

Building Envelope Maintenance Report

June 2006

**Norfolk House
1675 West 10th Ave.
Vancouver, BC**

Conducted by:

B E M C O
Services Ltd.
Building Envelope Maintenance

Introduction

We have conducted a building envelope maintenance review of Norfolk House located at 1675 West 10th Ave, Vancouver, BC. The review was conducted on June 29th & 30th, 2006 in order to evaluate the current condition of materials, and as the basis for the following observations and recommendations. This review was not invasive, and did not include the removal or destructive testing of any areas of the building. The review is intended to report the condition of materials visible at the time of inspection. It should be noted, that while every effort has been made to identify defects, we do not guarantee that every potential problem has been itemized in the review. When the maintenance work is conducted on this building any additional issues that might be discovered should also be attended to.

Overview

In general, the building exterior appeared in good condition. However, there are some exterior maintenance issues that should be attended to at this time.

This project consists of a three-story wood frame building clad with a rainscreen vinyl and masonry exterior with wood trims. Moisture that may find its way behind the system is allowed to drain to the exterior at the base of walls. Although rainscreens have a higher degree of forgiveness with regard to water intrusion than other systems, it is still important to minimize the potential for moisture to penetrate the cladding. The building is constructed over a concrete parking garage.

There are two types of roofing materials used on the project. The sloped roofs of the building are covered with asphalt shingles and the low slope (flat) roof areas are covered with a torch-on SBS membrane.

The ground level walkways and patios of the complex have been constructed using paving stones laid over a continuous waterproof membrane, and are typically drained at their edge or to internal drains. The upper balcony decks are finished with liquid applied deck membranes and drain over the edge.

The following information outlines the general condition of particular materials, as well as noting specific areas of concern. Photographs and elevation photos are included in the appendix.

Roofs

Low Sloped (Flat) Roof

The flat roof of the building appeared to be in good condition from a maintenance perspective. The torch-on membrane appears to be in good overall condition, as do the flashings, vents, penetrations, skylights and sealant. The slope of these roofs is good and it appeared that water would be directed to the internal drains. The drains, themselves, have debris present at their perimeters.

Sloped Roof Areas

The sloped roof areas were in relatively good condition at this time, however sections of asphalt shingles are starting to deteriorate in some locations and small amounts of moss is present on the north facing sections. The sloped roof area drains into a perimeter gutter system, which appears to require cleaning at this time.

The roof areas should be checked on a regular basis (quarterly) for ponding water, plugged drains or the presence of leaves and debris. Any irregularities should be reported to the appropriate personnel.

Balcony Decks, Patios and Walkways

The balcony deck surfaces are coated with a liquid applied membrane. Several of the decks are dirty and some have nails popping through the membrane or cracks at the perimeter flashing seams. The decks drain to gutters, which, like the others, also need cleaning.

The ground level patio decks and walkways have been constructed using paving stones and in some locations organic growth was present between the pavers. Plants or moss should be removed, along with any dirt or debris accumulating in these areas. The drains on the ground floor patio decks were clear and free flowing.

Regular cleaning of decks and balconies, not only helps to extend the life expectancy of the materials, it also provides an excellent opportunity for the owners to assess the condition of these areas.

It is recommended that plants and planters be kept from direct contact with deck surfaces, as they tend to retain moisture and increase the rate of deterioration. Also, mats that hold water can increase the growth of mold or mildew on the deck surface. Mats that are open or breathable are less likely to facilitate organic growth. It is important for owners to inspect the deck surface beneath mats, carpets or planters on a regular basis.

Windows

The windows are vinyl framed double glazed units with operable lights and vented along the sill through exterior weep holes. Overall, the windows appeared in good condition. At the bottom corner of some vertical joints between the window frames and trim boards the sealant was starting to separate. All weep holes that were inspected were clear. The sealed units appeared intact, and on those windows that were open, the gasket around the operable light was in satisfactory condition.

Weep holes in the window track should be kept clear of debris, and should be checked when cleaning windows.

Vents

The majority of the vents around this complex were generally clear. Regular cleaning is recommended in order to remove built up of lint in the vents and vent covers. Owners should be reminded of the importance of regularly cleaning their dryer lint traps.

Sealants

Sealant has been used in a number of locations on the exterior of the building, such as window perimeters, joints between dissimilar materials, wall penetrations, and the ends of saddle flashings. Generally, the sealant was in good condition with some locations where the sealant was separating or failing at these details around the building. These areas have been noted on the elevation drawings and should be repaired in a timely manner.

Residents should be instructed to check all easily accessible sealant on the exterior of their units on a regular basis.

Flashings

Flashings are used extensively throughout this complex in various locations such as window heads, windowsills, through wall, base and cap flashings. These flashings were in good condition with no signs of damage at this time.

Vinyl Cladding

Vinyl Siding constitutes the majority of the exterior cladding on this building and, as with the other cladding types on this complex, is constructed as a rainscreen. Vinyl has a good performance record in the field of the wall. However, detailing at penetrations and intersections with other materials is important for long-term performance.

Generally the vinyl cladding system on the building appeared in good condition with no bulges or damaged areas observed at this time. Also, the vinyl siding was generally clean and free of organic growth.

Masonry

The masonry walls have been constructed as rainscreen walls, with a vented cavity behind the exterior brick. Weep holes have been included at the base of walls in order to drain any incidental moisture that may make its way behind the brick.

Overall, the brick walls appear in good condition, however the grout is cracking where it meets the concrete window head in some locations. Even though the masonry walls have been constructed as a rainscreen and there is a moisture barrier behind the masonry, it is good practice to repair any cracks that may develop in masonry walls.

Wood Trims

Wood trim has been used around windows and on the fascias of the decks and roof areas. Generally the painted wood was in good condition with the exception that the paint was deteriorating in a couple of locations at the bottom of ground level units on the north side.

In order to protect wood, it should be kept clean, painted and sealed. It is important to repaint wood in a timely manner. Allowing old paint to crack, blister and peel permits moisture to penetrate the wood. This can lead to further paint failure, wood decay, and swelling or warping of the wood. Repainting should be considered when the exterior surface begins to show wear.

Parkade

The parkade was generally in good condition and clean with the normal amount of cracking present in the floor. None of these cracks appear to be active at this time. The ceiling has insulation sprayed on which looks in good condition, and there wasn't any evidence of active cracks.

Miscellaneous

Landscaping

The landscaping around this complex looks good and generally doesn't appear to be encroaching on the buildings. It is a good policy to keep trees and plant growth from contact with the exterior of the buildings. Plants tend to hold moisture, and reduce drying and should be trimmed to avoid contact with the exterior wall surface.

Wood Fencing

Although, not an envelope issue, it was noted that the paint was peeling in various areas of the wood fencing around the building.

Summary

In general, the building appears in good condition. However, some issues should be dealt with in order to maintain the exterior components of the complex.

The following is a list of the items to be attended to:

- Replace separated and missing sealant.
- Consider the addition of sealant end dams at windowsill flashings.
- Remove weeds and vegetation between pavers. (Owners)
- Repair deck surfaces where required.
- Clean deck surfaces where required. (Owners)

Appendix

- **Homeowner Inspection Information**
- **Photographs**
- **Elevation Drawings**

ON-SITE PERSONNEL / OWNER INSPECTIONS

Item To Inspected	Inspection Frequency	Inspect for
Roofing	Quarterly	A cursory monthly check is intended to spot physical damage or drainage problems. This check is purely a visual inspection.
Flashings	Semi annual	Physical damage. Look for flashing which may have been damaged or bent by gardeners, window cleaners or other operations around the building.
Decks / Drains & Gutters	Quarterly	Drain blockage, or physical damage. Individual deck drains and troughs should be checked frequently during the rainy season, and when debris is most prevalent in the fall. Check the membrane surface for cracks or splits when cleaning or sweeping. Check the soffit above for water stains.
Sealants	Semi annual	Look for damage or obvious sealant failure when cleaning windows or decks.
Paint	Semi annual	Observe condition of paint when cleaning windows or decks. Look for peeling or blistering paint.
Windows	Semi annual	Observe condition of hardware and weep holes when cleaning windows. Clear any dirt or debris from weep holes. Check sealant at mitered corners.
Vents	Semi annual	Regular cleaning of dryer lint screens will reduce the necessity to clean the exterior vent covers. Dirty or blocked exterior covers can lead to moisture accumulation in the vent pipe, and cause leakage and deterioration
Plants	Annual	Plants growing directly adjacent to or in contact with the building exterior can reduce the drying potential of the exterior cladding, and increase the likelihood of problems. Keep plants and shrubs away from exterior walls.
Doors	Annual	Doors should be checked in order to assess the hardware, and the perimeter seals. Poorly operating mechanisms or weatherstripping should be repaired or replaced.
Cladding	Annual	Visually observe the condition of the exterior materials, looking for any signs of damage or deterioration.

Notes:

Norfolk House Maintenance Review Photographs 2006

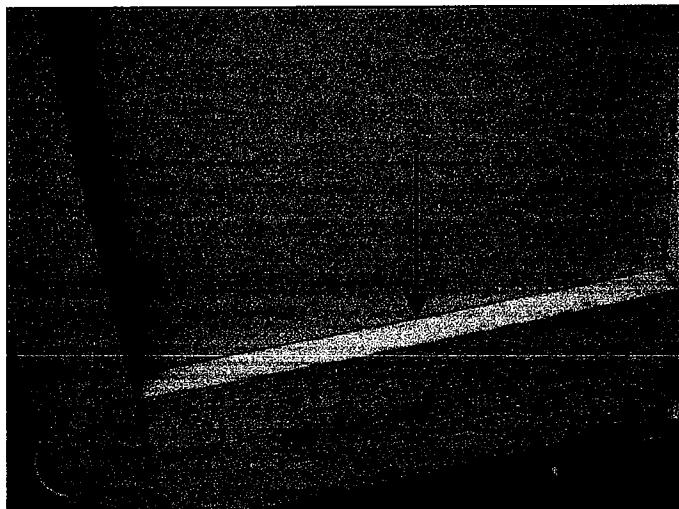


Photo #1- Sealant could be considered for the horizontal joint of the wood trim.

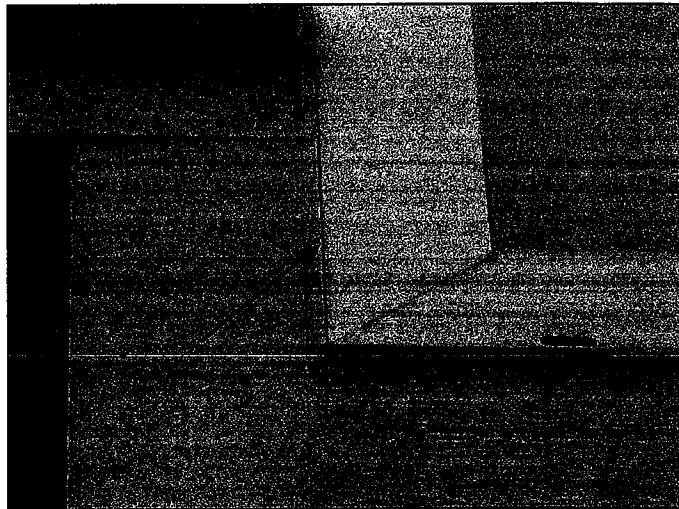


Photo #2- Sealant separating.

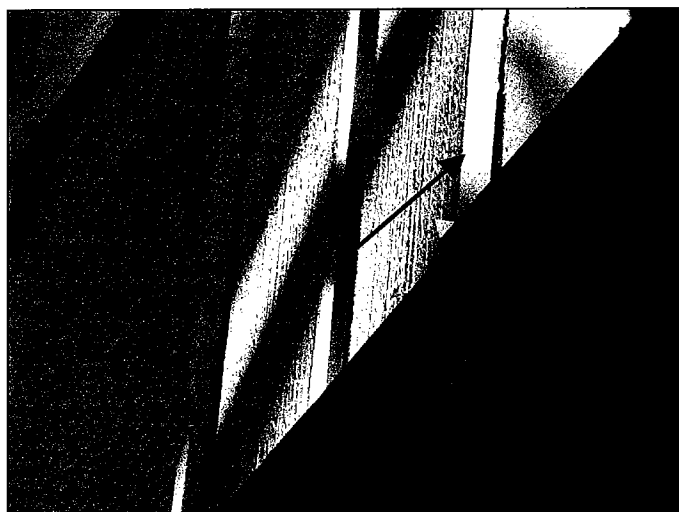


Photo #3- Wood trim detaching.

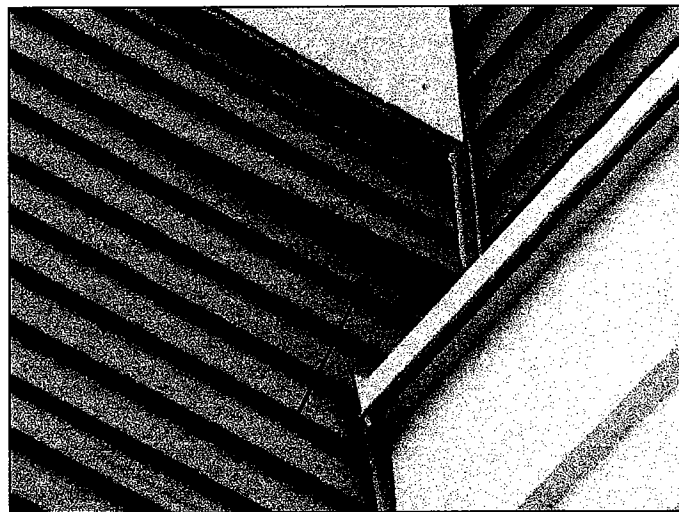


Photo #4- Siding detached.

Norfolk House Maintenance Review Photographs 2006



Photo #5- Paint peeling beside down pipe.

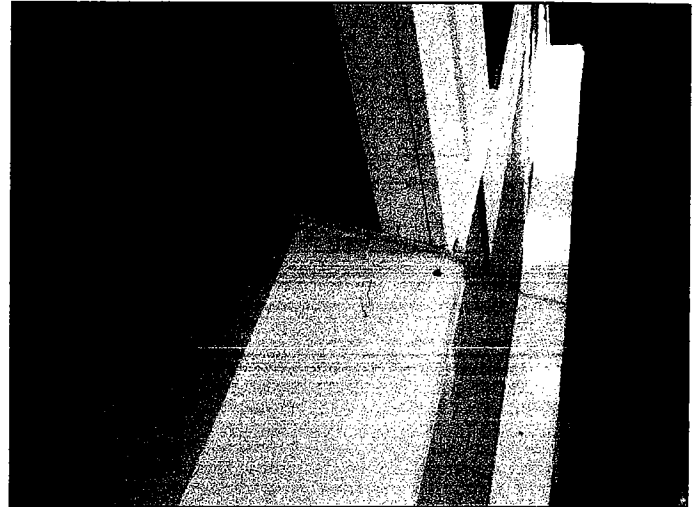


Photo #6- Missing sealant.

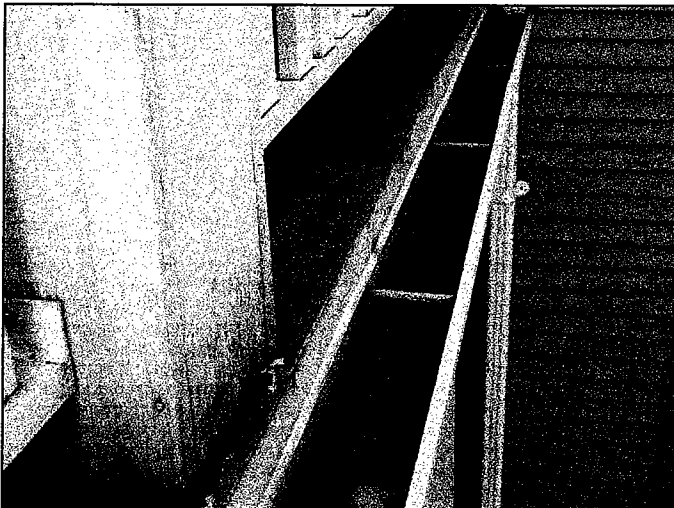


Photo #7- Debris present in gutter.



Photo #8- Deck dirty.

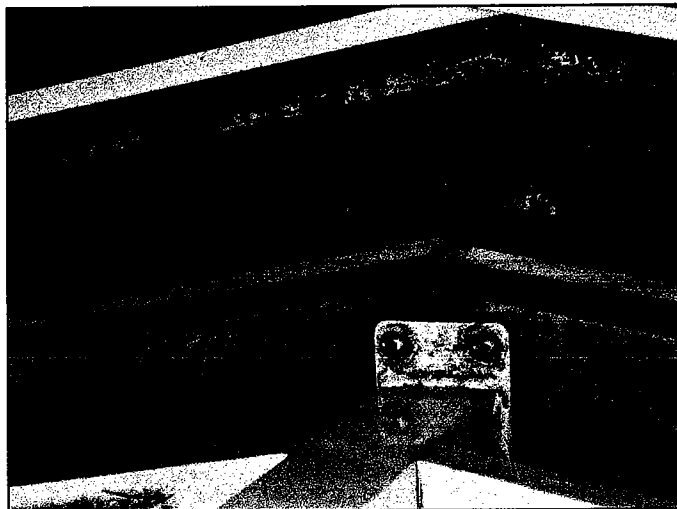


Photo #9- Gutter full of debris.

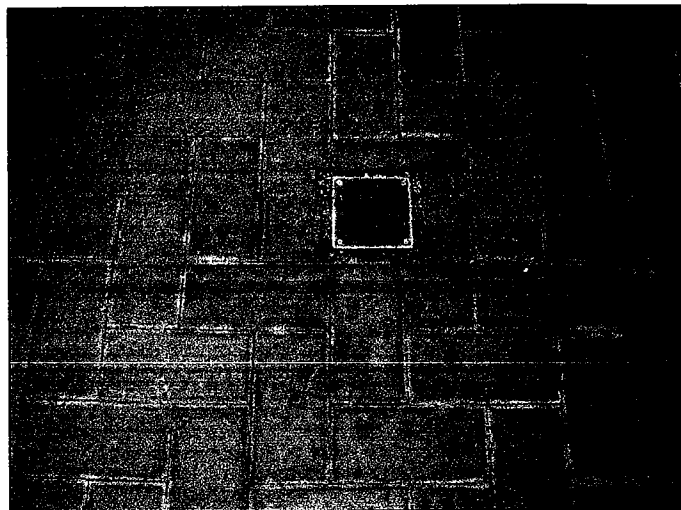


Photo #10- Ground level deck drains clear.

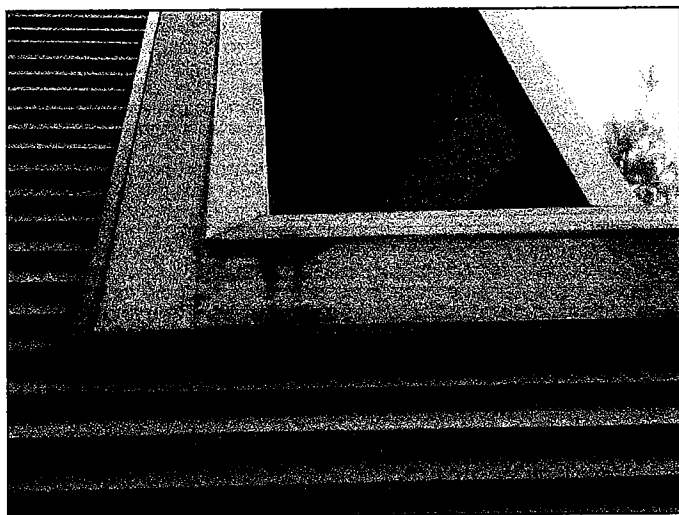


Photo #11- Algae present.

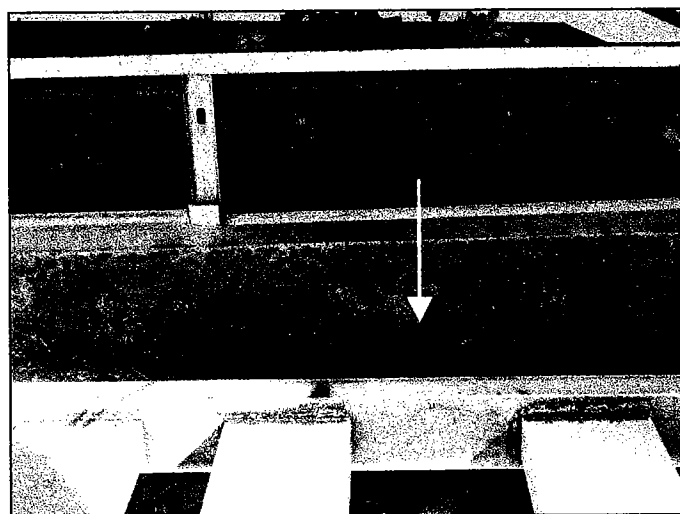


Photo #12- Deck membrane breached.



Photo #13- Paint deteriorating.

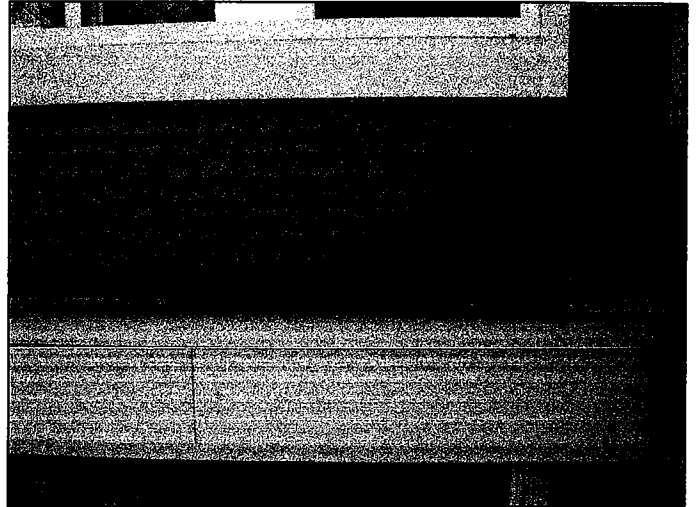


Photo #14- Flashing dirty.

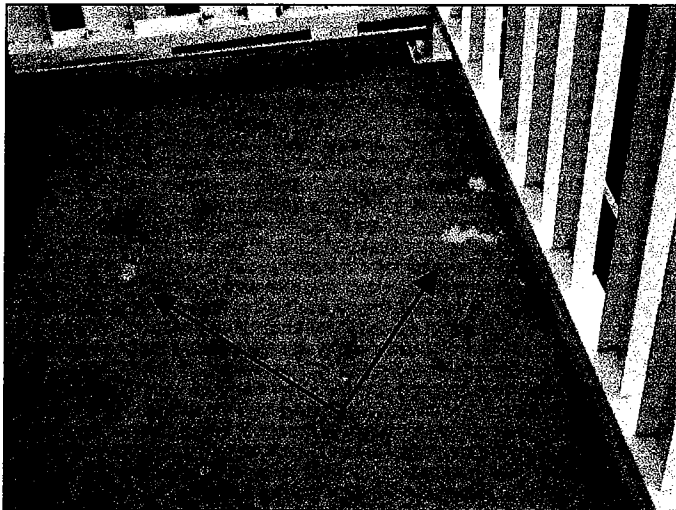


Photo #15- Deck membrane is peeling.

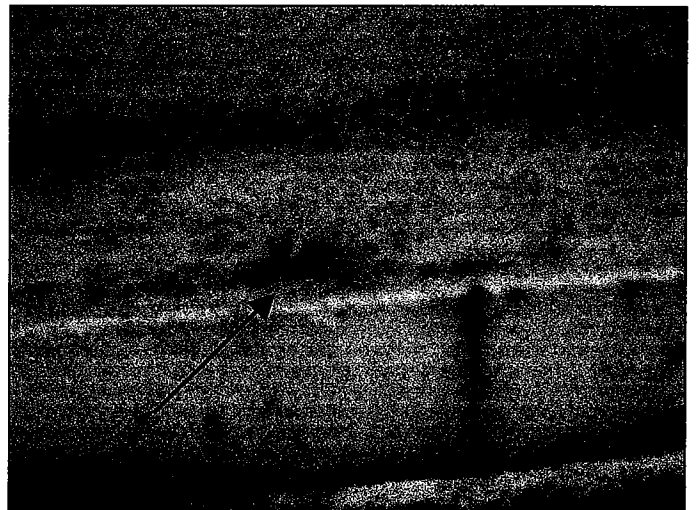


Photo #16- Nail popping through membrane.

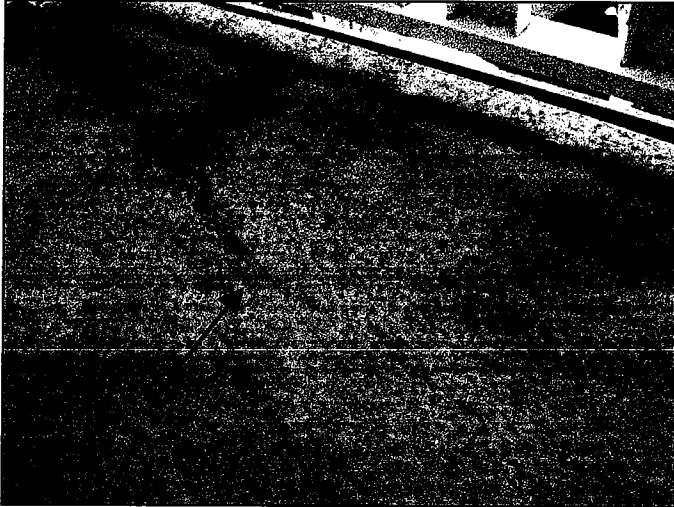


Photo #17- Crack in deck membrane.

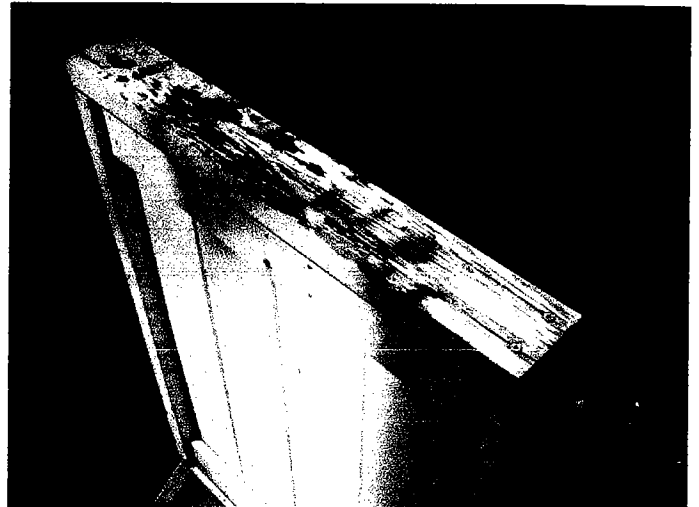


Photo #18- Paint peeling on fence and gates.

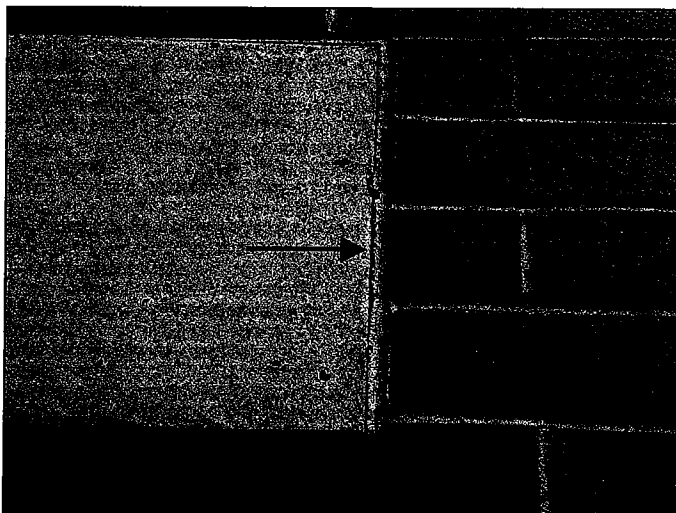


Photo #19- Grout cracking at concrete window-head.

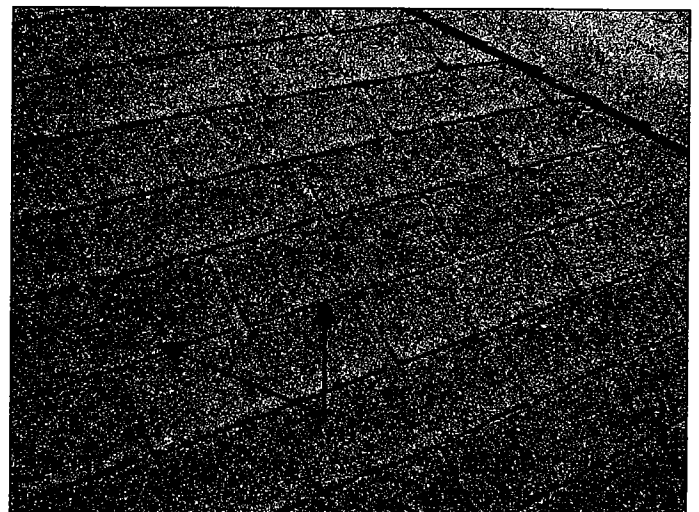


Photo #20- Roof shingles starting to deteriorate.



Photo #21- Moss present on North facing elevations of sloped roofs.

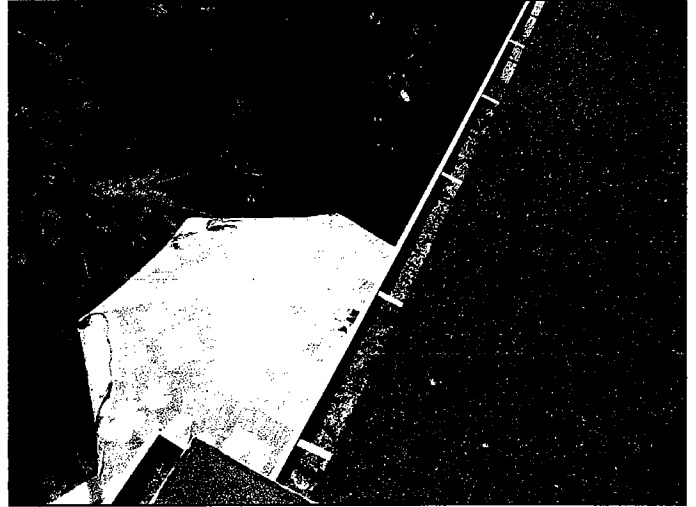


Photo #22- Gutters have debris present.

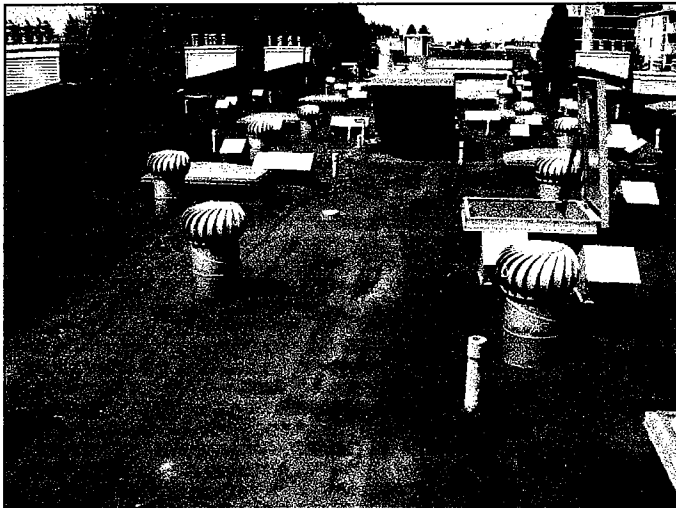


Photo #23- Penetrations in good conditions.



Photo #24- Debris present at perimeter of drain.

Nail pops through
membrane (PIC)
and membrane is
peeling (PIC)

Crack in
membrane

Sealant
separating

Flashing
dirty (PIC)

TOP OF FENCE LINE

TOP OF WALL LINE

Deck
dirty

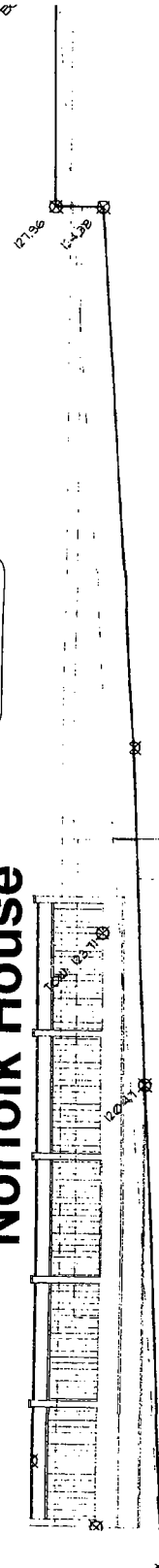
Deck dirty and
nail pops at edge
of deck

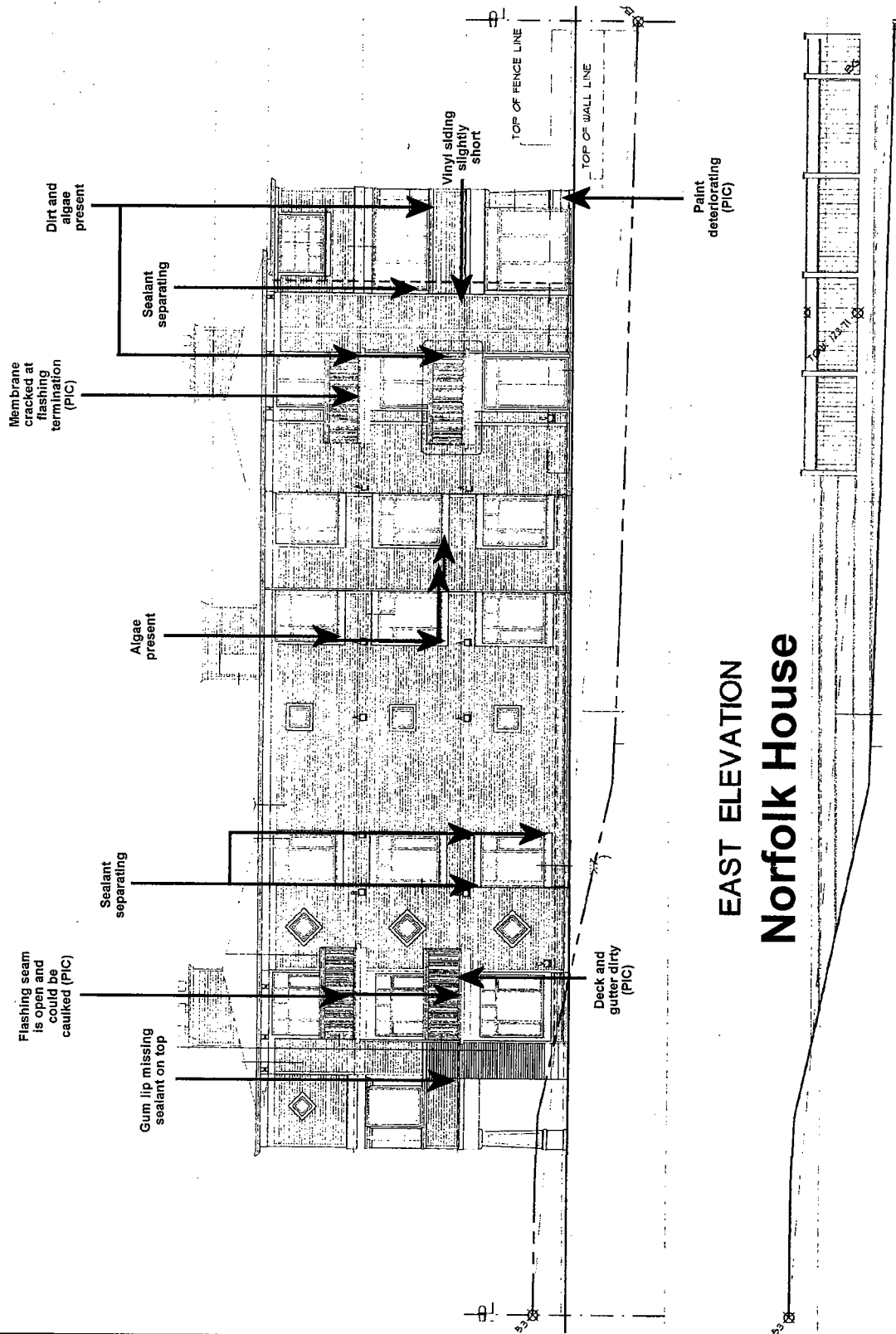
Sealant
separating

Deck membrane is
cracked and perimeter
flashing is lifting
(PIC)

Sealant in good
condition on this
elevation

WEST ELEVATION Norfolk House





EAST ELEVATION
Norfolk House

Thru wall flashings and gutters have dirt and algae present - most locations on this elevation

Sealant generally in good condition on this elevation

Some ground level patio decks have various amounts of organic growth between pavers

deck very dirty

Dirt and algae present at base of wood columns

Sealant separating

Sealant separating

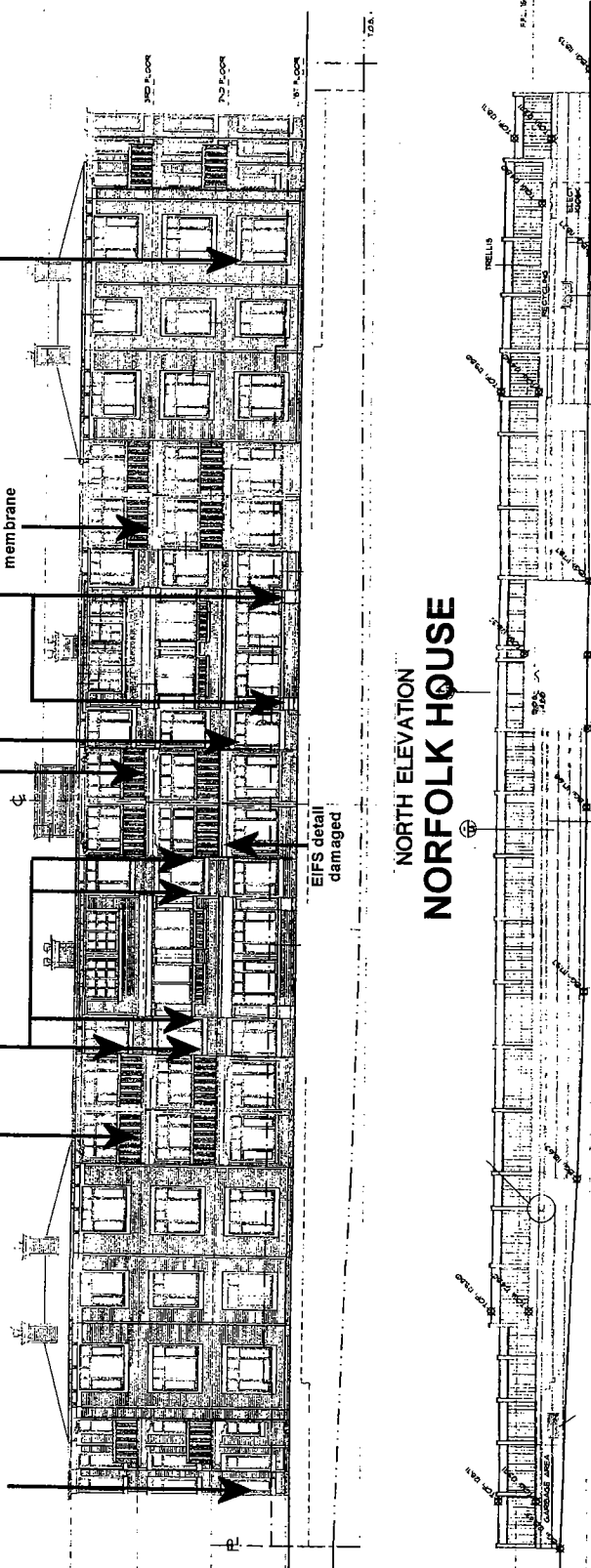
Sealant separating

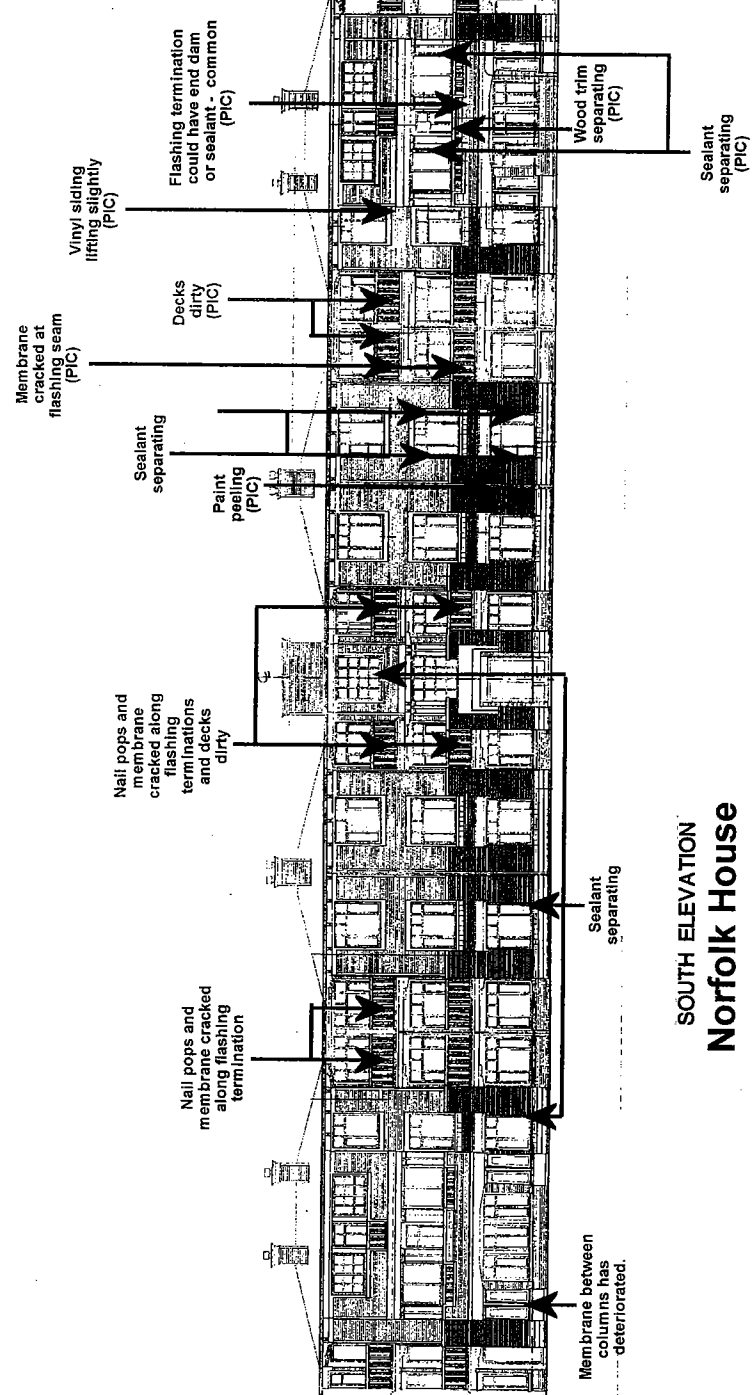
Sealant separating

Cut in membrane

EIFS detail damaged

NORTH ELEVATION NORFOLK HOUSE





SOUTH ELEVATION
Norfolk House