

DougLes Consulting Services Incorporated

April 14, 1999

914 Parklands Dr., Victoria, BC V9A 4L7 Phone (250) 380-6396

Roger Taylor
#417 545 Manchester Rd.
Victoria, BC
Via Fax # 383-9061

Attention: Roger Taylor

Dear: Roger,

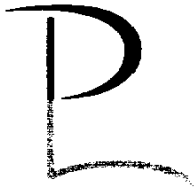
Re: Owners of Strata #2720's buildings located at 545 Manchester and Durban St. Victoria, BC.

As per your request I have given more consideration to the idea of maintaining the building until such a time as the strata is prepared to carry out a permanent solution involving a rain screen system.

There are numerous ways to reduce the water infiltration each of them with a varying degree of success. The degree of success will determine the length of time that you can postpone more extensive repairs. I have identified the four most obvious areas that require attention. They are the;

- decorative bands and flashings,
- balconies; including the railing connection and flashing,
- expansion joints in the stucco, and
- The stucco cladding and window details.

The time the mitigating work is to "buy" will determine the extent of work that I would recommend. For example a poor lap joint in the flashing could be cleaned and caulked. The life expectancy of this repair would be four to five years before the caulking would start to break down to the point that it would fail. Or, the flashing could be replaced correcting it with a life expectancy of twenty plus years before the flashing or surrounding material broke down to the point that it may fail. If the intended goal was to buy five or six years then caulking would work. If the intended goal was to last as long as possible then replacement would be advised. Note caulking can be done several times however each time can effect the efficiency.



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In this light I have provided two or three repair techniques for each problem area and given my opinion of the life expectancy of the work. I have also completed some rough costing on the work. When a decision is made on the method and extent of the work I can give more precise costing. Please note that no testing, formulas, or guidelines are available to determine life expectancy of the products and systems in these circumstances. The life expectancies in this report are based on my experience with the products available and used for this type of application.

The Decorative Bands

The decorative bands are a problem. They add details to the building including three bands of flashing to the entire perimeter. The bands are in close proximity to the bottom of the windows. The flashing profile at the windows was changed to allow for easy installation. The installation incorporated simple lap joints under each window. The lap joints rely on caulking to stop water. The continual expansion and contraction of the metal flashing has caused the caulking to break down and begin to fail. The flashing was installed with no slope. Settlement and shrinkage of the building has resulted in much of the flashing sloping back towards the building allowing it to hold water. Three solutions present themselves to contend with this problem

- 1) The flashings could be gone over, cleaned and recaulked. This would be the least expensive route and should extend the life of the flashing for another four to five years. The work must be meticulous. This method does not allow for correcting the slope.
- 2) The flashings could be removed, resloped, and replaced. This should extend the life expectancy some where between ten and fifteen years. The problem with this solution is that it does not address the proximity of the flashing to the windows. While the replacement design will address the slope and lap joint problems it is limited by the windows and does not contend with other problems related to the building.
- 3) The band could be rebuilt to a new design (see design attached). This design would in effect address all of the problems with the bands, eliminate one row of flashing around the perimeter and allow water that is infiltrating above the bands to drain off the building at the band level, reducing trapped water and allowing some drying.



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Cost for the above

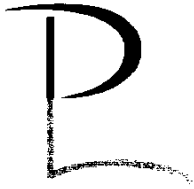
- 1) Re-caulk the corner of Hampton Court \$850 to \$1,100
Re-caulk both Hampton Court and Churchill place \$12,500 to \$15,000
- 2) Replace the flashing to the corner of Hampton Court \$7,500 to \$8,500
Replace the flashing to both Hampton Court and Churchill Place \$117,000 to \$125,000
- 3) Rebuild the bands to the corner of Hampton Court \$14,000 to \$16,500
Rebuild the bands to both Hampton Court and Churchill Place \$175,000 to \$200,000

* Note above prices do not include GST

The balconies

The problems with the balconies are that the initial design makes it difficult to install flashings to them in a good manor. The railing fasteners are allowing water to infiltrate past the stucco and, building movement has caused some cracking on the stucco corners. There are again three ways to minimize water infiltration

- 1) Recaulk all balcony flashings and railing fasteners.
This method may only be eighty percent effective as the details are difficult. The life expectancy would be four to five years until the caulking began to breakdown.
- 2) Remove the railings and flashings, install a peel and stick type membrane, then reinstall the railings and flashings.
This method would address the problem of difficult flashings by placing an additional membrane below them. It would not address some of the issues with the stucco corners and building movement. I would anticipate the life expectancy to be between ten and fifteen years.
- 3) Redesign and rebuild the balcony railings.
Eliminate the stucco corner posts and simplify the flashing details.
This method would be the best approach. It should be looked into at the time the building is redesigned for the rainscreen system. It would incorporate additional membrane beneath the flashing. The disadvantage of this approach is that despite careful planing the new railings would likely not work with the future rainscreen design. It becomes both costly and wasteful. I cannot recommend this option prior to the installation of the entire rain screen system.



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Cost for the above

- 1) Recaulk balconies to the corner of Hampton Court \$750
Recaulk all balconies to Hampton Court and Churchill place \$10,500 to \$11,500
- 2) Remove the railings,... to the corner of Hampton Court \$5,800 to \$7,000
Remove the railings,... to Hampton Court and Churchill Place \$63,000 to \$67,000
- 3) Redesign and rebuild to the corner of Hampton Court \$14,000 to \$16,000
Redesign and rebuild to both Hampton Court and Churchill Place \$155,000 to \$170,000

* Note above prices do not include GST

The expansion joints

The expansion joints can only be dealt with one of two ways, either caulk them, or remove them replacing only the required ones.

- 1) **Caulking the expansion joints.**
The caulking application does not lend itself to correct all of the concerns with the expansion joints. Cleaning of the surface in preparation is difficult by the nature of the area. The life expectancy of the caulking should be between five and seven years. This is extended from other areas as there is less expansion and contraction movement with these joints and the caulking is able to fill a void where it can be applied in a heavy manor.
- 2) **Removal and restuccoing.**
This is a good method of reducing infiltration particularly in the area of the first floor where these joints are a design feature and not necessary. The life expectancy of this repair would be twenty plus years. The joints that are removed would have the stucco replaced and a skim coat over the entire main floor area. The weak point of this repair is that the building paper and stucco is patched at every joint. It would be better to remove the stucco entirely and replace it with a drain screen system similar to the new design for the decorative bands. This may be overkill if the intention is to install a rainscreen system to the entire building within the next ten years.



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Cost for the above

- 1) Caulking the expansion joints to the corner of Hampton Court \$750
Caulking the joints to Hampton Court and Churchill place \$10,500 to \$11,500

- 2) Removal and restuccoing of the corner of Hampton Court \$4,800 to \$6,000
complete system to the corner of Hampton Court \$8,200 to \$9,500
Removal and restuccoing of Hampton Court and Churchill Place \$88,000 to
\$90,000
complete system to the Hampton Court and Churchill Place \$125,000 to \$130,000

Note above prices do not include GST

Stucco and window details

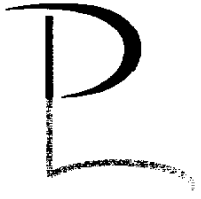
Stucco application, installation of the windows, flashings, and building paper is a large problem. The only way to correct it is to remove it and redo it. This of course will have to be completed at the same time as the work for the rain screen system. In the mean time the only short term work that would reduce water infiltration would be to caulk around all of the windows and seal any large cracks, holes, or other deficiencies in the stucco. This will not be very effective and will have a life expectancy of four to five years. Suggestions have been made for sealing the stucco with an acrylic or elastomeric coating. I believe this would be the wrong thing to do given the problem the building is faced with. Sealing the stucco would further reduce drying increasing the opportunity for rot, and microbiological contamination.

Cost for the above

- 1) Caulking to the corner of Hampton Court \$2,200 to \$2,800
Caulking to Hampton Court and Churchill place \$48,000 to \$55,000

General

The above work requires some preparation not included. The area should be cleared of any landscaping and or shrubbery that may become damaged. The building should be power washed thoroughly approximately two to three months in advance. It should be noted that the costs are calculated on an individual basis and when combined with other work there may be an overlap or savings. Any of this work can be completed in stages or to only the exposed areas of the buildings.



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Individual incidents of water infiltration

Entrance to Hampton Court.

The water leak here is likely a plumbing problem. As such I recommend that we remove the back of the cabinets in several units to expose the plumbing and allow us to locate the problem.

Unit #104 Hampton Court

The problems in this unit are almost certainly related to the flashing above the decorative band and the balcony above theirs. This is in the area most likely to have some form of work carried out in the near future. I believe that work completed will reduce or stop the water entering for the life expectancy of the repair option chosen. This area should be monitored as an indication of how that repair is functioning.

Unit #304 Hampton Court

Again as in #104 above I feel certain that the problems here will be addressed with the repair work. The water is most likely entering through a flashing detail although the window on the fourth floor could also be the source. I recommend completing some of the work outlined in this report dealing with the flashings, balconies, and windows.

Unit #306 Hampton Court

The water infiltration to the patio door is related to the deck and deck flashings of the unit above. I recommend that the flashings and the fasteners on the deck be cleaned and re-caulked. The other two are likely related to the sprinkler system. They are dry now and should be painted over so that the owner can monitor them for further problems.

A separate problem not related to this report is that the drywall is damaged in the bathroom apparently due to a leak from the unit above. While I did not check into this closely I thought I would mention it here. The cause of the water problem upstairs should be investigated so that we can be sure that it was corrected. Then the drywall in this unit should be repaired.



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Unit #402 Hampton Court

I believe this is a problem with the window and stucco installation. It has not occurred since the latter part of December 1998. This would indicate that it was a high wind and directional water problem. I would recommend caulking around the window as a short term solution. The chances of success are uncertain.

Unit #404 Hampton Court

The owner of this unit has informed me that there are no problems with water that they are aware of and that they had not reported any. They are concerned however with the repair work that will be done around their unit. They work a significant amount of night shifts and the noise will affect their ability to get a good days sleep.

Unit #407 Hampton Court

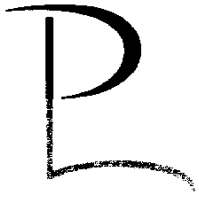
The leak in this unit is on the ceiling by the fireplace. The chimney looks fine and the roofing around it appears to be good. I recommend that the water stain be painted so that if this happens again it will be obvious and I could be contacted immediately for an inspection. This may be a directional wind and water problem. Some times the best chance for me to identify the exact source is to be on site while or shortly after the leaking has occurred.

Unit #208 Churchill Place

The leak in this unit appears to be related to some flashing and stucco problems above the patio door. This can be seen on the video that accompanied our first report. There are also some concerns with the fasteners related to the deck railing. My recommendation is to caulk the area well and seal and paint the water stain. If the problem persists we may have to remove some drywall and or stucco to investigate it better. This work should be done while it is actively leaking.

Unit #405 Churchill Place

The rooftop ventilator is as Roger mentioned the likely cause of this problem. Inspection of the roof and the ventilator reveals nothing. There are many areas relying on caulking that could be failing. This could also be a condensation problem with water condensing on or in the duct work and dripping down. My recommendation is to seal and paint the water stains and wait for a reoccurrence. If it reoccurs then I can be notified and have a chance to look at it while it is wet and when I know the type of whether that the building was subjected to at the time.



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Unit # 410 Churchill Place

This unit has a problem with both the corner post of the balcony and the membrane being cut. My recommendation is to remove the railings as required, remove the stucco around the corner post, and assess the damage. If the damage is as I suspect there is a good chance repairs can be complete without replacing the vinyl decking. If on the other hand the damage is worse than it appears the repairs could cost up to \$3,500.00. This should be done once the strata has made a decision on the decks so that any other work can be carried out at the same time.

Conclusion

This report is based on the fact that the Strata is going to proceed with a complete rain screen system to correct the problem in the future. Given this scenario the question is; when would the rain screen technology be implemented and how long does the Strata wish to maintain the existing system? If the Strata intends to implement the rain screen work in the next six to ten years then I would recommend the caulking approach. If the intention is to put this work off for longer than ten years I would recommend more extensive work. In either case I would complete a test area first. As we have looked at the southwest corner of Hamilton Court and it appears to be experiencing most of the infiltration problems it would be a sensible starting area. With that area completed then a proper tender process could be carried out for the balance of the work. It should be noted that the repairs outlined in this report are only a portion of the maintenance plan required to slow down the deterioration of the building prior to the implementation of a rain screen system. Below I have summarized the expenses for a five to six year maintenance program and for a ten to fifteen year maintenance program.

Five to Six Year Maintenance Program

Corner of Hampton Court

Decorative bands caulking	\$1,100.00
Balconies caulking	\$750.00
Expansion joint caulking	\$750.00
Stucco and window caulking	\$2,800.00
Power washing	\$500.00
Design work	\$0.00
Supervision	\$472.00
Annual reviews (6)	<u>\$1,000.00</u>
Total	\$7,372.00



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Both Buildings. Hampton Court and Churchill Place

Decorative bands caulking	\$15,000.00
Balconies caulking	\$11,500.00
Expansion joint caulking	\$11,500.00
Stucco and window caulking	\$55,000.00
Power washing	\$10,000.00
Design work	\$1,000.00
Supervision	\$8,240.00
Annual reviews (6)	<u>\$4,000.00</u>
Total	\$116,240.00

Ten to Fifteen Year Maintenance Program

Corner of Hampton Court

Decorative bands "rebuilt" #3	\$16,500.00
Balconies "remove and reinstall" #2	\$7,000.00
Expansion joint "complete" #2	\$9,500.00
Stucco and window caulking	\$2,800.00
Power washing	\$500.00
Design work	\$850.00
Supervision	\$2,972.00
Annual reviews (6)	<u>\$1000.00</u>
Total	\$41,122.00

Both Buildings. Hampton Court and Churchill Place

Decorative bands "rebuilt" #3	\$200,000.00
Balconies "remove and reinstall" #2	\$67,000.00
Expansion joint "complete" #2	\$130,000.00
Stucco and window caulking	\$55,000.00
Power washing	\$10,000.00
Design work	\$850.00
Supervision	23,142.50
Annual reviews (6)	<u>\$4,000.00</u>
Total	\$489,992.50

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I trust that the above repair or maintenance options give the Strata the information required to take the next step. If there is something that is not clear or you required more information on please let me know. The final page is the design change for the decorative bands. Although not shown, part of this design would include lowering the top 2 x 4 to create more space between the band and the bottom of the windows. The top of this detail could also be used for the lower band.

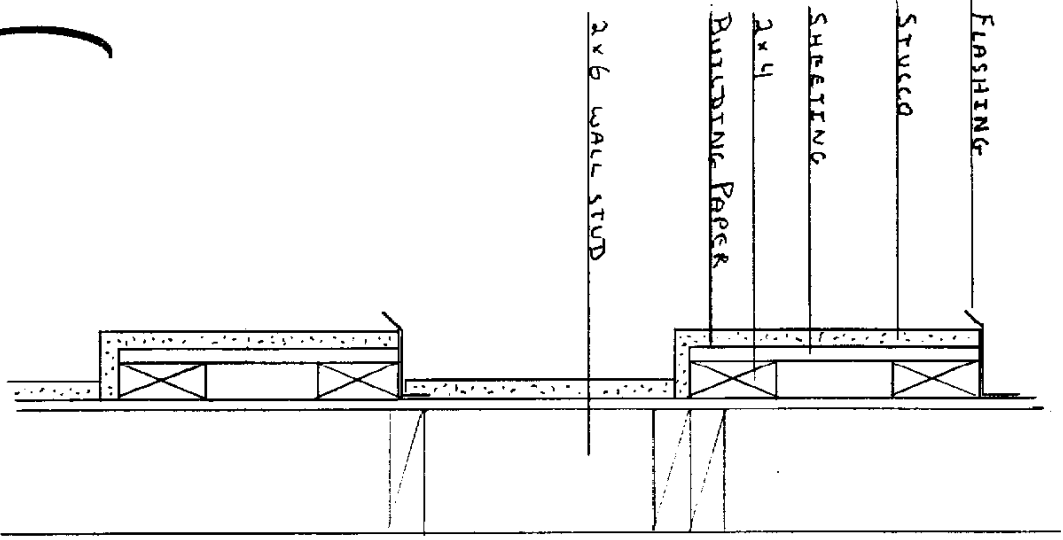
For further information or clarification please feel free to call me at 380-6396 or alternatively at 384-1390

Yours truly,

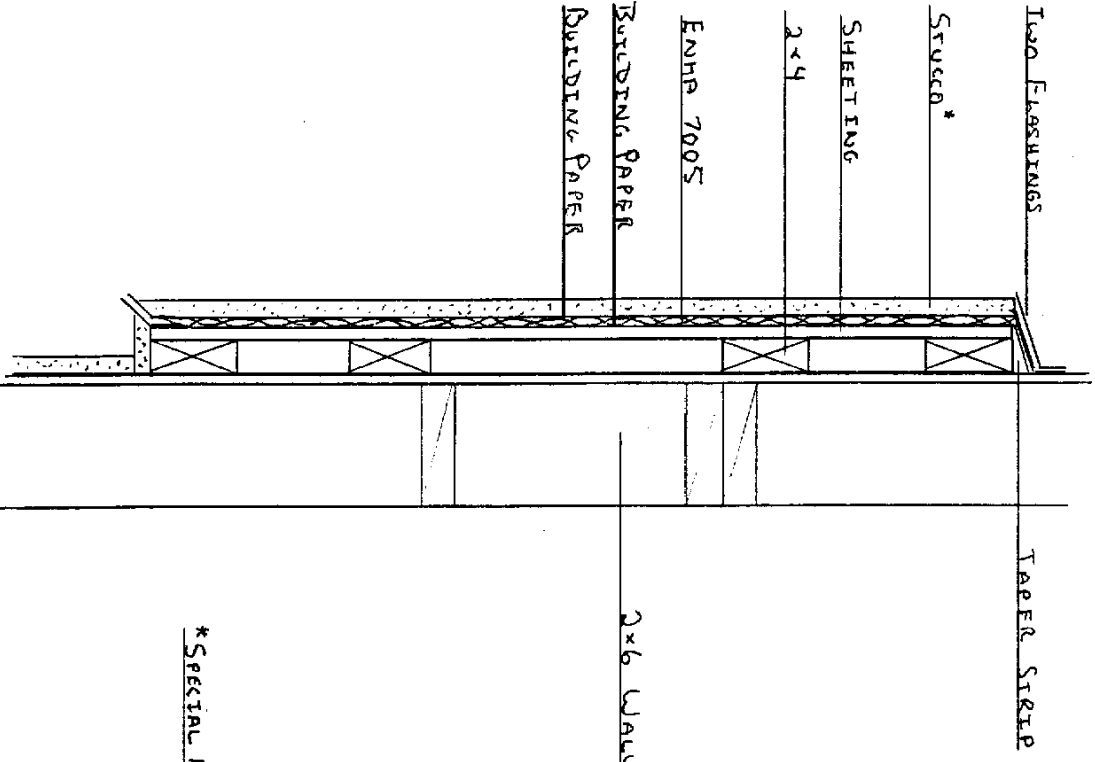


D. A. Downs
Per DougLes Consulting Services Inc.

HAMPTON COURT + CHURCHILL PLACE



EXISTING BAND DETAIL



PROPOSED BAND DETAIL

* SPECIAL MIX

PL