

Quietwater Homeowners Association Common Area Buildings Repairs and Maintenance

1. Gutters and downspouts need to be free-flowing and clear of debris. In general, I believe downspouts that enter into pipes that go underground are not good in our area for numerous reasons. First, organic and other material quickly clog pipes. Second, water table levels with our volume of rain results in significant soil movement. The ground movement physically moves the pipes, oftentimes resulting in reversing the direction of flow and or cracking them. Third, organic growth moves underground pipes. Roots from trees and shrubs in the path of pipes can lift, move, crack and ultimately enter pipes. Lastly, most pipes do not daylight properly which means the outlet area is free and clear of any obstacles including the water table. Drain pipes that exit into catchbasins that are full of water do not properly drain as a result of hydrostatic back pressure. They may appear to be fine in the summer when tested with a hose but are completely worthless when needed in the rainy season. Most of the pipes into which the existing downspouts currently flow are not functioning. Consequently, the gutters overflow. The result is upsplash and overflow staining that is visible on the siding and/or siding failure. All underground drains should be tested to see where they exit or daylight. Any and all that are not functioning or would not function properly because they are lower than the water table, should be abandoned and instead directed overground away from the structure to an area that will sufficiently collect and distribute the water elsewhere with directional elbows at the base of the downspout. Any pipe that continues to be in use must be easily viewable at the input and output point to easily assess whether it is functioning properly
2. Gutters must be properly sloped AND have adequate outlets. There are a number of gutters that are sloped opposite the downspouts in the LCA's and consequently overflow when it rains even lightly. All gutters should be sloped in the direction of the primary direction of intended outlet flow. Additionally, all long runs should have more than one downspout – even if it seems like it is “uphill” of the slope. The larger structures occupy so much square footage that a small 2”x3” single downspout is simply inadequate to accommodate the water that accumulates. ALL downspouts should be directed away from buildings with proper elbows to prevent undermining the structural support posts and/or footings. Oftentimes gutter guys who are in the business to make a quick buck will not provide adequate downspouts. My rule of thumb is a maximum run of 25 feet per downspout. The key is to move as much water as possible away from the building as quickly as possible. The worst gutters are: the road side of LCA 2 by the dumpsters; the back side of LCA 1 with the garden shed and the left side of LCA2 with the small shed gutter tied in with the main gutter and downspout.
3. In my opinion, it should be illegal to do what is referred to as a re-cover on a roof at the coast – not just a code issue. International Building Code allows for up to three layers of roofing but only if the existing roof meets certain criteria. From the repair work I have already performed for the Association, it is readily evident that the roofs DID NOT meet the most basic criteria which is that the base layer (paper) must not be compromised. Consequently, the re-cover is contributing to ongoing deterioration of the physical

structures including work recently completed. The root causes of the roof failures were not corrected – they were simply covered up. Specifically, the original tar paper at the lower eaves and on the edges has failed. The lack of rake and eave flashing permits water infiltration and capillary draw of water into the roof structure (tongue & groove fir “car decking”). I urge the Association to reject any temptation to “save” money when addressing roof replacement. In general, roofing life will be at most half of the rating specified by the manufacturer. In other words, a 50 year roof will be good for 25 years, 30 for 15, etc. This is a simple matter of physics. Products are tested with a specified rainfall of about 30” per year. Yachats averages around 87 inches. Every time it rains, granules are released from the roofing and expose more of the shingle to damaging elements including UV rays, wind and water. In a re-cover situation in our high moisture environment, the lower levels of roofing that become saturated effectively boil as the sun comes out and heats the roof. As that moisture attempts to escape, it damages the layer above and reduces the life of the newer roof by at least 50%. Consequently, the “cost savings” to re-cover results in a real cost of a premature replacement at around 12 to fifteen years (oftentimes even less) on a fifty year roof. This is bad for owners and even worse for the environment. This does not even consider the building damage cost. Currently, I believe the roofs on LCA 3 and LCA 4 are beyond their economic life. They should be replaced before further building damage occurs and in no way should the Association allow a contractor do anything less than a completed tear off and the new roof should be applied using stainless steel flashings and fasteners without exception.

4. Eliminate moss on roofs as quickly as possible before large build-up. Most roofing comes with algae and moss inhibitor imbedded in the shingles. Unfortunately, these chemicals are washed away with each rain and as mentioned in #3 above, they are released more quickly as a function of higher volumes of water flowing over the shingles. I have researched numerous products and have concluded through discussion with Oregon State University that the best overall solution is regular application of zinc sulfate. The zinc strips that are currently applied at the ridge of some of the structures works fine up higher on the roof but dissipates to levels that do not inhibit moss growth somewhere between eight and twelve feet from the zinc. Consequently, it is still necessary to augment the zinc strips with an application of something that inhibits growth while at the same time is sensitive to our environment, people and pets. Zinc sulfate meets all of these criteria, however it is necessary to apply on a regular basis as it too will get washed down by rainwater. Another downside to the zinc strips is that they are face-nailed so we often see leaks around the nail penetrations that allow water infiltration from the ridge all the way down the roof under all the layers of roofing and paper. Application of zinc sulfate is recommended as a part of regular maintenance on all common buildings.
5. We have already repaired many of the barge rafters (exposed boards on the gable or sloped ends of the buildings). Most of this damage is directly attributable to the lack of rake flashing and drip edge metal in addition to the failed tar paper underneath. Water “rolls” around the edges of the shingles and makes direct contact with the trim boards that are attached to the barge rafters that are attached to the end grain of the car decking roof structure. All of these connection points are raw, wood-to-wood contact

(except where we have done repairs and applied coatings prior to reconstruction). Even with careful pre-coating, the moisture that stays in contact with these products is very damaging and will even break down the coatings, particularly at the lower eave level as gravity pulls the water downward. Consequently, the repair work will fail again until the cause of the problem is addressed. Rake flashing and drip edge are essential components to a proper roof in our environment. The rake metal reduces the possible side wicking of water onto the raw wood components on the side while the drip edge reduces water contact at the eave or gutter edge of the structures. Some “old school” contractors believe this is a waste of money. Those who have adopted Building Science concepts understand that the physical properties that make up the molecular structure of water cannot be overcome – they are simply a component of the laws of nature. Application of proper flashings helps to significantly reduce water contact with structural components in the man vs. nature battle to preserve and maintain structures. Since, the existing top layer of roofing was done within the last ten years and is in relatively good shape, it is difficult to suggest removal and replacement this early into its life. However, I strongly urge members of the Association to examine the corner of LCA 2 nearest the dumpsters to see the damage that is occurring. You can lift the last few courses of roofing very carefully and see this for yourselves. At some point, the difficult decision will need to be made to proceed with a premature replacement of the roof in order to prevent more extensive and expensive building damage.

6. Several years ago, I advised the Association to eliminate vegetation around common area buildings. For the most part this has been done however I will repeat the importance for those who may not know how critical it is to maintain this vegetation-free zone. Vegetation captures water that transfers to wood and other building products very easily. Even a small blade of seemingly harmless grass can keep enough moisture against wood for the wood to begin to fail either through dry rot or entertaining insect activity. Vegetation removes coatings (paint, stain, granules on roofs) as it moves in the wind which ultimately allows for water infiltration, provides an interstate highway system for insects or even separates materials as it grows between layers of structures. In addition, trees that overhang buildings not only drop leaves or needles, they often foster an environment that encourages moss growth including starting much of the growth as moss spores are ejected from the trees during a moss bloom. This is not a suggestion to denude the property of all vegetation, rather to manage vegetation in a manner that protects the structures while providing a healthy and attractive environment. Tree limbs need to be cut back so as to not be in direct contact with structures (including under windy conditions). All forms of vegetation should be a minimum of 12” or more away from any part of a structure at the base. Structures with nearby trees need to be treated more frequently with inhibitors to prevent moss and other organic growth activity. Further, the structures should get a periodic bath which is to say a careful, periodic pressure washing.

