



Large churches and other big spaces face energy challenges. At the Family Worship Center near Elgin, an energy audit shines some light on ways to lower bills.

POWER TO THE PULPIT

By Ed Crowell

Pastor Jerry Edmon believes a geographical miracle is at work filling up his church for the weekly Sunday service.

"We're not close to anything," he said of the non-denominational Family Worship Center located midway between Elgin and Bastrop on sparsely populated FM 1704.

"It's kind of a miracle. People are driving in from all over — Buda, North Austin, Smithville, Taylor."

Edmon, of course, wants his congregation to be comfortable when they fill the seats in the sanctuary on Sunday mornings and in the activities building next door for Wednesday evening supper and services. That means making sure inside temperatures are right and the lighting is good.

The church, a longtime commercial member of Bluebonnet Electric Cooperative, relies on electric power (except for a propane-fueled kitchen stove). Edmon and his small staff say they try to follow energy-saving tips from the co-op and other sources to keep their electric bills down.

The Family Worship Center, like many churches with big, open spaces that get used just a few hours a week, is difficult to heat and cool efficiently. The lights generally get turned on all at the same time, and they stay on at full power for services.

"We've learned some lessons in the past few years" about managing electric usage, Edmon said. The current sanctuary was built in 2001, and Edmon became senior pastor about 12 years ago.

To help the church get a tighter grip on its energy consumption, Bluebonnet recently offered the services of an independent energy auditor. The assessment was done without cost to the church so other churches that are co-op members — or any business with a large space that is used occasionally — could benefit from the energy- and money-saving tips

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Congregants stand during services on a recent Sunday at the Family Worship Center, located between Bastrop and Elgin. Large open areas such as a church's sanctuary can use a lot of electricity in a short time, creating energy efficiency challenges. At left, Jerry Golden of Golden Energy Services examines one of an array of 5-ton air conditioning condensers outside the church. Although several of the units are aging and less efficient, he suggested the church wait until a unit fails before replacing it.

Sarah Beal photos

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MONTHLY MEETING

Bluebonnet's Board of Directors will meet at 9 a.m. March 21, at Bluebonnet's Headquarters, 155 Electric Ave. (formerly 650 Texas Hwy. 21 East), Bastrop. Find the agenda and last-minute updates March 17 at bluebonnet.coop. Hover your cursor over 'next board meeting' on our home page.

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ABOUT THIS ISSUE

Bluebonnet Electric Cooperative produced the blue-bordered pages 18-25 in this issue of the magazine with content that is of specific interest or relevance to Bluebonnet members. The rest of the magazine's content is distributed statewide to any member of an electric cooperative in Texas. For information about the magazine, contact Lisa Ogle at **512-332-7968** or email lisa.ogle@bluebonnet.coop.



In 2017, Bluebonnet celebrates you and what it means to belong to a cooperative.

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provided to Edmon.

The timing was right, as the church plans to expand its facilities later this year to accommodate a growing congregation.

Remodeling and an addition will allow up to 900 movable seats in the sanctuary. About 500 people are members of the church now.

Despite consistent growth of the Family Worship Center since Edmon arrived in 1993 from Oklahoma, he said he is not trying to build a megachurch. "I don't trust churches that grow too fast," he said.

He said he doesn't want to lose any of the emphasis on families that is the church's mainstay. Keeping to a single Sunday service is important to him because people lose their connection with one another if they don't all attend church together, he said.

"The motto of our church is Building Strong Families. That's the thrust for everything that we do here," said Edmon, the 61-year-old father of three daughters. He and his wife, Angie, a member of the Elgin Independent School District board, also have a young grandson.

"Health is one of our core values. And by that I mean spiritually healthy, financially healthy and socially healthy," he said. "I want to see these kids grow up with well-balanced lives."

He said the range of ages and generations at the church helps achieve those goals. "We have people up in their 90s down to infants."

Edmon's father-in-law, Irvin McCorkle, was the senior pastor before Edmon took over. McCorkle had started a Church of God on the property in 1988. Edmon renamed it to put family worship at the forefront of a Bible-centered, non-denominational church.

"We're a Heinz 57 variety. We have people who grew up Catholic or Baptist or Episcopalian," he said, noting that people used to be born into one faith and died that way, but now many people try different churches.

Auditing church's energy use

On a Wednesday afternoon in late January, before families gathered for a light supper, Bible talk and children's faith sessions, the pastor opened his church's doors to energy efficiency consultant Jerry Golden of Golden Energy Services. The heat and some of the lights in the low-slung brick sanctuary had been turned on.

Golden, whose business is in Clifton, asked questions about the church's power needs and habits. He noted that the building is "efficient by design, largely because it has few windows." The foyer is the only area where sunlight streams in.

Edmon showed Golden the 10 overhead lights in the back of the large auditorium that were replaced a year ago with LED bulbs on a dimmer switch. That was fine, Golden said. Where dimmers are not needed and hours of use are limited, compact fluorescent (CFL) bulbs should be considered — as long as they are available. Those bulbs are being phased out by the industry, but still are still available. They cost less and are nearly as efficient as most LEDs.

The incandescent lights that shine on the two-level stage where Edmon preaches and musicians play should be replaced, Golden said. Using 13-



Associate pastor Rusty Cook removes a panel covering fluorescent tube lights in the activities hall so energy auditor Jerry Golden can inspect them. He said they are good, but the incandescent floodlights behind them should be replaced with energy-efficient LEDs.

watt CFLs would provide as much light as 65- to 75-watt incandescents and pay for themselves in energy savings within the first couple of months, he added. In the E.C. Smith activities hall next door, a dozen 65-watt incandescent floodlights at the front of the building could be replaced with CFLs at a cost of \$20, and the church would save \$40 to \$50 a year.

Golden, who has worked as a consultant with Bluebonnet for more than a decade, went outside to look at the array of 5-ton air-conditioning units on the side and back of the building. The units are aging and may soon need maintenance, he said. Some were manufactured years before the church was built in 2001, but Edmon was unsure if they had been moved from the previous building. Golden recommended that the church wait until a unit's compressor fails before replacing it with a new, more efficient unit.

The programmable thermostats in the church should be set to slowly increase cooling or heating from the time the church is empty to when parishioners arrive, Golden said. "You can get to the right operating temperature in a reasonable time and save energy by not turning everything on at the same time." When the building is not occupied, Golden recommended setting the thermostats to 85 degrees in summer and 55 degrees in winter.

Large commercial members, including many churches, pay not just for the amount of power they use but also for their "demand," which is the largest amount of power used during any

30-minute period in the monthly billing cycle. Because all the church's power is used on Sundays and Wednesdays (except for occasional weddings or funerals), that "demand" portion — which means a higher bill if the church exceeds a certain amount of power use — is very important. (See *Energy Demand* story, p. 21).

Edmon said that once he has a solid plan for a 4,500-square-foot expansion of the sanctuary, "I'll get with Bluebonnet for suggestions."

A written audit report will be given to the church after Golden examines the church's energy use history and the power billing rates it has been paying. Last year, the church's electric bills averaged \$1,683 a month, with the highest for July at \$2,334 and the lowest for May at \$1,296. Other churches that are Bluebonnet members also pay attention to energy-saving measures.

At St. Stanislaus Catholic Church in Chappell Hill, for example, several steps were taken two years ago to lower power bills. New heating and air-conditioning units and a programmable thermostat were installed. "We had a horrible system under the floor," said Joanie Correll, secretary at the church, which was built in 1924.

Also, clear plastic shields were installed on the stained-glass windows to reduce the heat coming through. Energy-saving bulbs replaced old lighting. "We're modernized very well now, and our large parish hall is next," she said.

Rosanky Baptist Church, which was founded in 1916, incorporated a more efficient heating and

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"The motto of our church is Building Strong Families," said Pastor Jerry Edmon, left, whose church has about 500 members. "That's the thrust for everything we do here." Above, teenagers gather on a Wednesday evening for music and discussions of faith.

Sarah Beal photos

Energy demands lead to different rates for big venues

Enjoying a basketball game, catching a show or soaking up a Sunday sermon are events we enjoy, but big venues create big energy-management challenges.

Yet because they are used only a few days a month, large, open spaces like churches, gymnasiums and auditoriums do not actually use a lot of electricity over the course of their billing period.

It boils down to the fact that there are two types of energy use: demand and consumption. Demand, measured in kilowatts, is how much electricity is needed to power everything in use at a moment in time. Consumption, measured in kilowatt hours, is how much electricity is used during a billing cycle, which is typically about 30 days.

If you are a residential member, you are billed for the amount of energy you consume during a billing period. Businesses, school districts and churches that operate large venues, which demand a lot of energy when in use, are in a different rate class and are billed differently.

If you turn on a 100-watt light bulb, the maximum demand from that bulb is always going to be 100 watts. Now turn on every light, appliance, the air conditioner, the clothes dryer and any other electric item in your house. The amount of power you are using at that moment is your peak demand. Residential members do not pay for demand, though. They pay for their consumption, which is the total amount of power used during the billing period.

To put this in perspective, a typical home's energy demand is three to 12 kilowatts of power, depending on the weather, the size of the house and the amount of electrical equipment inside. A small rural church's energy demand

If you turn on every light, appliance and any other electric item in your house, the amount of power you are using at that moment is your peak demand.

might range from 20 to 45 kilowatts. A large church's energy demand might range from 100 to 200 kilowatts. A Walmart's energy demand is about 1 megawatt, or 1,000 kilowatts.

Residential members and businesses that have a peak demand consistently less than 50 kilowatts are only billed for their kilowatt hours of consumption. Businesses with a peak demand that is consistently 50 kilowatts or more are billed by the kilowatt hour (like a residential member), but they pay a peak demand charge as well. The demand charge for a business is determined by measuring their peak demand during the 30-minute period when they use the most power, and multiplying that by either \$4.50 or \$5.50, depending on their rate class. That measurement is calculated for every billing cycle.

The demand charge is necessary because businesses and venues with high peak energy demand require higher capacity equipment, like transformers and wires, to provide enough power. This equipment and the electric grid to support it are more expensive to design, install and operate. Simply put, a large church or gymnasium requires more power and resources than a home or small business.

"We have to build our electric grid to reliably serve our members who have high peak

energy demands," said Eric Kocian, Bluebonnet's chief engineer and system operations officer. "We know it's a challenge for them to manage their peak demand. We work with them from the beginning to plan and build the right amount of capacity to serve their needs, and also show them how to manage their peak demand to keep their electric bills as low as possible."

Demand changes from moment to moment as air conditioners cycle on or off, and lights and appliances are turned on or off. Businesses on Bluebonnet's large power rate with the demand charge can control their peak demand by carefully planning when they adjust heating and cooling system thermostats and turn lights, other appliances and equipment on and off.

For example, churches and community centers with large open spaces that are primarily used on Saturdays and Sundays can adjust their thermostats to bring their facilities to a desired temperature over several hours rather than in a short period of time. That is especially true if those facilities have multiple heating and cooling units that would have to run at the same time. All that energy use at one time results in a higher peak energy demand.

"The only way to really control peak demand is to make certain that unessential loads can never come on when the building is in its high-use period," says Jerry Golden, a Bluebonnet consultant who performs energy audits.

To know how to best control their costs, those who pay the bills for churches and other large facilities must "fully understand the distinction between demand and consumption charges," he added.

— Will Holford

air-conditioning system after moving into a new building in 2008. “We’re well insulated, and we keep a curtain closed over our one big window in the front of the church,” said Senior Pastor John Abraham. When the church is occupied, the thermostat is set to 75 degrees during the day and 68 at night, he said, and he usually turns off the system when the church is empty. “I’ve informed our people not to change it because we’re limited in funding.”

Powering up

Back at the Family Worship Center outside Elgin on a cold winter night, the activities hall was warm and cozy. Families had gathered for the Wednesday “Power Up” service, a midweek boost members get from fellowship and faith.

Dozens of people of all ages lined up for bowls of hot vegetable soup and combread prepared by two members of the congregation. Some of the families had begun the evening playing pool on three billiard tables.

Charles and Michelle McInnis, both state employees in Austin, said they looked for a church soon after moving to Elgin 10 years ago. He grew up Baptist and she Methodist, but they were open to any church rooted in the Bible.

At the Family Worship Center, “What we noticed right away was the friendliness. Some other places you have to go three or four Sundays in a row before someone recognizes you are there. That’s not the case here where everyone is so accepting,” Charles said.

“The leadership is great, and the church as a whole is a really good example of what family life looks like,” he added.

McInnis said his 8-year-old son, C.J., and 18-year-old daughter, Jordan, have many friends at the church. Jordan is also a singer on the praise team.

After the meal, children and teenagers headed upstairs for music, games and religious lessons.

In the high school group’s room, 15 young people joined Jordan singing along with a Christian music video. The darkened room was decorated like a disco.

Next door, the middle school group answered a group leader’s question about what they would change in their lives if they could. “Spend less,” one boy said. “Stop fighting with my sister,” another said.

Downstairs, the adults sat at big round tables to hear Edmon talk about a Bible verse and then family matters. He pulled out his cell phone as a prop and questioned the pressure to answer every call immediately.

“It’s supposed to be such a time-saving device, yet we have less time.... God didn’t overschedule your life; you did.... Kids can’t do every sport and every activity from noon ‘til night.... Take time to sit together and read and talk,” he said.

The Family Worship Center nonetheless presents a modern face with digital communications to reach families on Facebook and Twitter. Videos of Edmon’s talks and sermons are posted on the church’s website along with parishioners’ feedback. Clips show events such as the church’s annual Backpack Outreach where 500 free backpacks loaded with supplies are handed out to Elgin public school students.

It’s all part of the well-rounded worldly and spiritual life that Edmon tries to build.

“I love what I’m doing,” he said. “There is something so rich about being there for people through every stage of their lives.” ■



Sarah Beal photos

Chappell Hill VFD check presentation, above. From left, Lori A. Berger, LCRA Board member; Hondo Powell, Bluebonnet community representative; Marcy Kmiec, Chappell Hill VFD vice president; Clint Harp, LCRA chief of staff; Michael Kmiec, Chappell Hill VFD fire chief; Mat Kolajajek, Chappell Hill VFD assistant fire chief; Deb Calderone, Chappell Hill VFD secretary; Bryce Armstrong, Chappell Hill VFD captain; Joseph Fritz, Chappell Hill VFD captain; and Kate Holman, LCRA governmental affairs representative.



Dale Community Center check presentation, left. From left, Milton Shaw, Bluebonnet Board member; Joyce Buckner, Bluebonnet community representative; Lori A. Berger, LCRA Board member; Jerry West, Dale Community Center president; Beverly West, community center secretary; and Rick Arnic, LCRA governmental affairs representative.



Caldwell County Emergency Services District No. 3 check presentation, above. From left, Cole Jackson, Martindale VFD firefighter; Drew Schulle, Martindale VFD firefighter; Milton Shaw, Bluebonnet Board member; Joyce Buckner, Bluebonnet community representative; Lori A. Berger, LCRA Board member; Richard Salmon, Caldwell ESD No. 3 vice president; Bill Hamilton, Caldwell ESD No. 3 secretary; Randy Bunker, Martindale mayor; and Rick Arnic, LCRA governmental affairs representative.

