Harvard Corporate Center

Buildings Condition Assessment

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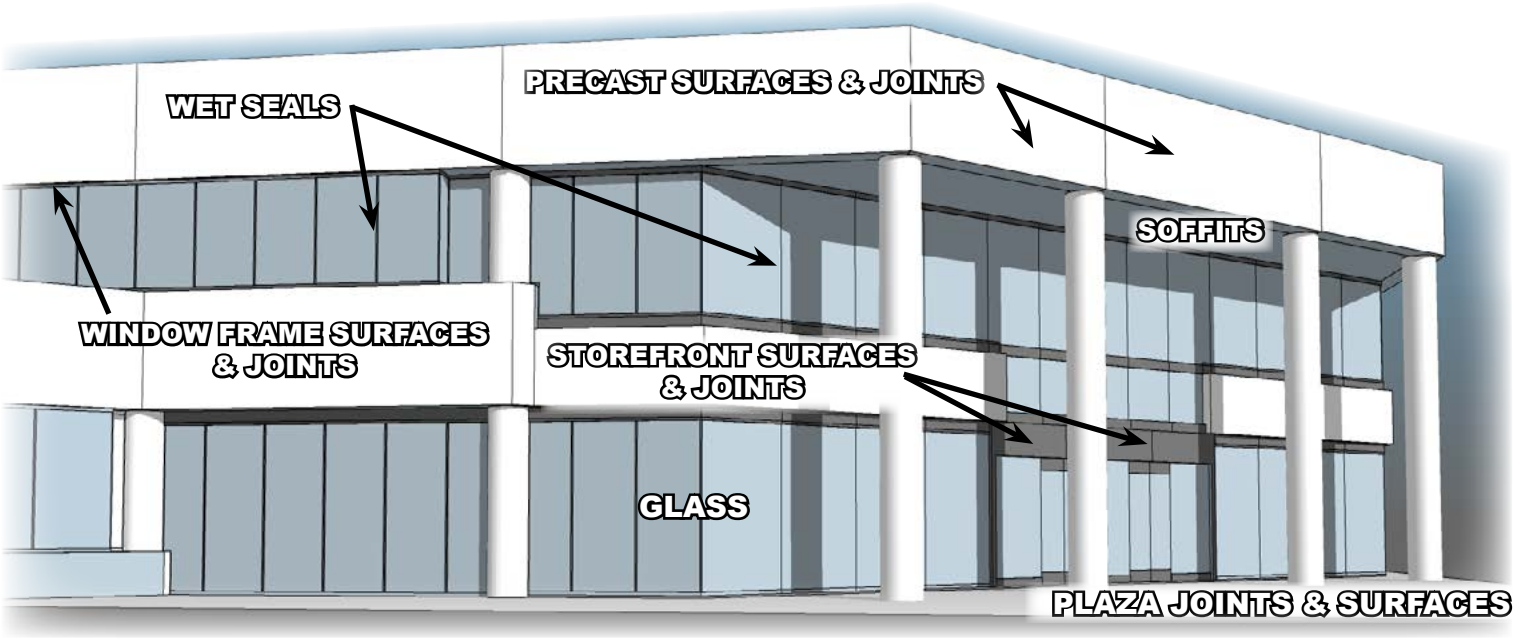


BUILDING ONE ENTRANCE AND NORTH END OF EAST WALL

1. Project Description

In January of 2015 the envelopes, not including the roofs or balcony surfaces, of the two office buildings of the Harvard Corporate Center were surveyed and evaluated to determine their condition. This examination was conducted from the 13th of the month until the 16th and included the use of an aerial lift and remotely operated cameras as well as tests of the precast surfaces and sealant adhesion tests to determine the restoration services that both buildings need currently as well as those which will be needed in the future.

2. Building Description & Known History

Both buildings are of similar design and include many of the same components and construction details. Both are precast concrete supported by steel structures. They were designed by the architectural firm of Hallenbeck Chamorro and Associates of Alamedia, California. The drawings for Building One, whose address is 2241 Harvard Street, are dated 1985, and the drawings for Building Two, 2251 Harvard Street, were issued in 1987. Their completion dates are therefore probably 1986 and 1988 respectively. With the exception of a nearly complete set of architectural drawings, issued for construction, none of the original contract documentation was available so the actual completion date of the buildings is not known. “As Built” drawings were not provided.

A file on a sealant restoration project completed in 1997 indicated that the precast panels of both buildings were cleaned at that time and the sealant between precast panels was replaced. The general contractor for that project was Harbison-Mahoney-Higgins, Inc. An MSDS sheet for DOW Corning 795 silicone sealant issued to Norcal Caulking of Ranch Cordova, California was in the file so they may have been the caulking contractor on the project.

According to the current building engineer the buildings were pressure washed within the past two years. With the exception of what was learned from the window cleaning firm (2020 Commercial Care, Inc., Sacramento, CA) and the exterminator (Eco-Tech Pest Control, Sacramento, CA) regarding an insect infestation no other building envelope maintenance records or history was available.

3. Evaluated Building Components and Conditions

3. 1 Precast Building Elements

3. 1. 1 Precast Surfaces

The precast concrete building elements are sound with only one incidence of spalling, one minor crack and no other forms of subsurface defects observed.

The precast surfaces are porous and readily absorb water. The vertical precast surfaces are still clean from the recent pressure wash but the horizontal surfaces on the upper floors are quite dirty. Some horizontal surfaces are eroded. Waterproofing and / or coating of the precast is recommended. The least expensive yet highly effective method would be to apply a penetrating sealer. These surfaces could also be painted with a coating that will adhere to the silicone joint sealant although this will introduce another maintenance requirement. Another alternative is a silicate, mineral paint. This a very low maintenance solution that will allow the introduction of color without the need for periodic re-application of the coating.

HORIZONTAL PRECAST SURFACES SHOWING EROSION AND DIRT ACCUMULATION

3. 1. 1. 1 Parapet

There is no coping or cap of any kind on the top of the parapet. Lightning rods and other appurtenances are bolted to anchors in the precast. The roofing material that was applied to this surface is weathered and should be restored.

3. 1. 2 Precast Joints

3. 1. 2. 1 Joints Between Wall Panels or Between Panels and Columns

With few exceptions, these joints are in good condition with material properties sound. There are some, although few, failures of adhesion to the substrate and no cohesive failures were observed.

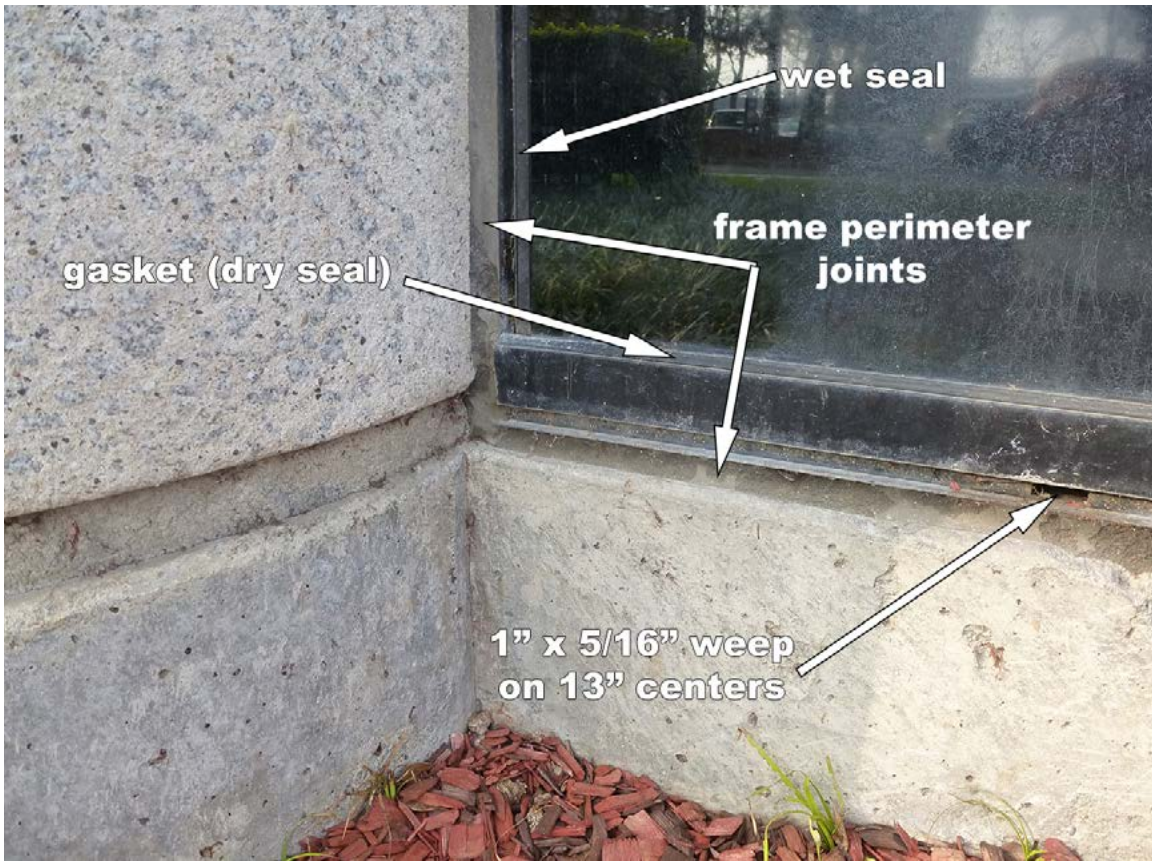
In some cases joint depth is less than optimal and in a few of those cases the material is very thin. There are only a few spots where this condition could result in a leak. There are no leaks in the building envelope due to failed or defective precast joints.

Despite their generally good condition it is recommended that these joints be restored during the next sealant restoration project. It has been seventeen years since any precast joints have been restored and other joints, which date from the original construction, are in need of replacement. If a sealant restoration project is undertaken to correct those joints it would be efficient to replace the pre-cast joints at the same time. (Twenty years is the maximum warranty period for silicone sealant and many professional building associations recommend sealant replacement be done every ten to twenty years.)

3. 1. 2. 2 Window, Door and Storefront Perimeter Joints

The window and storefront perimeter joints appear to date from the original build and they are deteriorated. There are few, if any, adhesive failures but there are extensive surface defects, which in some cases have progressed to openings in the joints. Although pervasive failure does not appear to be imminent all of these joints should be replaced in the near future.

The window perimeter joint on the ground floor of the Northwest wall of Building One is missing. Backer rod was installed but there is no sealant.



3. 1. 3 Wall Weeps

Originally, openings at the bottoms of the precast panels were provided to allow water that penetrated the envelope to escape. To bar the entry of stinging insects the window cleaners were tasked to fill these opening with sealant. The efforts of the exterminator or other factors could account for it, but closing the weeps as they did may have been a factor in the near elimination of the infestation.

The conditions that the weeps were intended to address apparently did not exist until now because there's been no evidence of water penetrating the walls and making its way into either building. Obviously, closing the weeps has had no detrimental effect. However, since weeps that exclude insect entry while allowing water to escape are available they should be installed when the precast sealant is replaced.

WALL WEEPS, TWO OF WHICH HAVE BEEN CLOSED WITH SEALANT

3. 2 Soffits

3. 2. 1 Soffit Surfaces

Currently, the Arcade soffit surface and the surfaces of the soffits over the entrances to both buildings are in fair condition. They all, however, could benefit from, and will eventually need to be coated with anti-microbial paint.

3. 2. 2 Soffit Joints

The perimeter joints around the Arcade soffit need to be restored as do the joints between the cement board components of this soffit. There is extensive adhesive joint failure in these joints. (See the previous image.) This could be corrected by using sealant primer or a different material, perhaps a silyl-terminated oligomer (hybrid) sealant. The perimeter joints and the cement board joints in the soffit over the entrance to Building Two are in better condition. They are in the same category as the precast joint. They are not likely to fail anytime soon but if a sealant project is undertaken these joints should be included.

(Sealant is not installed between the cement board and the precast in the soffit over the entrance to

ENTRANCE SOFFITS

BUILDING ONE

BUILDING TWO

Building One.)

3. 3 Windows and Storefronts

3. 3. 1 Glass

One of the first things one notices when approaching Building One is the damaged glass on the north end of the east elevation. Irrigation of the beds at the base of the wall has bathed the glass with mineral rich (hard) water which has reacted with the glass and damaged it. This condition exists to a lesser degree on many of the ground floor widows on both buildings. The glass on many of the upper floors is also slightly damaged or stained to a degree that normal cleaning will not remedy. If not cleaned or restored and sealed the glass will continue to degrade. Methods that restore glass to essentially new condition make glass replacement unnecessary and materials that seal the

DAMAGED GLASS

AT GROUND LEVEL

UPPER FLOOR

surface and impart hydrophobic qualities keep the glass in good condition.

3. 3. 2 Frames

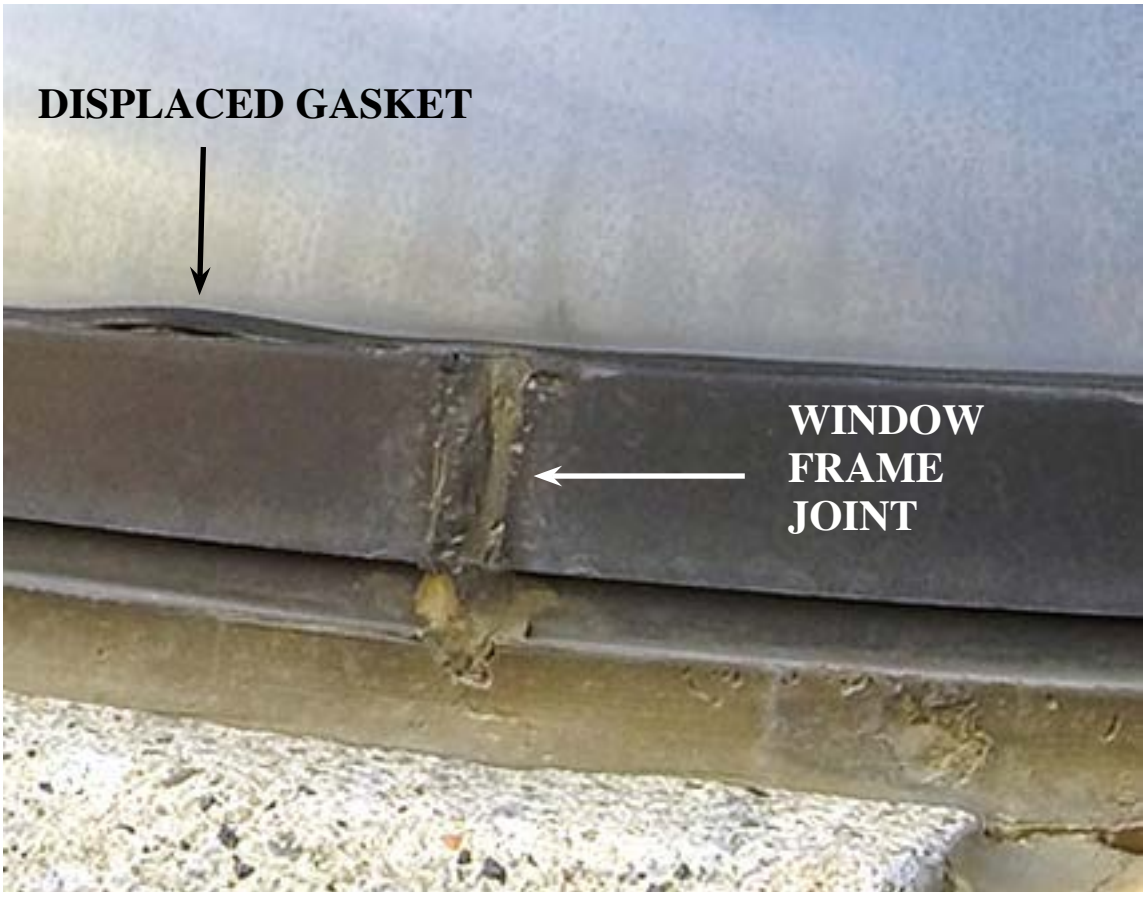
3. 3. 2. 1 Frame Surfaces

The same conditions that have effected the glass have stained and etched the frames. These could also be restored and sealed. Methods and materials similar to those used on glass are available for all kinds of frame finishes as well.

3. 3. 2. 2 Frame Joints

The spaces between window frame elements are closed with sealant. This is an improper means of sealing these joints because the area for sealant adhesion at the edge of a window frame extrusion is insufficient. These joints should be restored by removing the existing sealant and applying micro-sealant tape or a preformed silicone extrusion over the frame elements at the joint.

The spaces between the storefront frame elements are closed with sealant also. In the storefronts there are cases where a butt joint is the correct configuration. Where the frame elements are perpendicular to each other fillet joints were installed and in those cases that was the correct choice too. There are places however, where tape or a silicone extrusion should have been used and



these changes should be part of the sealant restoration specification.

3. 3. 3 Glazing Joints

3. 3. 3. 1 Gaskets

Where the top and bottom horizontal frame elements meet the glass in both the windows and the storefronts gaskets secure the glass and seal the joint. Mostly, they are in good condition. Some are out of place over distances of a few inches (the previous image includes an example). In some cases they have contracted creating openings. Where either of these conditions exist they should be replaced with wet seals.

3. 3. 3. 2 Wet Seals

Where the vertical frame elements meet the glass, in both the windows and the storefronts, structural sealant secures the glass and seals the joint. Although it has not yet taken place in a significant percentage of these joints, cohesive and adhesive failure of the wet seals have occurred. Glass has broken recently at several locations throughout the buildings. The glass installer informed the building engineer that is due to “pressure” on the glass. (This is a reference to lateral force, not air pressure.) The failure of the wet seals may have relieved that lateral force. This may be an indication that a lower modulus sealant is called for.

The wet seals, in many locations, perhaps a majority, have surface defects too.

3.3.4 Weeps

A slightly different window system was installed in the two buildings. In Building One 1”x5/16” openings on 13” centers exist in the bottom of the frame. There are no such weeps in the window frames on Building Two. Paperwasps or yellow jackets have been a nuisance in Building One since a long period of vacancy that ended in 2010. To prevent their entry into the building through weeps, material intended for the purpose can be installed. It will have to be custom cut from material used for similar purposes but that operation can be performed by anyone and could be done in conjunction with sealant restoration, window cleaning or any other maintenance or remediation service.

3.4 Access Components Other Than Storefront Entrances

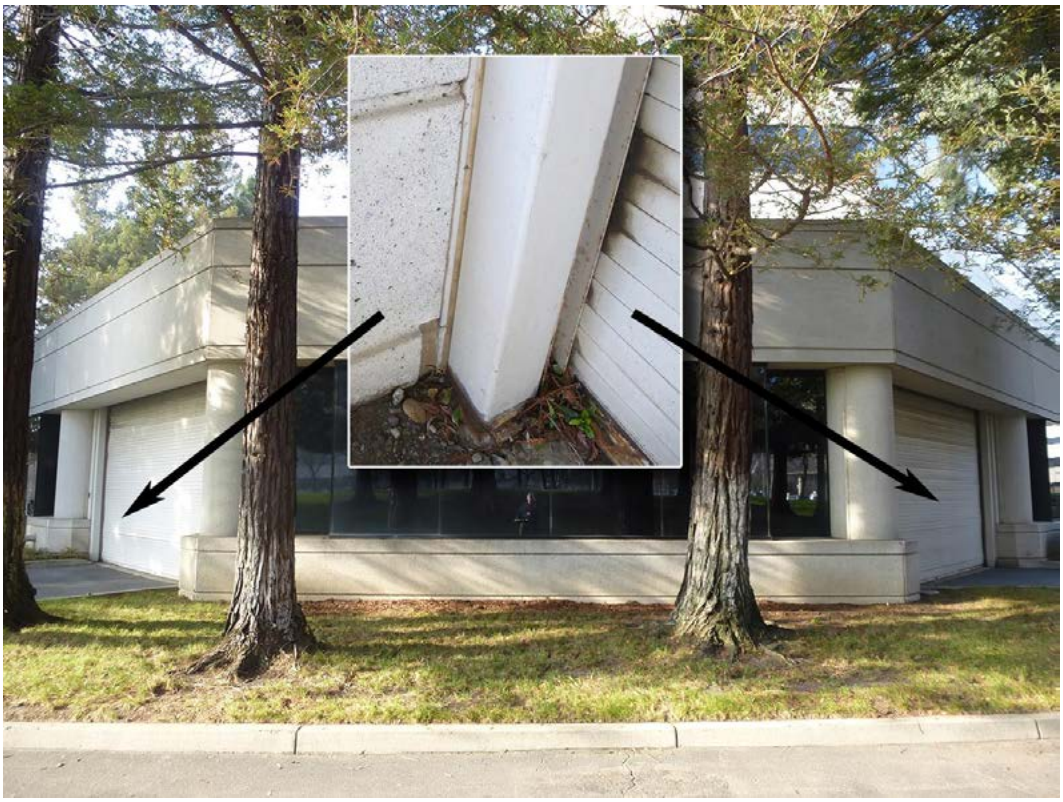
3.4.1 Loading Docks

3.4.1.1 Door and Doorframe Surfaces

The Building One loading dock needs restoration: roll-up and man door paint, roll-up door frame replacement, wall patching and coating, base joint restoration, handrail straightening or replacement and coating, corner angles and bumper hardware coating.

The Building Two loading dock is in better condition but some of the same services are called for. (The roll-up door frames and handrails at this location are not damaged.)

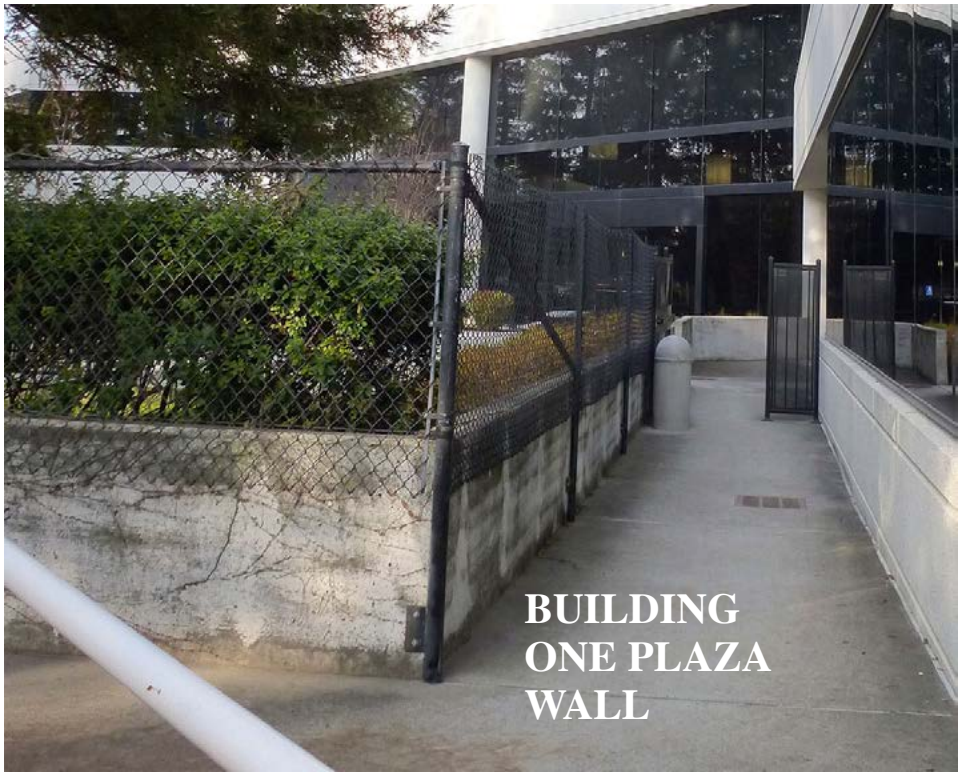
3.4.1.2 Vehicle Entrance

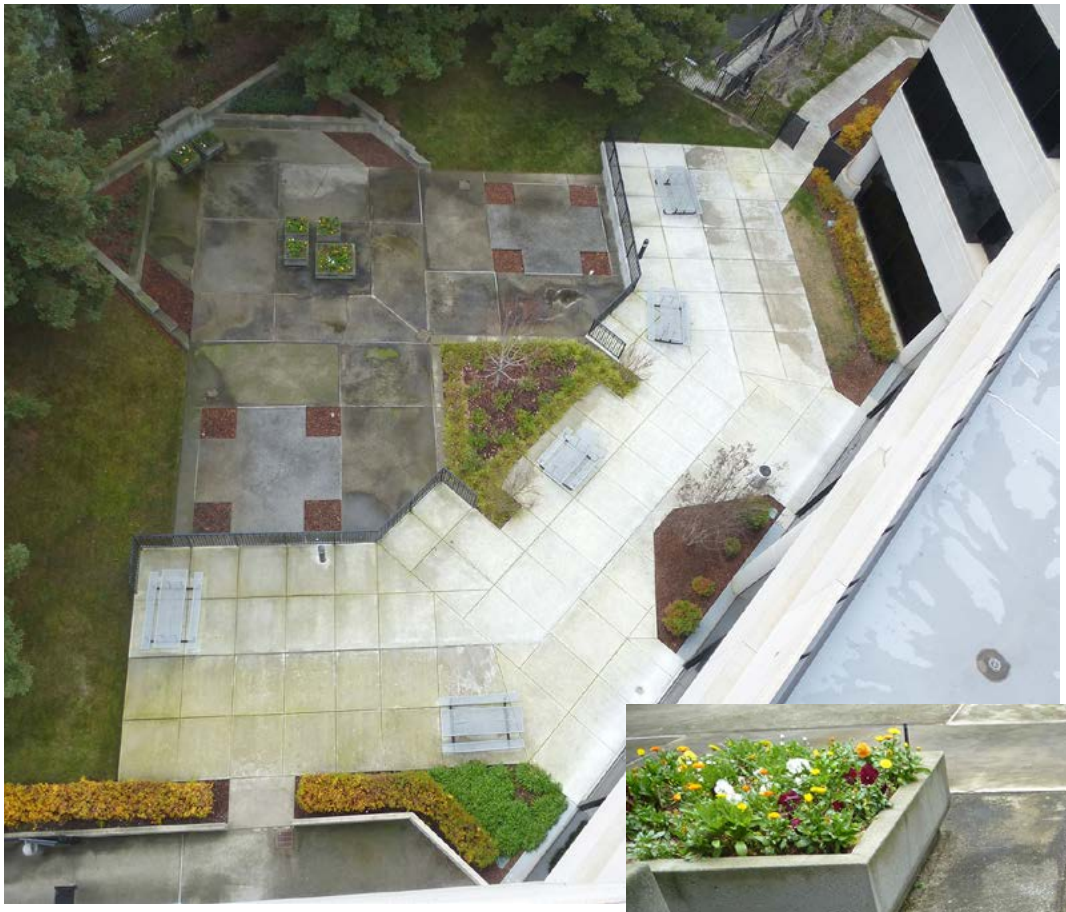


The roll-up doors at either end of the “Drive-up Claims Area” need fresh paint.

3. 5 Traffic Bearing Surfaces on Grade

3. 5. 1 Building One and Building Two Plazas





BUILDING ONE PLAZA

Building One Plaza walls need to be re-coated.

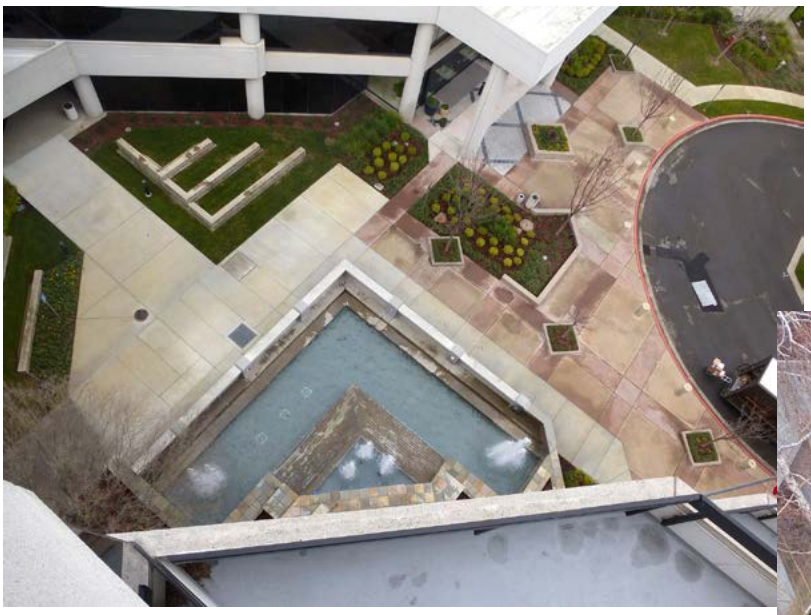
Building One Plaza needs, at a minimum, cleaning and sealing of all surfaces, including the planters, and restoration of all joints. These surfaces aren't in bad condition but there are cracks in some of the slabs and without remediation they will continue to deteriorate at an accelerated rate.

The plaza on the west side of Building Two is of a different design than the one at Building One and it is in slightly better condition but it too should have its surfaces cleaned and sealed and its joints restored.

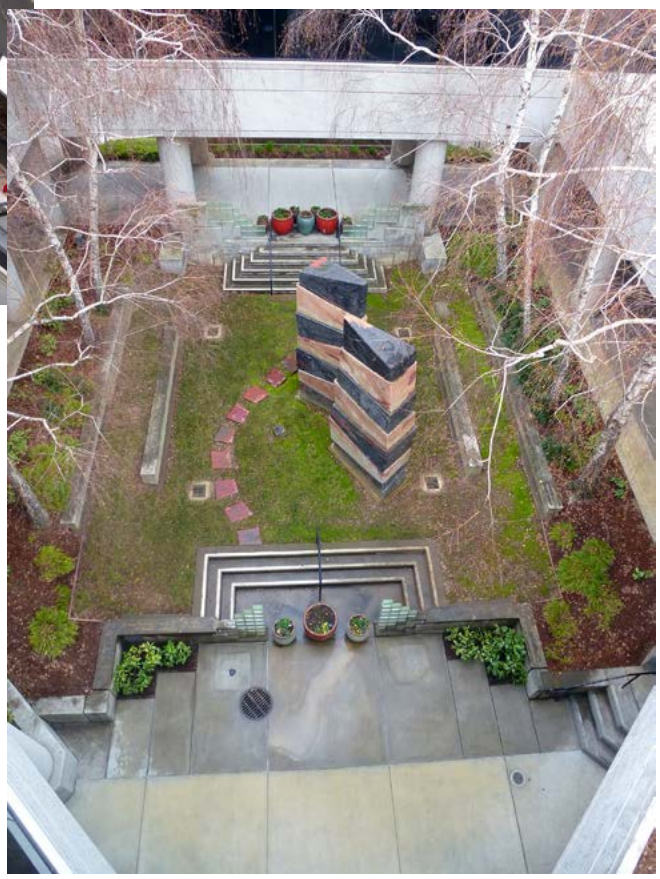
3. 5. 2 Entry Commons

The exterior, traffic bearing surfaces between Buildings One and Two has been cleaned more often than the Plazas so they are in better condition. These surfaces should be sealed. Fresh stain would enhance their appearance appreciably. The joints in these surfaces are in need of replacement. The fountain and planter surfaces should be restored and sealed as well and the joints in the fountain walls and planters need to be replaced.

All the surfaces in the sculpture garden should be cleaned and sealed and the joints in these structures restored. Although the sculpture is in good condition the artist should be consulted to offer advise on what should be done, if anything, to protect and preserve the piece. Mineral paint applied to the weathered, concrete elements in this area could be used to bring color and new life to the space. The artist or a designer could be consulted on this matter too. If these materials and colors were applied to the concrete surfaces in the Entry Commons the two spaces could be visually tied together.



ENTRY COMMONS



SCULPTURE GARDEN

3. 6 Insect Intrusion

During the period when Building One was vacant an infestation European Paperwasps or Western Yellow Jackets occurred. Ryan Abrahmson of Eco-tech Pest Control, Sacramento, 916-706-2242, has identified the species as paperwasps and said the problem was severe in the upper floors. To the present the problem remains a nuisance but a minor one. One gentleman, who works on the 4th floor, is allergic to bee stings. He was not available but, Kristy Tinsley, one of his coworkers said the problem has been remedied in Alta California's offices on the 1st, 4th and 5th floors. Alfonso Carmona, whose office is on the 1st floor verified that for his area. The only office where the problem still exists is on the sixth floor. Beverly McNeal is the occupant and she stated that during her 1st summer in the building, which was two or three years ago there were several bees in her office every morning but this summer she only saw two per week. There are none in the winter.

The steps taken to correct the problem have included those taken by the exterminator and also the sealing of potential entry points by the window cleaners and the building engineers. Rich Ludlum, the operations manager for the window cleaning firm, 2020 Commercial Care (916-484-2020), said that his crew has installed sealant where it has failed at various times since 2010 and that has resulted in a gradual, steady improvement. The building engineers have also installed sealant in some locations where the wasps or yellow jackets could have been entering the building.

During the survey it was discovered that the sealant that the window cleaners and the engineers installed was primarily to close weeps. This should not have been done and could have resulted in water getting into the building. Up until now water has not had to drain from the weeps so closing them has not had a detrimental effect.

Sealant has also been installed in the joints between some of the window frame components, which may also be an entry route for insects.

By lowering a remotely operated camera to the bottom of one of the windows in Ms McNeal's office on the 6th floor an opening in the frame perimeter joint was found. She said that at times the sill outside her office is covered with "bees". Some could have taken that path into her office.

Sealant restoration and installation of the proper material in the wall and window weeps will correct the insect intrusion problem completely.

OPENING IN 6TH FLOOR FRAME PERIMETER JOINT