

Flashing, Lintels and Sealant Investigation Report

For
25 Sigourney Street
Hartford, CT 06106
DPW Project Number B1-2B-033L

Prepared For
STATE OF CONNECTICUT
Department of Public Works

June 26, 2009



Prepared by:

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EXECUTIVE SUMMARY

At the request of Connecticut Department of Public Works, Silver Petrucelli & Associates, Architects and Engineers was retained to conduct an investigation of the existing condition of the flashing, lintels and sealant at various but representative locations around the building at 25 Sigourney Street Hartford, Connecticut. On June 19th, 2009 two team members of Silver Petrucelli & Associates, Architects and Engineers as well as a member of Servus Management Corporation, walked all the roofs, balconies and around the lower level of the facility to determine if the restoration work of the recent past is performing as expected, or if there are systemic failures in any of the exterior weatherproofing systems. The general consensus of the overall condition of the weatherproofing systems was the building is showing all the signs of normal aging of the 20 plus year old building. There are several areas, mostly on the upper stories and on the balconies, where sealants and masonry is showing more significant aging and require some attention to remedy current water infiltration. The most common deficiencies are found in the parapet walls located on the balconies of the upper (17-19) levels. Problems that occur there include: lack of weep holes at base of wall, failing sealant, failing thru-wall flashing in select areas, water pooling and moss growth, and there are several cracked and damaged cap stones. The following report will explain in detail the observations made by the team, as well as corrective actions that need to be taken in order to remedy the problems.

Silver Petrucelli & Associates, Architects and Engineers recommend three solutions to remedy the water infiltration:

- All failing sealant at balcony parapets should be scrapped out and reapplied, making sure to cut and install weep holes every 24 inches above the thru-wall flashing at the base of the parapet walls.
- All damaged capstones should be removed and replaced and all the balcony pavers should be lifted and moss and plant growth should be cleared from the balconies.
- At locations of persistent water infiltration, the parapet walls need to be deconstructed in order to closer examine the condition of the thru-wall and fabric flashing that has proven to be ineffective in one location (refer to our report from April 13th, 2009 for further detail on work to be performed at this location)

OBSERVATIONS DURING FACILITY WALK THROUGH

On June 19th, 2009 a team from Silver Petrucelli & Associates, Architects and Engineers as well as members of Servus Management Corporation, walked all the roofs, balconies and around the lower level of the office building located at 25 Sigourney Street, Hartford, Connecticut to investigate the overall condition of the flashing, lintels and sealants of the facility. The team focused on the conditions of the balconies on the upper levels. Most issues at the facility involving water infiltration have been observed at or below balcony parapet walls. Most of the conditions observed were typical of a building of this age. Life expectancy of the flashing and sealant in most locations is reaching the end of its useful life and failures can be expected without regular maintenance and repairs. In most cases the lintels were in good shape; several of them are beginning to rust and should be sanded, primed and painted.

Most of the repairs preformed by Kelly Construction in 2004 appear to be performing as expected. There are some deficiencies in the metal flashing discussed in previous reports of the facility. Most of Kelly Construction's work was performed above the lintels of the windows removing and repairing brick and flashings. These areas appear to be in good condition at this time. The areas that are showing signs of ageing and require repairs are the balcony parapet walls. The parapet at the primary roof was repaired by Kelly Construction and is in excellent condition with no signs of weatherproofing failure, however there was no 2004 work performed on the balcony parapet walls and the first system's failure is noticeable. Major issues include: lack of sufficient amount of weep holes, damaged and bent thru-wall flashing, failing and in some case excessive amounts of sealant. To correct leaks of the past, sealant has been continually reapplied to areas along the parapet walls. The buildup of sealant is causing issues with proper drainage of water out of the masonry wall cavities which in turn is adding to the water infiltration into the



Damaged Thru-Wall Flashing (typical)



Excessive Sealant and Damaged Flashing



Sealant Covering Weep Holes

building. Failing sealant should be removed and reapplied and the thru-wall flashing should be repaired and in some cases needs to be replaced. Overall most of the facility appears to be in good shape. There are a few persistent leaks that need to be addressed as laid out in our April 13, 2009 report and in most other cases simply reinstalling the proper amount of weep holes and removing excessive sealant and reapplying one bead should help restore the building to proper working condition.



Failing Mortar Joints



Moisture trapped in wall not coming out weeps



Rusted Lintel



Cracking Capstone



Moss growth / Water Infiltrating scaffolding Anchor Points

RECOMMENDATIONS

Overall the building is in reasonably good shape for a structure its age. Most of the problems with the building are all related to the normal ageing of materials. Most of the persistent issues at the facility take place on the balcony parapet walls. We have several recommendations on how to treat the building's problems.

1. All failing sealant at balcony parapets should be scraped out and reapplied, making sure restore existing weep hole openings and to cut-in supplemental weep holes every 24 inches just above the thru-wall flashing at the base of the parapet walls.
2. All damaged capstones should be removed and replaced and all the balcony pavers should be lifted and moss and plant growth should be cleared from the balconies.
3. At the two locations of persistent water infiltration, the parapet walls should be deconstructed in order to determine the exact cause of the failure of the thru-wall and fabric flashing (refer to our report from April 13th, 2009 for further detail on work to be performed at this locations)
4. The thru-wall flashing is in poor shape. It is bent, distorted and starting to fail in several locations. The flashing has come to the end of its useful life and is begin to fail around the building. It is our recommendation to remove bricks at the flashings on the interior side of the parapets and replace flashing at the parapets that are currently leaking. We anticipate that in the future other similarly structured balconies around the building will begin to fail and the flashing will need to be replaced. For the time being we recommend replacing it on a as-needed, case by case basis rather than a complete reconstruction of the balconies (most of which are performing well), which would be expensive, replacing flashing in areas that have not yet, nor may ever fail.
5. The application of excessive sealant over other generations of sealant should be stopped, and any repairs by contractors should be clearly communicated before the work begins and then thoroughly inspected after repairs are completed. Sealants should be installed in accordance with the manufacturer's recommendations which have not been the case in the current over-application of sealant. In most cases, manufacturers require the raking and removal of failed sealants, the chemical cleaning of the masonry joint and the application of a sealant primer before installing the backer rod and sealant.

ESTIMATE

WATER INFILTRATION REMEDIATION ESTIMATE

06-Aug-09

25 Sigourney Street
 Hartford, CT 06106
 DPW Project Number B1-2B-033L

STUDY PHASE OPINION OF PROBABLE CONSTRUCTION COST
 (Replacement of all thru-wall and fabric flashing at all balcony parapets)

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SECTION	NUMBER	WORK CATEGORIES	UNIT	UNIT COST	UNIT QTY.	ALLOWANCE	TOTAL \$
DIVISION ONE							
		BONDS, INSURANCE & PERMIT PER STATE	LLS			\$5,000	\$5,000
				DIV 1		\$5,000	
DIVISION TWO							
		Staging Rental (Suspended)	DAY	\$1,575.00	15.0		\$23,625
		Dumpsters	EA	\$1,000.00	2		\$2,000
		Setup / Break Down Staging	HR	\$78.62	96		\$7,548
		Demo Thru-Wall Flashing	LF	\$1.00	1,315		\$1,315
		Demo Brick Parapet Walls	SF	\$12.00	4,000		\$48,000
		Demo Cap Stones	LF	\$5.00	150		\$750
				DIV 2		\$83,238	
DIVISION FOUR							
		Masonry Wall (Brick)	SF	\$22.00	4,000		\$88,000
		Cap Stones	LF	\$25.00	150		\$3,750
				DIV 9		\$91,750	
DIVISION SEVEN							
		Fabric Flashing	LF	\$4.50	1,315		\$5,918
		Thru-Wall Flashing	LF	\$10.00	1,315		\$13,150
		Sealant	LF	\$2.50	1,315		\$3,288
				DIV 7		\$22,355	
DIVISION NINE							
		Ceiling Replacements	SF	\$3.50	200		\$700
				DIV 9		\$700	

Construction Cost	\$203,042.52
Includes O & P	
Contingency 10%	\$20,304.25
Total Construction Cost	223,346.77

GENERAL NOTES:
 CONSTRUCTION COSTS ARE BASED ON 2007 CONSTRUCTION COSTS.
 ESCALATE 5% PER YEAR THEREAFTER.
 COST ESTIMATES BASED ON HISTORICAL DATA FOR COMPARABLE PROJECTS.
 THESE ESTIMATES ARE SCHEMATIC AND DO NOT REFLECT CONSTRUCTION DOCUMENT DETAIL.

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