

What Can I Do?

Fixer Upper Fun and the Electrification Journey-Step 1

As the Sustainability Manager for the County, it occurred to me that my personal experience going through the process of transitioning my home to all electric and reporting out on lessons learned along the way might be of help to others who are contemplating this transition. The following editorial is by no means an expert opinion, it is merely a personal process I share in the hopes of making these projects a little less confusing, cumbersome and costly for those also on this path. The rewards of lowering emissions and eventually, utility bills, while increasing your home's structural resiliency really are worth the cost and effort and the [rehabilitation of structures is a much better alternative for lowering emissions than new construction](#). Please reach out to the Sustainability Division to relay any of your own learnings on this topic so that we can add it to the electrification themed articles to come: sustainability@santafecountynm.gov.



–Jacqueline Beam

I have lived in Santa Fe since 2008. Upon my arrival, it became obvious, due to high demand and lack of inventory, as well as my income range, that I would need to wait to purchase my third home. “For how long?” was the question. Like many other Santa Fe County residents in my situation, I searched passively for the right nest for years, with little success, resigning to a ten-year span of overpriced rentals. At the end of 2019, recognizing the pattern of inaccessibility to well-maintained homes in the area and a strong sense that the market could only get tighter and more inaccessible for my income bracket, I took advantage of my VA loan benefits and purchased a fixer upper in the Eldorado region. I knew it was a risky leap of faith; my new home had many flaws, and was on the market, with a number of offers that fell through (likely due to the condition) before my offer was made and formally accepted.

This was going to be a major rehab project. Yet, I also saw the long-term potential and advantages. The house was perfectly oriented for solar gain with a longwise south facing main wall. The foundation stepped down in terraced concrete slab. Overall, the structure was a good demonstration of my schooling in sustainable architecture. The home followed the contours of the land, with plenty of sky lights for passive lighting, and featured a porch that beautifully aligned with the sun’s path for warmth and shade depending upon the seasons. What brought the biggest smile to my face was that it sat adjacent to a greenbelt that went on for miles with a view of the Sandias. The entire surrounding area boasted trails branching onto BLM land and hosted beautiful clusters of piñon, and juniper trees. The mature apricot, peach and aspens, were a big bonus as well, all smartly positioned on the south facing side for shade (and fruit) in the summer. As much as I was happy about the mature trees, the original owner obviously did not consider the species and their elevated thirst requirements and the home was on a private well. However, hyper aware of the drought conditions, I believed I could find a way to take advantage of the flat roof and set up a stormwater capture system to address the landscaping water needs.

Yet, that roof was in dire need of repair and updating. After clearing out the mess of debris, and painting everything a warm white so I could at least endure the day-to-day transformation work; my first big project was the roof. How could I possibly set up a storm water capture system when the roof was crumbling with numerous leaks that needed immediate attention? After gathering three quotes, I

employed the services of a roofing company that provided commercial grade, reflective Thermoplastic polyolefin (TPO) with six inches of insulation. This first step was by far my best decision, serving as the foundation for future phases of rehabilitation.

Thankfully, I was able to take advantage of a nice tax credit for the TPO roof. This credit allowed me to offset some of the costs in the next year although the credit did not cover the labor, only the cost of materials. There are [new tax laws since the Inflation Reduction Act \(IRA\) which also allow for energy efficiency related tax credits](#). For those who have an understanding of the costs of new roofs, (TPOs range from \$15,000-\$35,000 depending upon the size of the roof,) it goes without saying that the materials are a rather insignificant portion of the overall price.

Roof Replacement Lessons Learned:

1. Always gather at least three quotes and check to ensure the roof contractor values proper permitting processes, energy efficiency, green construction/material usage and recycling. Reviews and word of mouth references are important.
2. [Commercial grade TPO's are incredibly energy efficient](#) and usually come with a 10-to-20-year warranty. With increased insulation and the ability to walk on the roof (or create a rooftop patio at some point), the added costs will be returned in a more comfortable temperature range in the hottest and coolest months of the year as well as substantially lower heating and cooling costs.
3. Reflective TPO provides the best solution for energy free cooling of the interior temperature as over 90-degree days increase, and [extreme heat events become more of a norm](#). With an off-white reflective TPO, in early summer I experience a 7-degree reduction in indoor temperatures compared to my pre-TPO roof.
4. Wrap wooden canals in metal at the same time that the roof is getting replaced to avoid future leakage points. Any roofer worth their invoice, will offer that in their bundle of services.
5. This is also a good time to consider sky lighting before you install the roof for natural light and increased energy savings.
6. Start considering how you want to direct the water for landscaping through adding directional gutters to a cistern, raingardens or other planted areas.
7. Think about where the canals are located. If downspouts are located over an electrical or gas meter it is important to divert the water at least 3' from the meter. Otherwise, in the future, when the electrical needs to be upgraded, the utility company and CID will require the meter to be moved resulting in additional delays and costs. Diverting the water is much less expensive.

Well, at least I could dream about a rooftop patio garden now! With the roof solid and new, and my vision for rooftop parties enticing, my logic side knew though that the real next concern was not the artsy spiral staircase, rooftop furniture or appealing sunshade of my dreams, but rather *energy efficiency measures*. Several walls remained water damaged and required repair as well as increased insulation. My old single paneled windows and doors were seeping air and in desperate need of replacement. That led to the next phase of the fixer upper fun: Stay tuned for next month's article and all that I have learned in Step 2 of my electrification journey including increased insulation, and the replacement of doors and windows with energy efficient alternatives as the fun fixer upper ride continues!