The Y mountain project was a great opportunity to come together as a Physical Facilities team to design and implement significant improvements to Y-mountain and a permanent lighting solution for the Y.

Since BYU now owns the land on the mountainside where the Y and the trail leading to the Y reside, the university has a commitment and responsibility to maintain that portion of Y-mountain. In addition to lighting the Y, Physical Facilities (PF) was given a challenge to upgrade and improve the trail, trailhead and associated amenities. As the lighting project high on the mountain progressed, work was ongoing to expand the existing parking lot, add two new parking areas, improve parking lot lighting, and add a water bottle filling station to the restroom drinking fountain. PF also needed to design and build a wireless switching connection in order to remotely turn on the new permanent lighting on the Y, build two spotting binoculars halfway up the trail for viewing valley landmarks, upgrade some of the trail fencing which helps minimize trail and mountainside erosion due to shortcutting, install benches periodically along the trail and three picnic tables at the top of the Y, place many new trail signs with photos and information for the hiking public, and finally deliver, place and compact 2.46 million pounds of road base along the trail to reduce erosion, direct water run-off and make the trail more safe.

The first thing accomplished in early spring for the lighting project was a test of optimum light spacing and types of lighting. A string of 12 lights was used to test various spacing options and different LED light types. After dark, with a team on the mountain and a team on campus, various fixtures and spacing options were tested, which helped determine the final decision on what to use and how many to install.

The next step was to excavate a 1.1 mile-long trench along the trail and through unknown soil conditions. Would bedrock or large boulders slow the work down? Teams were brought together and the work was started, preparing for the worst. In the end, miraculously, only one large boulder was encountered. The skilled equipment operators were able to work around it and the entire trench was completed in 10 days. Three two-inch conduits were then installed along the entirety of the trench. Two were used and one was left, as a spare for future needs. Wire was then fed down the mountain with pull stations at every switchback.

With the wiring in place, the next challenge was to install new military-grade lights in the Y’s gunite surface. Again, a team of Physical Facilities workers came together with many ideas and options. After much discussion it was determined to surface mount the fixtures rather than try to trench and demo the fragile surface of the existing Y. By surface mounting the lights with high-strength epoxy and then installing additional gunite over the installations, the team was able to effectively cover and protect all the new light fixtures and connecting conduit while strengthening the underlying Y structure. Due to the historic nature of the project several campus leaders and employees were invited to participate in the fixture installation.

Getting 270,000 pounds of gunite up the mountainside was one of the most difficult logistics that had to be figured out. Should the materials be flown up with a helicopter, or should they be hauled up the trail? Should it be mixed at the bottom of the mountain or at the top? The team gathered again and after carefully exploring each option it was decided to haul and mix everything at the Y itself. Four long, 12-hour days with a great gunite contractor and hundreds of dedicated employees from almost every BYU shop saw the gunite to completion. After allowing the gunite to cure for a few days, two new coats of paint were then applied over the entire Y. Due to its overwhelming size it took over a week in the blazing sun to complete the paint job.

And finally, one early morning, a 3 am. pretest of all the lighting and switches was conducted to ensure all was working correctly. It was a success and the official lighting of the Y was ready for Homecoming 2016. Another remarkable campus project was complete.

Y Mountain Trail Project Included:

- 34 new parking stalls
- 2 new permanently-mounted spotting scopes for valley viewing
- Upgraded fencing to stop erosion due to trail shortcutting
- 25 new benches
- 3 new picnic tables
- 150 gallons of paint
- 30+ new trail signs
- 270,000 lbs. of gunite
- 2.46 million pounds of road base
- Over 1600 equipment miles
- 3 miles of conduit
- 5 miles of electrical wire
- 183 LED light fixtures
- Wireless camera and switch to turn on new lighting

Architectural Highlight

By Jim Dain

Lighting the Y

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The book, “Winning Well” by Karin Hurt and David Dye, refers to a scene in the movie, Apollo 13, where Jim Lovell is standing behind the other two astronauts as they are taking pictures of the moon. He asks them the question, “Men what are your intentions?” After a short pause, he further states, “Mine is to return home.” Like the movie, an effective leader will ask questions and help set clear expectations for the team to stay focused on the desired outcome. This past summer the Site Development Department and the Electric and Carpenter Shops were assigned the project to see that permanent lighting was placed on Y Mountain. To most people, this project may not have seemed like much of a challenge; but there was much to do in order to ensure that all would be ready for the lighting of the Y during BYU Homecoming Week. It was necessary for all shops to be involved in weekly meetings where problems, schedules, and expectations were projected and discussed. This communication was crucial to the team’s success.

Learning from this lighting project, and moving forward with new improvements on BYU campus, there are four leadership skills discussed that will build efficient team players.

1. Set clear expectations
2. Train and equip your people to meet the expectations
3. Reinforce expectations
4. Close the loop with celebration and accountability

As effective team players, leaders can motivate others by being clear and consistent about what is expected. Asking questions will ensure all invested parties are on the same page. Leaders also need to make sure their team has the training, skills, and equipment required to meet the expectations. Finally, celebrating success and acknowledging each member’s contributions insures each person to do their best. As with Apollo 13, no matter the challenge, when teams are given clear guidance and have open communication, the project’s journey will likely be successful. The impossible is made possible.

Shop Highlight
BYU Service Station

By Jeron Woffinden

The BYU Service Station was built in its present location in 1980. It’s staffed by the manager, Jeron Woffinden, Kate Gillman and three student employees. The station consists of an outside carwash, a drive-through carwash, a service bay with a walk-in pit, and an office and two stationary vacuums. The fuel islands have four pumps for gasoline, two for diesel fuel and two for clear diesel fuel. There are five underground storage tanks that hold a combined total of 44,000 gallons. Jeron and his crew do an average of 130 services per month on the BYU fleet. Services consist of changing engine oil, checking the differential, transmission and all other fluid levels, setting the correct tire pressure and giving the vehicle a visual safety inspection. The general condition of the vehicle is noted. If a vehicle has a safety issue, it is taken out of service until repaired.

Each day on average, the service station dispenses approximately 1000 gallons of gasoline and 325 gallons of diesel fuel. The drive-through car wash averages 6000 washes per year with as many as 110 on a busy day.
Ever since I was a young child my father taught us this truth, “There is time for what you want to have time for.” It was a reminder that the excuse, “I didn’t have time to ……,” was not something he would consider as a valid reason for not getting an assignment done. Recently, my staff and I have been thinking more and more along those same lines. Many campus recipients of services from Physical Facilities (PF) tell us they are pleased with the quality of work and caliber of craftsmen that we have and generally recognize our costs reflect market realities; however, we also know that in many instances the time frame in which projects are accomplished could improve. There are many who would be pleased if we could find a way to do significantly better in that aspect. In our recent PF Leadership Retreat we worked on significant ideas to improve the timeliness of our services and how to get more work done in a shorter time frame. Over the next few weeks and months many of those ideas will be implemented. I invite those who request our services to watch for changes and send me your observations.