleaned, cracks, stains, and environmental buildup are clearly visible (Photo 9).

The St. George condominiums also have GFRC panel cracking (Photo 10) similar to The Carillon and some staining below windows and other areas with water runoff (Photo 11). The panels at St. George condominiums are coated with what appears to be an acrylic coating. The coating is blistering and peeling in a number of locations (Photos 12 and 13).

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**Photo 1**

Mockup area prior to cleaning and coating installation (5 November 2016).



**Photo 2**

Mockup area, coating installation complete (18 February 2016).



**Photo 3**

Mockup area and deterioration of level above.



**Photo 4**

Mockup area and deterioration of level above.



**Photo 5**

The Center of the Arts building, Endicott College, Beverly, MA.



**Photo 6**

St. George condominiums, Revere, MA.



**Photo 7**

GFRC cracks, Endicott College.



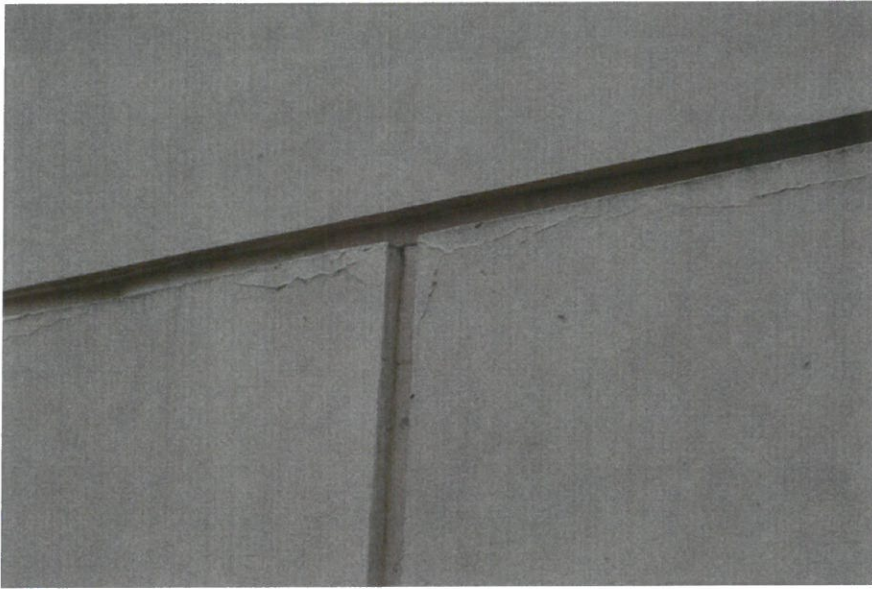
**Photo 8**

Efflorescence staining, Endicott College.



**Photo 9**

Uncleaned portion the GFRC panels, Endicott College.



**Photo 10**

GFRP panels cracks,  
St. George condominiums.



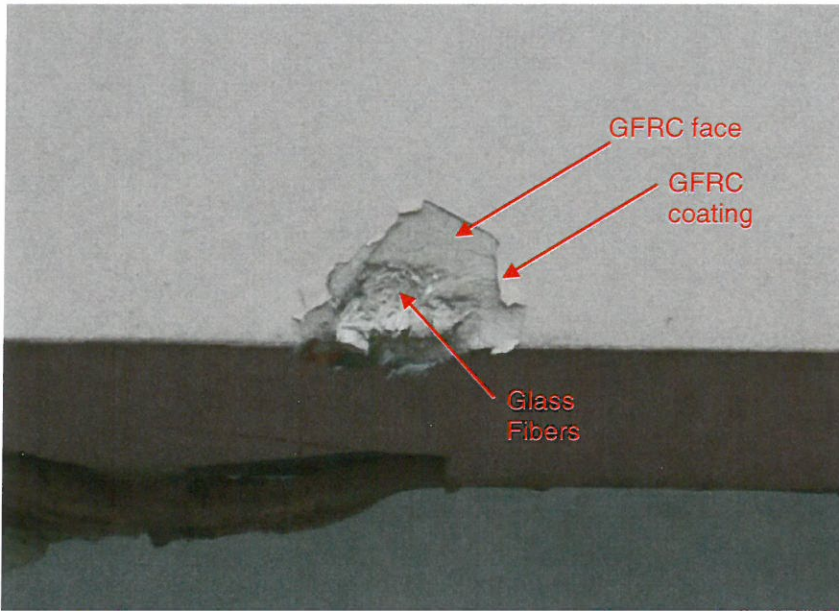
**Photo 11**

Staining on GFRP panels,  
St. George condominiums.



**Photo 12**

Blistered GFRP coating,  
St. George condominiums.



**Photo 13**

Peeled GFRC coating,  
St. George condominiums



79 Shirley Street  
 Boston, MA 02119  
 P 617.412.4408  
 F 617.412.9094  
 www.phsboston.com

February 19, 2016

Simpson Gumpertz & Heger  
 41 Seyon Street, Bldg 1, Suite 500  
 Waltham, Ma 02453

Attn: Paul Millette

Re: 185 Mass Ave

Paul,

We are pleased to submit herewith our price at the above referenced project for the GFRC Coatings and Sealants in the lump sum of Three Hundred Nine Thousand Five Hundred Ninety Five Dollars.....\$309,595.00

This Proposal is based on SG&H Highlighted Elevation drawing and Budget pricing spreadsheet with quantities

**Budget Pricing for GFRC on East, South and West Elevations**

	Description	Quantity		Unit Price	Total
1	Mobilization	1	ls	2	\$4,600.00
2	General Conditions	1	ls	1	\$10,717.00
3	Sidewalk Protection (east and south)	1	ls	1	\$20,815.00
4	Building access (Manlift, Swing, other)	1	ls	1	\$71,564.00
5	Remove sealant within the mock up (perimeter window frame-to-GFRC panel joint, GFRC-to-masonry joint and GFRC-to-GFRC wall joint)	7,500	lf	\$8.24	\$61,763.00
6	Surface clean and preparation of GFRC surface (efflorescence)	6,000	sf	\$2.35	\$14,073.00
7	Two coats of KEIM Royalan exterior mineral silicate coating system (color to match existing GFRC panel system)	6,000	sf	\$10.10	\$60,604.00
8	Install new sealant at all joints within the mock up location (urethane and silicone)	7,500	lf	\$8.73	\$65,459.00
9	Demobilization	1	ls		
<b>Total</b>					<b>\$309,595.00</b>