

Plugged in

Updating historic home's electrical wiring can be tricky

BY TERI MADDOX
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Lou Davidson and Sue Witherell faced a long list of renovation projects when they bought a derelict, Queen Anne-style home in Belleville's historic district two years ago.

But none was considered more important than a new electrical service and wiring system.

The three-story brick home at 501 Mascoutah Ave. had been built in 1887 by John Winkler, a German immigrant who operated a bottling plant for soda water.

"It has every phase of wiring through the ages," said Davidson, 66, a retired home remodeler.

Original light fixtures were powered by gas, as evidenced by valves and tubing sealed off decades ago.

By the time the home was vacated by former owners in 1993, electricity was running to lights, switches and outlets through knob-and-tube wiring from the 1920s and '30s and cloth-wrapped Romex wiring from the '40s and '50s.

Electricity was being distributed from an old-style fuse box in the basement.

Witherell and Davidson suspected that some wiring had been damaged by gnawing animals and water from a leaky roof. Several floors and ceilings had collapsed.

"I didn't trust (the old electrical service)," said Witherell, 65, a retired computer programmer. "I was nervous about even turning on the lights that did work."

A home's electrical service consists of conduit running to a meter base outside and a fuse box or circuit-breaker panel in a basement or utility closet. It's connected to a system of interior wiring, switches and outlets.

The main concerns of homeowners contemplating electrical renovations are safety, capacity and local building codes.

Services and systems that are old, damaged or otherwise unsafe could cause fires or shock. Those with low electrical-current capacities can overload circuits and keep occupants from using modern appliances.

Renovations often are regulated by local housing departments, which won't issue permits unless work is done to specifications.

"In most city jurisdictions, when you do more than a 50-percent rehab, they pretty much hold you to new-construction rules," said electrician Jeff Foutch, who worked for Davidson and Witherell last year.

Foutch, 41, owns Loco Electro in Belleville. The name comes from his former job rewiring and installing black-box computer systems on diesel locomotives. Employees were called "locos."

Today, Foutch and his



DERIK HOLTSMANN/News-Democrat

▲ Lou Davidson and Sue Witherell in the foyer of the historic Belleville home they're renovating.

▲ AFTER: The kitchen has been updated with new cabinets, appliances and lighting.



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▲ BEFORE: The kitchen, before the renovation, had older cabinets and appliances with inadequate lighting.



Electrical renovations included a new meter base and weatherhead on the home's exterior.



Floor outlets are commonly installed in historic homes that have solid-brick walls.



Circuit-breaker panel has a 320-amp electrical-current capacity.



A gaslight fixture from the late 1800s.



Knob-and-tube wiring from the early 1900s.



Old cloth-covered Romex wires.

crew handle all types of electrical projects but specialize in historic renovations.

Foutch took one look at the old Winkler home and recommended a new electrical service and wiring system.

"As a general rule, accommodating all of today's high-tech appliances and equipment is not possible without rewiring, especially in these historic homes," he said.

Maximum current capacity for electrical services commonly used with knob-and-tube wiring often is 60 amps.

Maximum capacity for electrical services commonly used with cloth-wrapped Romex wiring often is 100 amps.

Foutch did a "load calculation" on the Winkler home,



Electrician Jeff Foutch

and Witherell planned to use.

They settled on a 320-amp electrical service with thermal plastic-wrapped Romex wiring. The fuse box was replaced with a circuit-breaker panel.

"The standard service is 200 amps," Foutch said. "But that would have put them right on the edge. If they would have wanted to expand in the future, they might not have had enough capacity."

taking into account its size, type of utilities and number of electrical appliances, computers and other equipment that Davidson and Witherell planned to use.

One of the biggest challenges with electrical renovations is rewiring. Many historic homes have solid-brick exterior walls with no hollow cavities through which to run wire.

"In one house we did, even the interior walls were brick," Foutch said.

Electricians often have to remove lath and plaster from frame interior walls or cut sections from hardwood floors to run wire. They can limit damage in some cases by using "fish-tape" tools to pull it through cavities.

The most common request from owners of historic homes is "more electrical outlets." People in the early 1900s had few electrical ap-

Tips from the pro

1. Learn "rules" for home renovation in your jurisdiction.
2. Follow the rules.
3. Calculate a budget for the renovation project.
4. Develop a plan.
5. Discuss the plan with all contractors and seek their input.
6. Establish project priorities.
7. Get written proof of insurance and licensing from all contractors.
8. Request and check contractor references.
9. Set a reasonable timetable for the project.
10. Be flexible and recognize problems will come up.

Please see ELECTRIC, C5