



MORRISON HERSHFIELD

Arbor Roses Assessment Summary

This summary provides an assessment of the building envelope components of Arbor Roses Townhomes located in Hillsboro, Oregon performed by Morrison Hershfield Consulting Engineers this past September. The components of the building envelope were evaluated primarily for defective construction which would impact the envelopes weatherization resistance capabilities.

The fiber cement cladding and associated trim was found to have a number of issues that have lead to moisture intrusion problems:

- The cladding assemblies interface details were installed with joinery that is prone to water intrusion at penetrations, transitions and terminations (i.e., windows, doors, small penetrations, trim elements, sheet metal flashing elements, inside and outside corners, roof-to-wall transitions, base-of-wall, transitions to dissimilar materials, etc.) and generally limited provision to drain water back to the exterior.
- Sealant joints installed around windows, doors, miscellaneous penetrations and along transitions within the cladding were improperly profiled and tooled.
- Sheet metal flashing was commonly installed flat or back sloped, discontinuously, without end dams and with no drip edge. Additionally, laps in sheet metal joinery were not sealed to achieve a watertight assembly.
- The weather-resistive barrier was not flashed or sealed to miscellaneous wall penetrations (i.e., exhaust vents, electrical junction boxes, pipes, electrical meters, etc.) in a durably weatherproof manner or properly flashed along wall transitions and terminations.
- Sheet metal diverters were not adequately constructed at gutter ends. Wall assemblies were not integrated with the roof assemblies in a durably weatherproof manner at gutter ends and other similar transitions.
- The exterior wall assemblies (i.e. window and door penetrations, wall terminations, miscellaneous penetrations, etc...) were not sealed to limit air leakage.

As a result and as demonstrated by the photos provided, water is getting past the cladding elements and is likely retained from extended periods of time eventually finding its way through the weather resistive barrier and into the sheathing and framing elements. Over time this is likely to lead to deterioration and decay of these elements.

In addition, some issues related to the window and door installation were noted which may shorten their expected service life:

- Several observed large operable windows exhibited deflection of the frame along the sill
- Window and sliding glass door fasteners were not properly located, not adequately spaced, or not provide at all along many flanges. Broken vinyl flanges and other miscellaneous frame damage were documented at various locations

Cumulatively, the above has resulted in damage to the building envelope which if left unaddressed will lead to long term structural issues with the exterior walls. Morrison Hershfield has made recommendations with respect to the remedial scope of repair required to address these issues and repair any existing damage. Their findings and recommendations have been outlined in further detail in the report delivered to the HOA Board.

Lastly we note that, although the scope of this report was limited to the townhomes, it would appear that to a large extent the same construction was utilized for the single family homes and it is probable that these are experiencing some of the same issues.

If you have questions or wish to obtain a copy of this report please contact Bev Boyd with NW Community Management @ 503-670-8111 Ext. 212.