



NEWSLETTER

MAY, 2010

CS99.11.05 GARDEN PATIOS CAN RESULT IN A PARKADE WATERFALLS



This 44 unit, 4 storey, frame, apartment complex, which was approximately 5 years old at the time of the site survey had water seeps into the parking garage under the north west exhaust fan. At the time of this visit the moisture content in the wall was high.



Drain pipe was capped at the North West corner of the patio of suite 109 next to the exhaust fan in question. In the parking garage, the drain pipe in the west wall (on the same wall as the fan) next to the fan has been capped and is lower than the rest of the drains that come out of that wall.

The retaining wall next to the walkway in front of the patio of suite 109 is bulging and shows signs of high water volume in the earth behind it at times. It should be currently dealt with in order to assess the future cost of restoration of this wall.

The patio and walkway to the patio of Unit 109 will have to be excavated and the organic soil removed and replaced with road mulch. The owner has to re-level his patio slabs frequently because of sand washing out and settlement under them.

The actual solution to the problem cannot be determined until the area is excavated next to the fan and, depending on the situation, there can be several causes with remedial solutions. The first step is to determine if the drain near the patio can be utilized and we assume it can be.

There is a history forming regarding surface drainage around the perimeter of the building especially where there are main floor garden patios over the underground parking. There is or has been a problem with water pooling on the patios, running toward the building, or entering the suite or underground parkade in over half of the main floor units. Water will take the path of least resistance and, when obstacles are put in the way or it has a natural path to flow, it will pick up speed and momentum along the way.

BUILDING DESIGN

An architect's dream can become an owner's nightmare. This is very true especially here on the Lower Mainland. Our climate is not an average climate but it is a very damp and wet climate whereas most building designs are aimed at drier climates. This is quite evident today with the "leaky condo" problems that are being experienced throughout the Fraser Valley and Greater Vancouver areas. This building is no exception. The original design probably showed lush patio gardens and was conceived in a drier climate.

TERRAIN

The terrain is another factor here. On the west side it has a steep hillside in near proximity to the building which would cause a natural runoff of rain water towards the building. This would tax all existing drains in that area and any type of obstruction could divert the water elsewhere. The east side has a natural runoff away from the building because these patios are on a higher level however most of these patios have a raised permanent garden on the outside edge of the underground parkade which traps water on the patios and prevents run off over the side.

ORIGINAL CONSTRUCTION

When the building was originally constructed, it probably had sufficient drains installed to handle all the water that would accumulate on the patio surface. The surface was probably finished so that it sloped towards these drains. Although there are capped holes in the underground parkade ceiling, the original drainage was considered sufficient by building code and passed by the municipal inspectors as sufficient. They would have been approved before any gardens were in place and the inspector's probably did not know about the possibility of the current gardens being constructed. The capped holes in the ceiling of the parkade were probably for future use if required.

So let's look at what can be done from a simplicity point of view. Here are some areas to consider before trying affecting any repairs that are currently around the \$ 10,000 per patio at this time. Review these suggestions before proceeding further.

LOSS PREVENTION & REMEDIAL WORK

Remove any form of covering such as indoor / outdoor carpeting, plywood flooring, and vinyl sheeting, etc. so that all water can penetrate the surface of the patio.

Consider removing the patio stones and utilizing the roof of the parkade as a patio. This could only be considered depending on the depth of the fill under the patio stones. Or

Remove the patio stones, fill, and sand. Construct a cedar deck on top of the roof of the garage. Use cedar and not the "treated" lumber you can find at most lumber yards as the "treated" lumber is treated hemlock and not cedar.

Consider removing the permanent gardens and replacing them with large concrete planters rather than current construction. The large concrete planters can always be moved to facilitate access to any area of the roof of the parkade. Existing vegetation can be transplanted.

The above suggestions should be considered before any more repair work is completed. It gives the strata council

a loss prevention program and an avenue to follow for future councils as this drainage problem can continue on an ongoing basis if it is not addressed at this stage. The retrofitting of these patios can be done over a period of time as required.

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