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Low-Voltage Lighting: The Other White Light

I am a far cry from an expert at lights. But I can and will tell you what I have learned from my recent experience at installing landscape lighting.

Some background: my club decided to install new lights throughout the front entrance. Before this recent installation, I was under the assumption that low voltage was either very expensive or you had to install fixtures such as Malibu lights—not exactly what the club was looking for. When I started receiving quotes from electrical companies, I was shocked at the reasonable prices for the lights. A friend informed me that low-voltage lights were attractive and easy to install, as well as having many benefits other landscape lighting doesn't offer.

This is an adjustable ground-installed light. It would be used for lighting signs, walls, etc.

The Lowdown on Low-Voltage

A lot of companies sell materials and fixtures to do low-voltage lighting. Top-quality companies will sell these materials at a more expensive price tag. I believe you get what you pay for. If you are looking for quality, you will probably be paying a little bit more for it. The options and many styles of lights offered on the market today are exciting. All are constructed of die-cast aluminum and come in your choice of many colors and designs. Depending on what atmosphere you are trying to create in your landscape design, low-voltage lighting can be used for:

This is a fixed ground light. It would be used to light trees, shrubs, etc.

- Up and accent lighting, floodlights, in-ground and well lights. Perfect for the highlighting of trees, shrubs, gardens and architectural features like the exterior walls of buildings and artwork. These lights create drama and draw attention to focal points that would normally be lost or go unseen in the dark of night.
- Path and spread lights. Used to illuminate dark areas along walkways, paths, decks and steps. Lighting in this manner increases safety by reducing risk of injury around these areas. Path and spread lighting also serves as a directional feature along front drives or entranceways, leading customers and guests to a main door or point of attraction, without the glare of traditional floodlights.
- Underwater lights. Used to enhance the beauty of a pond, fountain, waterfall or any other body of water. These fixtures draw attention to your water feature by dramatically lighting it from above with floating lights or below with submersible lights. Use in combination with other lighting techniques to create dramatic effects.

Low-voltage lighting has many benefits. Low-voltage systems are safe and

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energy-efficient. These systems convert an ordinary 120-volt current to a safe 12-volt current. There is no risk of electrical shock if the cable were to be accidentally cut. Economically speaking, too, low-voltage lamps consume less energy compared to 120-volt lamps, and last much longer. Low-voltage lighting is also cost-effective. A 12-volt lighting system can cost up to three times less to operate than a 120-volt system. Lamps use less wattage and still provide comparable performance to higher-wattage lamps. With the large selection of designs to choose from, many fixtures can be discrete to the eye, hidden in the landscape to provide maximum illumination without the fixture itself being visible. Automatic operation is also a major bonus. These low-voltage systems can be easily automated. Your landscape lighting can come on at dusk and shut off at dawn, or any hour desired.

Simple Installation

To install the low-voltage lights is very simple. A pipe puller or two people with spade shovels will be needed to do the job. Low-voltage cable can be buried in a shallow trench or even run on top of the ground, under groundcover or mulch. The cable does not need to run through conduit or be buried deep in the ground. I found that burying the wire approximately 8″ to 12″ in the ground worked best for us. Where the light is to be located, you pull a loop, for use later in the job (see Figure 1). Continue to pull the wire to your desired location.

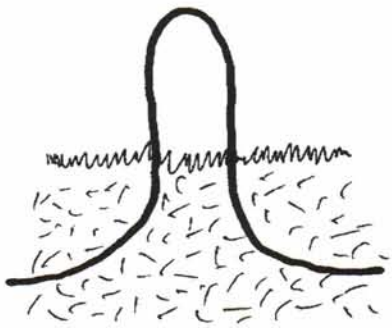

Figure 1

Figure 2

To install the lights, simply use a post-hole digger and dig a hole to the desired depth of the light fixture. Cut the wires (loop) (see Figure 2). From there, you simply have to perform these tasks.

This light is used to light sidewalks, driveways, etc.

- Connect the wires.
- Set the fixture.
- Adjust light, as needed.
- Backfill the light.

A low-voltage system is flexible, allowing more fixtures to alter lighting effects. Next, figure the total wattage for the area and the length of wire that needs to be run for the job. Some Web pages have a calculator that will help you figure this out. If too many lights are being powered by a single transformer, or if a cable is run too long, noticeable voltage drop may occur. To minimize voltage drop from occurring, try:

- Shortening cable lengths.
- Reducing individual fixture wattages.
- Reducing the number of fixtures on a run.
- Using multiple transformers or a higher-rated transformer.
- Using a heavier gauge wire.

Low-voltage systems require the use of a transformer to reduce standard 120-volt power to 12 volts. To determine the transformer size, add up the wattages of all the lamps that you plan to use. A transformer is then selected that matches as closely as possible to the total lamp wattage. As a rule of thumb, the total lamp load should not be less than one-third the transformer's wattage rating, nor shall it exceed its maximum watt capacity.

This light allows downward illumination from a tree or building.

Even fixtures such as these can be installed as low-voltage lights, and it's very simple.

As I mentioned before, I am neither an electrician nor an expert. But through my own experience, I found that using low-voltage lighting is easy and economical. We were able to use low-voltage lighting in our landscape, highlighting the main entrance of our club. It makes our facility feel like home. Remember that first impressions last forever.

If you are interested in low-voltage lighting, check out the Web. I have found these Web sites to be very helpful as I educated myself to make decisions on choosing what wattage, wire, transformers and other materials were needed to complete the job.

http://www.vistapro.com
http://www.kichler.com
http://www.nightscaping.com

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