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FOOTHILL RANCH MAINTENANCE CORPORATION

NORTHWEST FOUNTAIN PROJECT

ACCOUNTABILITY, CLARIFICATION & DOCUMENTATION

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1.0 FOUNTAINS

Located on the corners of Rue De Fortuna and Bake parkway are two beautiful Fountains, the Fountains represent a warm welcome to the Bake side of the Foothill Ranch community development.

The fountains were built back in the 1990's and have seen their fair share of degradation and repairs over the past 30 plus years. The winter of 2018 & 2019 was very wet. Foothill seeing its share of damage from the resulting floods.

It was brought to the board's attention that the Northwest Fountain was not working. Part of the board's responsibility is to oversee the maintenance of the developments assets and to ensure that the vendors are performing as contracted to do so. A visit to the fountains was approved by the board, I and another director proceeded to the site to survey the situation.

The Fountains are designed with an equipment vault at the lower end of the Fountains. The vault is made of concrete forms connected together; the NE fountain vault is about 25 feet below the finished grade. The image below is what we discovered once we opened the vaults entry hatch, you can clearly see that the equipment vault is underwater.

First the decision to have the vault drainage was made, during that time I reviewed every document possible to get a complete background of work, repairs, and services, Foothill Ranch Maintenance Corporation records and stores every Foothill related document from the development inception up to today's reports, this is the Foothill Ranch MC Archives (more on the Archive later)

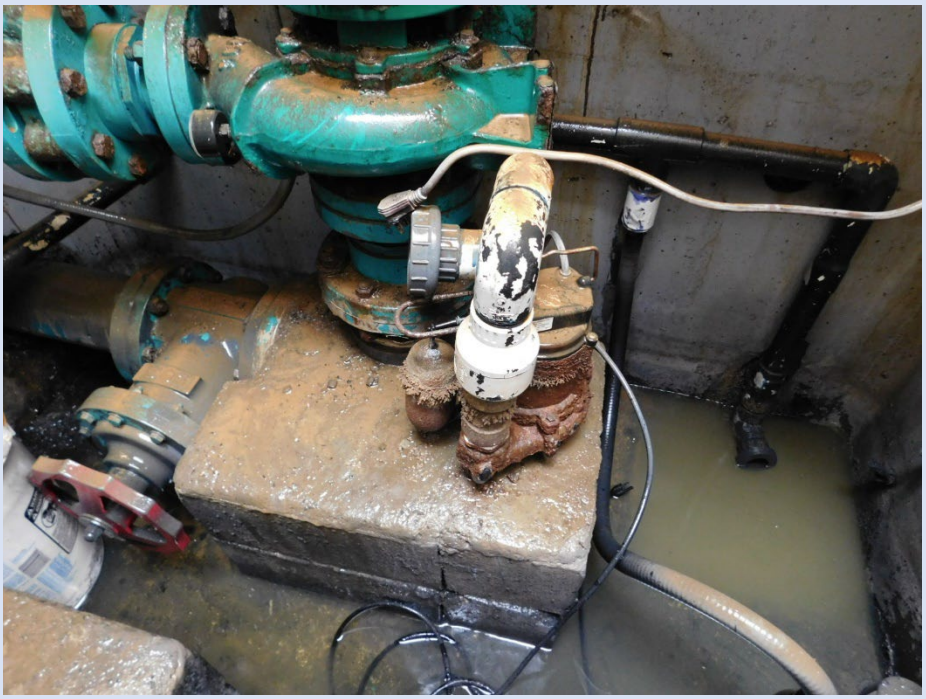
2.0 RESEARCH

The fountains information that was available was not very detailed, but the record did provide the many repairs that were done over the years, the biggest problem was flooding. The vault would flood almost every 3 to 4 years and every motor, pump and electrical equipment was destroyed as a result, the flooding was not aways from rainwater entering the vault. The cost of these repairs from 1997 to 2016 approx. $220,000.00, this of course was completely unacceptable, the problem is water (this is a Fountain, right) all reports of repair were basically put a patch on the issue, while I have no disrespect for the Board Directors of the past.

My background is Electrical, Control Systems, Infrastructure, Utilities, and Network Communications. Having past projects working on water treatment plants etc, having such knowledge, and experience I was able to understand the matter at hand, after the approval from the board we hired a Fountain engineering Specialist (Nature Lakes Inc) the owner myself and one other director having mechanical knowledge and working experience met and discussed a possible solution to address the issues of flooding, and water migration into the Fountain equipment vault.

The repairs started right at the same time as the COVID-19 lockdowns, this was quite a challenge as you can imagine. Anywho, we pressed ahead (with caution)

This is an image of one motor and pump damage.



The Images above show the Fountain equipment electrical panel, which is completely useless, the damage was too extensive to attempt any repairs.

The Image above is the existing fountain equipment vault entry hatch, the concrete on the exterior was in a state of dilapidation, water causing the concrete to break off which allowed more water to enter breaking down the inter-locking concrete form seals, also note the rubber exterior skirt again breaking down reveling opening for more water.

But this was not the only issue as to the water problem, in the image below you can see the piping from the pump penetrating the wall, the rust around the pipe entry is a result of leaking the packing gland (seal) was damaged allowing water to enter.

Piping vault wall penetration.

3.0 PLAN OF ACTION

Based on the findings and the extremely productive meeting the three of us had, we formed a plan of which we presented to the other board directors, (need a majority vote to proceed) on the board approval we decided that the vault must excavated, just down to the point where if any deeper OSHA and the City of Lake Forest engineering would have to be involved, trenching was a major performance remember this was COVID-19 and no vendors or companies were allowed to work, (we were masked and maintained the 6'-0" distance)

Also, a major issue was supplies, finding electrical components, motors, pumps, circuit breakers etc, however working with the suppliers and with the expertise of Nature Lakes, we were able to call-in some favors and secure the components as required.

We want to Thank Nature Lakes for there expertise (such a great company)
NATURELAKES.COM.

4.0 INSTALLATION

After months of work (please remember this was COVID-19 and Dec the end of the year) we were ready, the exterior of the fountain equipment vault was resurfaced a new rubber insulating boot securing the upper section between the soil and the vault (added protection) a new vault entry hatch with provisions to direct any water / rain that may find its way past the lid, it was time to install the new equipment, one point I should note, the equipment vaults being below 15 feet below the surface, water is the enemy typically sump pumps are installed to keep any waters from building up, two pump are typical however I wanted to provide as much redundancy as possible, we designed the system to have 3 sump pumps a primary and a secondary as backup both running on 120 volt, the 3rd sump pump we design to be battery powered 12 DC being completely separate form the AC source, if the AC powers fails for any reason the DC sump pump will active as needed, this allows for vault protection until the vendor either clear a fault or ac power is restored.

The images show the new Pump mounted ready for the Motor assembly.

Images of the new Motor being lowered into the vault I was standing on the floor of the vault at the time.

Image one of the new Motors being installed

As you can see in the images just to lower the equipment into the vault the vendor erected a support system with pullies, and winches.

5.0 ELECTRICAL

As noted on page 5, the existing Electrical Panel, the original panel was not rated for the specific environment, NEMA has specific rating depending on the environment this being a wet and damp environment NEMA 4X type was used, see below.

NEMA 4X panel for a superior level of protection from corrosion and extreme environments.

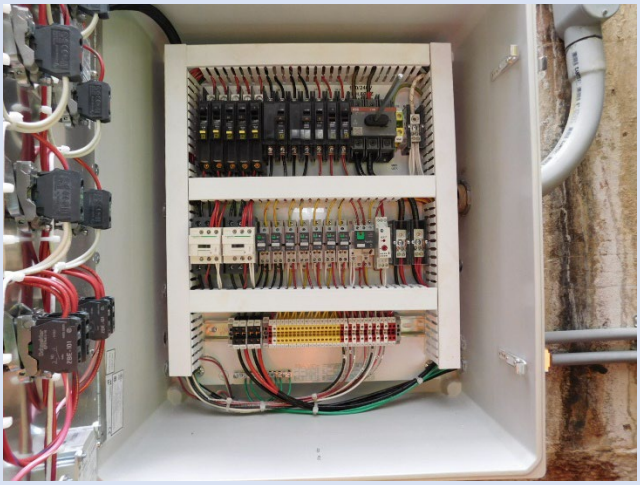


Image of the interior of the electrical panel.

6.0 INFORMATION.

The work that was done on the Northeast Fountain was a success, and yes when the Fountain was powered up for the first time since the repairs as the Fountain sprang to life and water was gashing high big and bold yes, I did yell “Its alive, Its alive”.

That was 2019, and to date the Fountain has been operating within the design perimeters we set.

To clarify the master declaration the CC&R’s does allow a duly elected Director to be involved in a project. If that director has the applicable knowledge and experience to do so, the Director is not paid or compensated in any way. The work of a board Director is to utilize the talents or related skill set that person has acquired to the benefit of the Foothill Ranch Community Development.

The work I performed on this project I gave my time freely and without any reservations, I have and always will meet any challenge to the best of abilities to maintain Foothill Ranch Community Development.