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## Observation Report

August 12, 2019

Matt Debus  
Vail Management Company

Re: Meadow Creek Condominiums, Vail, CO  
(Building B)  
Project No. 0307-19 B

On July 29, 2019, at Matt Debus' request, I visited the property referenced above to observe the general condition of the exterior decks along the northwest side of the condominium building and to provide you with my observations. The opinions expressed in this report are based only on visual observation of the condition of the structure on this date, without disturbing any integrity of the decks or the residence. These opinions do not represent overall property review, structural analysis, or compliance with applicable building code. The original construction documents for the building were not present at the time of my visit.

### PURPOSE AND SCOPE:

The purpose of this report is to evaluate the structural integrity of the existing decks along the northwest side of the condominium for building B, and to provide recommendations of the remedial work that should be done in areas where structural problems and or damage is observed.

### BACKGROUND:

The condominium complex is a cluster of buildings that are spread out over the property and appear to have some similarities in a common repetitive layout. According to limited Town of Vail Planning documents the condominiums appear to be built in the late 1970s or early 1980s. Building B consists of 6 units, (B1-B6), built on a moderate sloping lot from the southeast to the northwest. Also according to some of the older documents from the town it appears that the exterior decks for building B were part of an option design from plans dated 05-07-1980. The exterior decks for the units in concern are located on the northwest side of building B. There were no construction documents available at the time of my visit.

## OBSERVATIONS:

Building B consists of six units and stagger two units at a time from the northeast towards the southwest approximately 12 feet starting with units B6 and B5 on the northeast side. The exterior decks are located on the northwest side of the building and are approximately 7 to 8 feet above the finished grade. They extend approximately 9 feet from the building and the length between the cantilevered fireboxes of the units that are approximately 26 feet in length divided by a framed partition wall. This partition wall appears to be located between the two units at the party wall. The decks are accessed by an exterior door located on the west side of each individual unit. The exterior decks appear to be framed with 2x wood decking on a combination of 2x8 dimensional lumber joists, built up of either 2x8 or 2x10 dimensional beams and what appears to be a 2x6 framed wall with a stucco finish. At the bottom of the framed wall it appears that treated plywood sheathing was used along all sides of the wall prior to the stucco finish being applied. I was not able to see if there was any type of concrete or concrete block foundation wall below the framed wall. The 2x8 deck joists were either supported by a mechanical steel hanger, toe-nailed to a 2x rim board, or were bearing on the 2x6 wall. The 2x8 ledgers along the building and the cantilevered fireboxes that supported some of the deck joists were nailed along their length. (See Image A & B and attached layout)



(Image A)



(Image B)



Unit B1: The deck for this unit appears to be in good condition. The paint that was applied to the underside of the deck and structural members showed minimal signs of chipping or peeling. The deck joist members and connections appear to still be in good condition. The one area that appears to be weathered and show signs of chipping paint is the supporting (3)-2x10 along the west edge of the deck. This beam spans approximately 16'-6" in length and is notched on the ends where it bears on the end of the framed stucco wall.

Unit B2: This unit deck is connected to unit B1 and is separated in the middle by a framed partition wall. The paint that was applied to the underside of this deck and structural members has mostly peeled away. Some of the mechanical steel hangers and nails appear to be weathered and show signs of rust. Some of the deck joists are cracking in areas and they appear to be taking on a blackish/gray weathered look.

Unit B3 & B4: These two unit decks are separated in the middle by a framed partition wall. The paint that was applied to the underside of these decks and structural members has mostly peeled away. Some of the mechanical steel hangers and nails appear to be weathered and show signs of rust. Some of the deck joists are cracking in areas and they appear to be taking on a blackish/gray weathered look. The supporting (3)-2x10 along the west edge of these decks appear to be sagging at the middle span. Upon placing a 6 foot level to the underside of this beam it was measured to be sagging approximately 1 1/2 to 2 inches over 6 feet. There was a separation between the fascia boards where they butted up against each other. It appears that a new 2x6 deck joist was added just below the partition wall. It appears that Unit B3 had replaced their decking surface to a composite material. (See picture C & D)



(Image C)



(Image D)

Unit B5: The deck for this unit appears to have been remodeled at some point in time. The decking surface is a composite material. The deck also was made larger to the south by squaring off the angled section of deck to the unit B4's exterior wall to the north. There was a (2)-2x10 ledger along the wall of unit B4 and approximately 2'-6" to the north were (3)-2x10's that appeared to align with another partition wall from above. Located on the south side of the framed stucco wall the deck was framed with a 6x8 timber beam with a 2x6 that was nailed to the bottom of it so that the mechanical steel hangers that supported the new treated 2x10 joists could be nailed too. (See Image E).



(Image E)

The 6x8 was bearing on the ledger to the south and the 2x6 stucco wall to the north. There was a 4x10 ledger attached to the cantilevered angled firebox with what appears to be two timber screws at 2 feet on center along the top edge of the ledger. The 2x10 treated joists were attached to the 4x10 ledger with a mechanical steel angled bracket on one side of the joist. On the north side of the framed stucco wall there were 2x6's added against some of the existing 2x8 deck joists.

Unit B6: This unit deck is connected to unit B5 and is separated in the middle by a framed partition wall. This framing appears to be similar to unit B1 and B2. The paint that was applied to the underside of this deck and structural members has mostly peeled away. Some of the mechanical steel hangers and nails appear to be weathered and show signs of rust. Some of the deck joists are cracking in areas and they appear to be taking on a blackish/gray weathered look. The supporting (3)-2x10 along the west edge of these decks appear to be sagging at the middle span. Upon placing a 6 foot level to the underside of this beam it was measured to be sagging approximately 1/2" over 6 feet.

#### CONCLUSIONS:

At this time, I do not believe that Units B1, B2, B5 and B6 exterior decks on the west side of Building B will fail structurally. Besides the deck being weathered in areas, there are no significant signs of rot or any indications of instability. Although I do not believe the decks will fail, I do feel that the existing decks are not constructed to today's building codes. I feel that the (3)-2x10's supporting beam is not adequate to support the current Town of Vail design load criteria nor does it match the plans which specifies (3)-2x12's. I feel that the deck joists that are cracked and appear to be taking on a blackish/gray weathered look will eventually start to rot and will lose their structural integrity to support their imposed loads. I feel that the hangers and nails that are showing signs of rust may eventually become too corroded to support their imposed loads.

I do believe that the exterior decks for Units B3 and B4 should not be used. I feel that the existing (3)-2x10 beam along the exterior edge of the deck has been compromised of its structural integrity and needs to be replaced. It is showing signs of cracking along the bottom face and extensive deflection.

#### RECOMMENDATIONS:

I do recommend the following items have immediate remedial work completed on them:

1. Replace all the (3)-2x10 beams along the exterior edge of the deck with a member that can support the current Town of Vail design loading criteria. This must be completed on Units B3 and B4 as soon as possible.
2. Add (3)-4" x 3/16" diameter Timber-Lok screws at 16" on center to all existing 2x10 ledgers that are attached to the building rim-board.



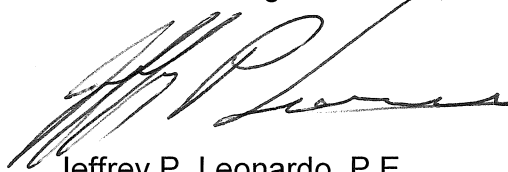
3. Add (2)-4" x 3/16" diameter Timber-Lok screws at 16" on center along the length of the 2x6 that was added to the bottom of the 6x8 timber on Unit B5.
4. Provide a Simpson LS90 hanger to the inside face where the south end of the 6x8 timber bears on the 2x10 ledger on Unit B5.
5. Replace all deck joists that have cracks and or signs of rot on them.

The following items are recommended to help prolong the workability of the existing exterior decks:

1. Provide Simpson LS90 or Simpson LUS26 hangers on all deck joists that are missing them.
2. Replace all nails and hanger that show signs of rust. The nails and hangers must meet the requirements per section 2304.10.5 of the 2018 IRC.
3. Maintain decks by regularly monitoring them, clearing them of snow and ice, and by resealing them with the proper stain/sealer and or paint.

If you would like to discuss this report, or if we can be of further service to you, please do not hesitate to contact us.

Sincerely,  
Structural Design Solutions, Inc.



Jeffrey P. Leonardo, P.E.  
President

