

Timothy Klein  
Reflective Journal #6  
07/10/2023

Over the past 50 hours, I worked on several different projects which came with their own interesting challenges. Around this time every year at Genesis our workload begins to increase as contracts tend to increase to have higher productivity by the end of the year. The major projects being worked on at the moment also are at the end of our service range which means daily drives of at least an hour and a half both ways. The work days due to this have become both hotter and longer resulting in an overall increase in daily intensity.

The first project I worked on during these past 50 hours was troubleshooting a new network build which was connecting a new apartment building development to the greater network and bringing service to a terminal on each floor of the building which our ISP customer would use to connect each apartment as the end user. Everything was already built and the network service had been turned on for testing. The very first terminal into the building was experiencing low levels of light coming from the network distribution hub and it was my job to find out what the issue was.

I used my OTDR (Optical Time Domain Reflectometer) to determine that the signal strength going into the network taps was marking at a -27.43dB while the lowest possible acceptable rate was a -24.00dB. There had been a prior technician sent out as he was unable to locate the source of the issue but his work gave me some very useful preliminary information to go off of. His guess was that the patch cords which connect the fibers to the network taps were accounted for in the design and since each one would have an associated loss that this would be our issue. I checked over the network design myself and determined the planner had in fact noted the need for additional loss levels. I again used my OTDR to test the fiber which was feeding the

building through the original hubsite and found that there was a loss right at about 50ft from where the cable came out of the conduit which would indicate an at least partial cable damage since there was some light able to pass through. I tested each fiber in the cable to see if there was one undamaged to be used temporarily until a new cable was ran. Roughly 20% of the 48 fibers within the cable were still viable and I spliced in one of the undamaged fibers then went back to the nearest network distribution case before where the cable entered the building and redirected the primary services path.

The second project involved being surprised on a new network build which had a brand new type of cable we do not normally use which the cable crews had installed instead of the usual one. While both cables contained the same amount of fibers the preparation for the new cable required a specialized tool which we did not have on hand as that would have required prior knowledge to locate. My team and I studied the playbook on cable preparation and practiced on some spare cable to hone in our abilities before working on the installed cable. It was largely a couple days of learning and using in the moment pragmatism to find solutions.