

9 May 2016

Minimal short-term stabilization

The plan for minimal short-term stabilization represents all of the recommended items to be completed if the Township only wishes to buy the building time. Many of these items are not included in the subsequent plans for full stabilization, because roof, chimney, and facade replacement would eliminate the need for such repairs.

Recommendations - Minimal short-term stabilization							
	Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost	Phase Cost	3% Per year Cost index
Phase 1	IA	Ridge flashing	Provide continuous copper metal ridge	231 LF	\$10,890	\$262,978	N/A
	IB	Repair metal roof accessories	Replace flat roof areas with EPDM; repair roof edge flashing, gutter lining, soffit and modillions	1330 LF	\$26,620		
	IC	Line gutter in EPDM	Line the existing copper gutter in EPDM	300 LF	\$14,520		
	ID	Temporary chimney repair	Kill vegetation and temporarily cap chimneys with EPDM.	4 CHIMNEYS	\$7,260		
	IF	Shingle replacement	Individually or by area, replace damaged and failing slate shingles in-kind	50 SHINGLES	\$3,025		
	IIA	Sealant at trim	Providing sealant at seams along brick and wood in contact with stucco	3000 LF	\$38,115		
	IIB	Flashing along brick	Providing flashing at stucco seams along brick grade course	430 LF	\$7,805		
	IID	Repaint exterior	Stucco; wood trim; sun porch; and soffit.	8500 SF	\$99,958		
	IIG	Secure porch	Provide necessary flashing and support for existing porch		\$8,785		
	IIH	Misc. woodwork repairs	Repair areas of damaged exterior wood; including soffits, corbels, trim, etc.		\$30,250		
	IIIA	Glass replacement	Replace broken glass	3 OPENINGS	\$1,500		
	IIIC	Add missing storm windows and doors	Install storm windows on unprotected windows and doors with glass panels	27 OPENINGS	\$14,250		

Total estimated cost (not phased)=

\$262,978

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Full stabilization (Economical)

It may be determined that the funds are available to complete a full stabilization of the building, but the emphasis is on securing the envelope economically rather than historic continuity. This plan would be desirable if the Township determined that the higher level of historic and aesthetic quality would not be worth the extra costs.

Recommendations - Full stabilization (Economical)							
	Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost	Phase Cost	3% Per year Cost index *
Phase 1	IH	New composite roof	Entire roof replacement with composite shingle system; where necessary, patch sheathing, reinforce structure, and replace flashing	6100 SF	\$217,800	\$261,360	N/A
	IE	Chimney repair	Clearing chimney openings and securing from future biological growths; partial demolition and restoration; patch with stucco	500 SF	\$14,520 / chimney		
Phase 2	IIE	Re-stucco entire facade	Replace entire stucco facade; replace lath where necessary; provide necessary flashing	6500 SF	\$153,700	\$162,485	\$177,109
	IIG	Secure porch	Provide necessary flashing and support for existing porch		\$8,785		
Phase 3	IIH	Misc. woodwork repairs	Repair areas of damaged exterior wood; including soffits, corbels, trim, etc.		\$30,250	\$139,275	\$164,345
	IIIA	Glass replacement	Replace broken glass	3 OPENINGS	\$1,500		
	IIIC	Add missing storm windows and doors	Install storm windows on unprotected windows and doors with glass panels	27 OPENINGS	\$14,250		
	IID	Repaint exterior wood	Wood trim; sun porch; and soffit.	2000 SF	\$60,000		
	IIIF	Shutter restoration	Restore shutter functions and place in closed position; secure from the inside; replace shutters where necessary	85 SHUTTERS	\$33,275		

Total estimated cost (not phased)= **\$563,120**
*** \$767,590**

IIIE	Window and door replacement	Provide new custom windows and doors	88 OPENINGS	\$220,220
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*** Adjusted cost for new window and door replacement**

* Cost shown represents 3-years from the previous phase: Phase 2 reflects a 9% increase, Phase 3 reflects an 18% increase.

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Full stabilization (Historically preferable)

Due to the high historic value and architectural qualities of the Archibald Johnston mansion, it is recommended to respect the original characteristics and to restore or replace-in-kind when possible. This would be the desired course if the Township has any plans to showcase the building in some historic capacity. Regardless of its future use, the mansion will be a prominent feature of the park.

Recommendations - Full stabilization (Historically preferable)							
	Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost	Phase Cost	3% Per year Cost index *
Phase 1	II	New slate roof	Entire roof replacement with new slate roof; where necessary, patch sheathing, reinforce structure, and replace flashing	6100 SF	\$272,250	\$315,810	N/A
	IE	Chimney repair	Clearing chimney openings and securing from future biological growths; partial demolition and restoration; patch with stucco	500 SF	\$14,520.00 / chimney		
Phase 2	IIE	Re-stucco entire facade	Replace entire stucco facade; replace lath where necessary; provide necessary flashing	6500 SF	\$153,700	\$162,485	\$177,109
	IIG	Secure porch	Provide necessary flashing and support for existing porch		\$8,785		
Phase 3	IIH	Misc. woodwork repairs	Repair areas of damaged exterior wood; including soffits, corbels, trim, etc.		\$30,250	\$206,595	\$243,782
	IID	Repaint exterior wood	Wood trim; sun porch; and soffit.	2000 SF	\$60,000		
	IIIC	Add missing storm windows and doors	Install storm windows on unprotected windows and doors with glass panels	27 OPENINGS	\$14,250		
	IIIB	Restore all windows and doors	Re-glaze and fix all windows and counterweights as necessary; strip and paint all sashes, muntins, jambs, headers, sills, and trim.	88 OPENINGS	\$68,820		
	IIIF	Shutter restoration	Restore shutter functions and place in closed position; secure from the inside; replace shutters where necessary	85 SHUTTERS	\$33,275		

Total estimated cost (not phased)= \$684,890

* Cost shown represents 3-years from the previous phase: Phase 2 reflects a 9% increase, Phase 3 reflects an 18% increase.

TREATMENT SUMMARY

From Archibald Johnston
Mansion Stabilization
Study

9 May 2016

Roof Treatments				
Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost
IA	Ridge flashing	Provide continuous copper metal ridge	231 LF	\$10,890
IB	Repair metal roof accessories	Replace flat roof areas with EPDM; repair roof edge flashing, gutter lining, soffit and modillions	1330 LF	\$26,620
IC	Line gutter in EPDM	Line the existing copper gutter in EPDM	300 LF	\$14,520
ID	Temporary chimney repair	Kill vegetation and temporarily cap chimneys with EPDM.	4 CHIMNEYS	\$7,260
IE	Chimney repair	Clearing chimney openings and securing from future biological growths; partial demolition and restoration; patch with stucco	500 SF	\$14,520.00 / chimney
IF	Shingle replacement	Individually or by area, replace damaged and failing slate shingles in-kind	50 SHINGLES	\$3,025
IG	New asphalt roof	Entire roof replacement with asphalt shingle system; where necessary, patch sheathing, reinforce structure, and replace flashing	6100 SF	\$108,900
IH	New composite roof	Entire roof replacement with composite shingle system; where necessary, patch sheathing, reinforce structure, and replace flashing	6100 SF	\$217,800
II	New slate roof	Entire roof replacement with new slate roof; where necessary, patch sheathing, reinforce structure, and replace flashing	6100 SF	\$272,250

Facade Treatments				
Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost
IIA	Sealant at trim	Providing sealant at seams along brick and wood in contact with stucco	3000 LF	\$38,115
IIB	Flashing along brick	Providing flashing at stucco seams along brick grade course	430 LF	\$7,805
IIC	Patch and resurface stucco	Provide compatible stucco mixture and replace lath and stucco where necessary; provide new finish coat on all existing stucco	1520 SF (to be patched)	REPLACEMENT REQUIRED
IID	Repaint exterior	Stucco; wood trim; sun porch; and soffit.	8500 SF	\$99,958
	Repaint exterior wood	Wood features only; ie. trim, sunporch, soffit, etc.		\$60,000
IIE	Re-stucco entire facade	Replace entire stucco facade; replace lath where necessary; provide necessary flashing	6500 SF	\$153,700
IIF	Replace stucco with alternative material: Synthentic stucco	Replace entire stucco facade with a synthetic stucco system, providing flashing where necessary	6500 SF	\$153,700
IIG	Secure porch entry	Provide necessary flashing and support for existing porch		\$8,785
IIH	Misc. woodwork repairs	Repair areas of damaged exterior wood; including soffits, corbels, trim, etc.		\$30,250

Openings' Treatments				
Section #	Treatment	Description	Estimated scope of work	Estimated Initial Cost
IIIA	Glass replacement	Replace broken glass	3 OPENINGS	\$1,500
IIIB	Restore all windows and doors	Re-glaze and fix all windows and counterweights as necessary; strip and paint all sashes, muntins, jambs, headers, sills, and trim.	88 OPENINGS	\$68,820
IIIC	Add missing storm windows and doors	Install storm windows on unprotected windows and doors with glass panels	27 OPENINGS	\$14,250
IIID	New custom storm windows and doors	Provide compatible storm windows and doors of custom size	86 OPENINGS	\$44,500
IIIE	Window and door replacement	Provide new custom windows and doors	88 OPENINGS	\$220,220
IIIF	Shutter restoration	Restore shutter functions and place in closed position; secure from the inside; replace shutters where necessary	85 SHUTTERS	\$33,275

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Ventilation needs

Reference Preservation Brief 31: Mothballing Historic Buildings

After securing the exterior of the building, ensuring proper ventilation of the interior will be vital when using modern technologies. It is likely, however, that passive methods will be sufficient if carried out properly.

- Generally, the building will require:
 - in winter, 1 air exchange per hour; 5% of openings to be louvered
 - in summer, 2 to 3 air exchanges per hour; 10% of openings to be louvered
- Locate louvered openings on every floor, in a manner to facilitate cross-ventilation, with interior doors ajar
- Electric fans can be utilized to facilitate ventilation during humid periods
- Monitoring devices can be utilized to record interior humidity levels, to ensure adequate levels

National Register Status benefits

Reference National Register of Historic Places Fact Sheet

Criteria for eligibility on the National Register:

- A. be associated with events that have made a significant contribution to the broad patterns of our history; or
- B. be associated with the lives of persons significant in our past; or
- C. embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant a distinguishable entity whose components may lack individual distinction; or
- D. have yielded or may be likely to yield information important in history or prehistory.

Listing on the National Register has the following benefits:

1. recognition that a property is of significance to the nation, the state, or local community;
2. eligibility for federal tax incentives for income-producing buildings;
3. state and federal preservation grants for planning and rehabilitation of buildings owned by not-forprofit organizations and local governments;
4. consideration in the planning for state and federal projects or projects that are assisted by state or federal agencies.

Total window replacement vs. storm windows

Reference Saving Windows, Saving Money: Evaluating the Energy Performance of Window Retrofit and Replacement

Window upgrade alternatives to new high performance replacement windows include:

- weather stripping
- applying an interior surface film
- installing insulating cellular shades
- installing exterior storm windows
- installing interior window panels

Using a combination of methods, the energy savings of the alternatives are competitive with new replacement windows, and have the potential for a higher return on investment.