



**MICHAEL LEAVITT & Co INSPECTIONS, INC.**

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## CONCRETE REPORT

June 1, 2023

### INSPECTION PROPERTY ADDRESS

850 East 820 North  
Provo, UT



Dear Mr. Flinders:

At the request of Matthew Flinders, I was called upon to visit your apartments and evaluate the second floor concrete work and the support framing at 850 East 820 North, Provo on June 26, 2023.

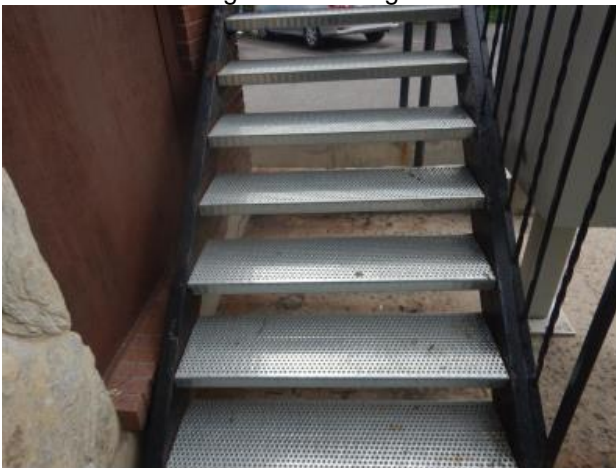
**WHY ME?** - I have been inspecting homes and commercial buildings in Northern Utah for the last 28 years and have that skill set to help me in my assessments. I am NOT a concrete expert and I took no samples to the lab for testing. I am also NOT a metallurgist. My expertise comes from being able to view the big picture, ask the right questions, and document what I am finding as I evaluate the particular component or condition.

**SITE VISIT** - I visited the property alone in a light sprinkle rain and while looking at the second floor walkway system took 158 photos. I am providing those in a separate zip folder, and I will be including several of the images here in this specialty report.

### FINDINGS...

**IRON WORK** - The stairways, upper walkway, and guardrail system are all original construction.

**STAIR TREADS** - The old stair tread mounts rusted out and the stairs had to be replaced. I can see the old mounting points. I can see the rust and damage to the stringers.



The new treads are a great upgrade, but the stringers and mounting point were not completed during the major tread repairs. The connecting points were all left unpainted and the rusting continues. I see no evidence of any painting after the tread installs.



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**RUST** - Look closely at the image below and you can see the ongoing rust in the stringer and at the mounting point of the tread. This rust does not stop unless it is either removed or treated, and then protected. This means that the stair tread replacement solution will be short lived unless corrective action is taken. This would have been so much easier to do prior to the installation of the new treads. Why? Because there is rust in the stringers behind the edge of the new tread that you can't get to with the tread in place.



**STRINGERS** - With grinding, rust treatment, and protection you will greatly extend the life of these stairs. Doing nothing and the rusting will continue.

**RECOMMENDATION** - I have seen stairs like these treated and coated with Por15 (por15.com) and it seems to work well. You need to get the rusting stopped and then get these stringers protected to endure the rain, snow, and rock salt used in the wintertime to promote snow melt.

**WALKWAY FRAME** - The previous concrete and pouring supports were removed leaving just the steel framework. Unfortunately, they did nothing to stop the rust prior to the new concrete installation. This rusting will be difficult to stop with continued snow, rain, and rock salt flowing through from above.



**RECOMMENDATION** - This also needs to be prepped, treated, and protected to prolong its life. Another primary concern will be to stop the water flow between the concrete and the steel. This might best be achieved by coating the concrete walk above. But lets take a look at the concrete work condition...

**CONCRETE** - I was told that about a year ago the concrete was replaced for the upstairs walkway. I can see where the concrete was installed in different pours and mixtures along its length. Some of these held up and some have failed miserably.



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**UNDERSIDE** - You can see the fresh metal pan used to support the concrete from below. On one side is the brick shelf and the other is the steel angle iron.



**NORTH TO SOUTH** - I will share photos of the concrete finish as I walked from the north end to the south end...



**PHOTO #1**



**PHOTO #2**



**PHOTO #3**



**PHOTO #4**

Photo 1 shows near total surface deterioration. As you look on to 3 and 4 you see that there is a rainfall deterioration from the middle to the outer edge. Keep in mind that there is a partial roof covering and the deterioration is from the protected area outward. Why is this important? If one is trying to blame the application of salt to the walks, then there would be surface deterioration all the way across.



**PHOTO #5**



**PHOTO #6**



**PHOTO #7**



**PHOTO #8**

Notice how the deterioration is from the mid point outward. Also notice the transition in photo 5 from one pouring to the next. The failure is much harsher in the lower portion of photo 5 than in the upper portion of 5. Photos 6 and 7 show much lighter damage. Photo 8 shows much more damage in the immediate entryway to the apartment.



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PHOTO #9



PHOTO #10



PHOTO #11



PHOTO #12

Once again look at the pouring transition in photo 9. The outer portion of 9 in the lower portion of 9 is total finish damage, where the upper portion is much more intact, yet discolored. The discoloration continued through 10 and much of 11. Photo 12 shows another pour transition and the discoloration pattern and deterioration changes again.



PHOTO #13



PHOTO #14



PHOTO #15



PHOTO #16

Photos 13 to 16 show the same deterioration pattern and no staining.

**RESPONSIBILITY** - Typically, there is an installer and there is a concrete manufacturer that delivers the prepped concrete by truck to the work site. When there are finish issues, the installer blames the concrete firm and the concrete firm blames the installer for the way they prepped and finished the delivered product. In this case, I can tell that this was not a delivered product with one pour. Instead, this concrete was mixed on site and installed in multiple pours. This means that the installer bears the responsibility for failed finishes as they mixed it up, poured it, and then worked the material to achieve the desired finish.

**SALT** - The next blame game happens with concrete work is that the installer blames the owner for their use of rock salt to help thaw out the ice and snow to allow safe use by the tenants and visitors to the apartments. And while salt use is common and normal, it is interesting to see where some of the concrete work shows no damage right next to other concrete that the finish failed badly. And then there are differences in the surface failure and discoloration from pour to pour. This means that the concrete used was mixed up and finished differently. That was under the complete control of the installer.

**RECOMMENDATION** - With the severe finish deterioration, if you want to preserve the current concrete work, is to have it overlaid with a modern deck coating. Here are three websites to check out. Realize that they focus on residential elite decks, but the concept of coating may be your solution...

- Complete Concrete Coatings ([utahconcretecoating.com](http://utahconcretecoating.com))
- RAD Concrete Coatings ([radconcretecoatings.com](http://radconcretecoatings.com))
- Duradek ([duradek.com](http://duradek.com))

**ADVANTAGES** - Done right, this would provide a waterproof covering that can be routed out and over the metalwork and prevent moisture from getting between the concrete and the steel.

Respectfully,

Michael Leavitt - Inspector