

Memorandum

To : Ramon Hirsig, Executive Director

Date: October 20, 2005

From : Karen Johnson, Deputy Director
Administration Department

Subject : Capitol Square Building – Structural Repairs - Window Breakage and Water Infiltration

There are two significant issues currently impacting the Capitol Square Building structure: glass breakage and water infiltration (leakage). While glass breakage is the current focus, the issue of water leakage has been studied since 1998. As a result, Department of Finance, in the 2005-06 budget, approved \$690,000 to support the development of plans for the implementation to address leakage repair. BOE and DGS representatives continue to communicate with the Department of Finance, the Legislative Analyst Office, and representatives from the legislature regarding both repair projects, and are operating with a consensus that the optimum course of action is to address the repairs of water infiltration and window breakage concurrently.

SPANDREL GLASS BREAKAGE

The glass breakage is the more recent of the two issues and involves the greatest of safety concerns. Some sections of BOE's spandrel glass (decorative glass and part of the curtain wall system) have cracked and/or fell in shards to the ground below. The spandrel glass is an opaque coated glass installed between the sill and ceiling of each floor and is commonly used in curtain wall construction on multi-story buildings.

History of spandrel glass failures:

- Prior to 2001 (east side)
- August 2001 (west side 8th floor)
- September 2002 (south side 7th floor)
- January 2005 (south side 6th floor)
- September 2005 (south side 7th floor)
- September 2005 (south side 11th floor).

Actions Taken:

- McGinnis Chen Associates LLP, a forensic architect, was commissioned to inspect each side of the building to determine the cause of breakage. Preliminary findings are showing the cause to be associated with thermally induced stress. Other contributing factors include: shading (temperature differentials), actual glass surface temperatures and loose gaskets. At this time a basis to conclude the probability of future breakage does not exist. The forensic architect is to provide a written report by mid-November.
- BOE and Department of General Services (DGS) representatives developed and implemented plans to determine the cause of the breakage and install protective measures to protect the employees, day care center staff and children, and the general public.
- Pedestrian protection enclosures and fencing have been constructed on the 4th level parking area and along 4th, 5th, and N Streets. These structures are to remain in place for a minimum of 12 months.
- BOE restricted the use of meeting rooms located on the first floor, which have the atrium enclosure. They are conference rooms 110, 111, 112, and 113.
- Installation of a temporary wall structure has been constructed to protect the children's play area in the day care center.

- BOE, Day Care Center, and Department of Social Services representatives met to ensure the preventative measures being implemented in the day care center meet state licensing requirements.
- “All Employee” communications have been implemented to share the findings and preventative measures being taken in an effort to reduce employee concerns while maintaining normal business and production operations.
- BOE and DGS representatives continue to communicate with the Department of Finance, the Legislative Analyst Office, and other representatives from the legislature.
- BOE, City of Sacramento Dept. of Transportation, and City representative for the area are working to identify additional handicapped parking zones around the building. The elimination of parking around the building has placed a burden on several disabled BOE staff.
- To accommodate BOE monthly parkers, daily parking and the issuance of monthly passes has been suspended. Additionally, the BOE’s fleet of State vehicles has been relocated and parked in tandem to increase available parking spaces.
- DGS reviewed the building designs and field conditions of the 11th floor to determine if the weight load was contributing to spandrel glass breakage. This does not appear to be the case as the floors were designed to support a greater weight load capacity than currently being utilized.

WATER INFILTRATION

BOE and DGS have been dealing with water infiltration problems since the building was opened for use in 1993. The DGS negotiated a settlement with the original contractor and architect for many of the severe leaks in the building.

Since that time three studies were commissioned to investigate the cause and identify a recommended approach for the repair project. The studies were performed in 1998, 2000, and 2005. Each study confirmed the main source of the infiltration is caused by the deterioration of sealants and the neoprene glazing gaskets surrounding each glass section. As a consequence, the gaskets continue to shrink, become brittle, and overwhelm the window system’s ability to expel the water. The source of the failing gaskets was not due to contractor installation, but rather a premature failure of the gasket materials.

The last study commissioned in 2005, identified what corrective actions should be taken. The recommendation is to replace the outside and inside gaskets of each section of glass with new interior gaskets and a silicone wet sealant applied on the exterior. BOE received \$690,000 in the 2005-06 budget to develop preliminary plans and working drawings for the repair project. The consultant selection process for the project is currently being completed, with plans and specifications anticipated in the Spring of 2006.

Building History

- The 25 story, 617,000 square foot high rise building is constructed with a glass/aluminum curtainwall and precast concrete exterior. It was constructed in 1991-1992 by CalPERS for DGS at a cost of \$79.4 million.
- The architect on the project was Dreyfuss and Blackford of Sacramento and the General Contractor was Hensel Phelps of Oakland.
- The curtainwall glazing system was produced by Kawneer and installed by Architectural Glass and Aluminum.
- BOE occupied the facility in February 1993. After several years of management by CalPERS, DGS accepted the responsibility to manage the building for the BOE.

COSTS AND EXPENDITURES

Glass Breakage Costs:

The expenditures for the glass breakage preventative measures will be absorbed using existing available funds. Actual costs for repairs will be identified once the report from the Forensic Architect is approved and published. Below is an estimate for 12 months rental of scaffolding, fencing, and barriers:

Scaffolding - Install and Rent	\$ 130,557	
Fence Panels - Install and Rent		3,100
Orange Plastic Barriers - Install and Rent		6,630
DGS, DCU Installation of Walls and Project Oversight	<u>16,476</u>	

12 MONTH TOTAL \$ **156,763** (Equates to approximately \$13,063 per month.)

Water Filtration Costs:

BOE has been told confidentially, the Administration wants to include the repair monies of \$11.6 million in the 2006-07 Governor's Budget as a possible placeholder. This amount is reflected in the 2005-06 April Finance Letter (i.e. \$6.728 million GF and \$4.874 million other fund). The proposed amount for the 2006-07 FY is less the \$690,000 that was approved in the 2005-06 budget for the development of the plans and drawings, which will now include the window repair project.

When the report from the Forensic Architect is finalized, DGS will be in a stronger position to provide a more accurate estimate, which will be processed as a Spring Finance Letter.