SEPTEMBER 2024 SPECIAL EDITION VOLUME 24

BLACKOUT ISSUE

The leaning power of Larchmere

INSIDE THIS ISSUE

THE TALE OF TWO CIRCUITS

When Moreland Courts construction was begun in 1922, electricity for the Point Building through the West Tower was derived from power that ran along Shaker Blvd. Those power lines have been named by the Illuminating Company Circuit 3. When buildings 7 through 12 construction began in 1929, Circuit 3 was inadequate. Therefore, a new circuit along Larchmere Blvd was utilized, now called Circuit 6.

Most of Circuit 3 is underground. Since 2014, Circuit 3 has only failed twice, entirely due to human error of utility companies while excavating near Shaker Blvd. On the other hand, Circuit 6 has failed multiple times a year, mostly due to unfortunate interactions between trees and overhead power lines. The elevators continue to work when Circuit 6 fails because the elevators are powered by Circuit 3. Circuit 3 also powers the charging station in the West Garage that management has created for residents for use during blackouts. The hundreds of LED lamps that illuminate Moreland Courts during blackouts are recharged from Circuit 3 and distributed to the hallways of Moreland Courts by staff.

Since it is Circuit 6 that provides electrical service to all the residential units at Moreland Courts and the lights in all the common areas, all power is lost to our units when the overhead lines of Circuit 6 go down. Moreland Courts requested that the Illuminating Company use Circuit 3 for ALL the electrical needs of Moreland Courts. The Illuminating Company refused to consider this option, stating Circuit 3 was not sufficiently robust to handle the additional load currently handled by Circuit 6.

Two Proposals

Proposal 1: 2020
Business Integrated Systems (BIS)

In 2020, Moreland Courts enlisted the services of BIS to address multiple issues regarding backup electrical power for circuit 6 at Moreland Courts. Specifically, we requested options for generator backup power in the event of future power failures. BIS presented four scenarios, and proceeded to describe how each was fatally flawed. The reasons for failure included cost, refusal by the Illuminating Company to allow the modifications, and historical building regulations. The BIS author of the 2020 document summarized as follows: "Unless an individual, unbeknownst to me, has the where-with-all to adjust [the Illuminating Company's] thinking, I believe that I am at a dead end concerning this project."

Proposal 2: June 2024
The Brewer-Garrett Company (BG)

As an alternative to generator backup, BG was tasked to create a proposal that would provide emergency backup to power outlets near the service doors to each of the residential units. Each individual circuit would provide up to about 2,000 watts of power. The proposal describes 109 circuits which would provide power to the 147 units. It is clear that the amount of emergency power available to each unit would be limited, but could power a refrigerator, freezer, and a few lights, and small appliances. The power for this backup system would come from Circuit 3, not generators. All of our recent backups have been local and due to the failure of Circuit 6, not circuit 3. The cost of this part of the BG proposal alone was $564,000 at the time it was written.

In August, the Facilities Committee discussed these and other proposals for supplying emergency power to Moreland Courts residents. The committee continues its quest to find solutions to the recurrent problems encountered during the frequent power outages that continue to occur. Legal and financial remedies, and the use of Circuit 3 powered community freezers were also discussed. These ideas have been passed along to Management and the Board. Additional consultants will be visiting Moreland Courts later this month. The Facilities Committee will be meeting again in mid September to review the various options.

Solar Panels

By themselves, solar panels are not particularly useful for backup power. The solar panels must be used in association with high-capacity batteries in order to perform any backup function.

As solar panels have gotten cheaper and more efficient, they can be useful to replace some of the electricity provided by the Illuminating Company. The Facilities Committee has explored the installation of solar panels on the West Garage roof. The panels are dark and nearly non-reflective. Last reviewed, the cost of such an installation would have been about $140,000.

Budgetary concerns have stalled the effort. To date, there has been no concerted effort to figure out how to pay for solar panels at Moreland Courts. This is unfortunate since there may be actual savings to residents. Electricity generated by solar panels would reduce the amount of electric power purchased from the Illuminating Company. The savings from the lower cost of electricity might actually be greater than the cost of financing the solar panels.

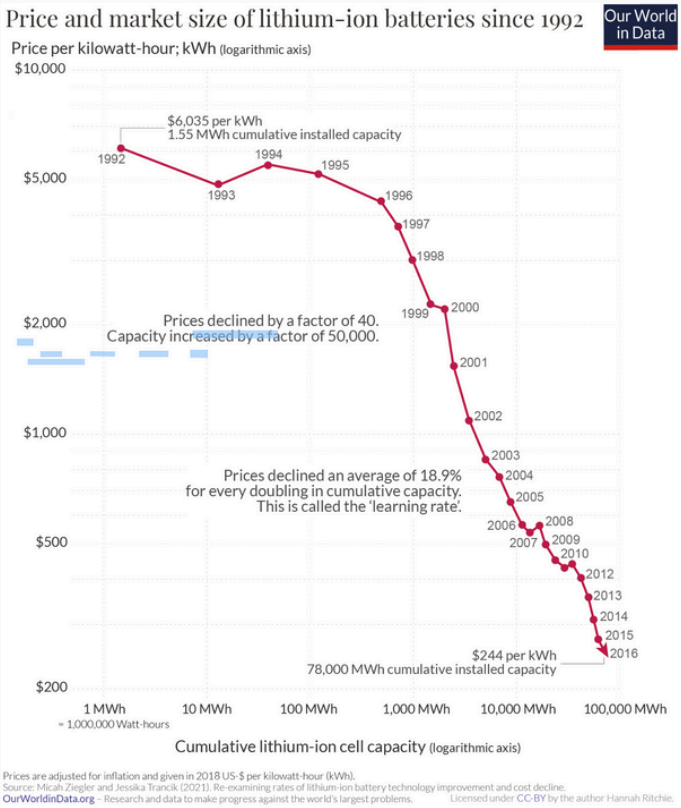
This is a subject for a different day, and a subsequent issue of the newsletter. Solar panels by themselves play no significant role for power backup for most of us at Moreland Courts.

Jackery solar panel
200 Watts when the sun is shining, $700

A modern refrigerator/freezer will need on average, about 200 watts to operate (500 watts when on, zero watts when off). So, a single refrigerator/freezer would require multiple 200 watt solar panels plus batteries to operate through the day and night. Fewer panels would work with a large battery pack. However, when the batteries are exhausted, the power stops.

Proposed Moreland Courts West Garage roof project
Roughly 100,000 watts when the sun is shining, $140,000 with installation. Average power would be less than 50,000 watts.

Batteries



In the year 1800, Alessandro Volta invented the first chemical battery using copper and zinc disks. Rechargeable batteries came much later. The first lithium-ion battery was created in 1976, but did not become commercially available until 1991. To the left is a graph showing the rise of storage capacity and the dramatic fall in price from 1992 to 2016. In 1992 the cost for a Li-ion battery storing one kWh was over $6,000. In 2016, the cost dropped to $244 for a one kWh battery. The cost by the end of 2024 is expected to be $50 for a one kWh battery. That is still expensive.

If Moreland Courts were cost-indifferent, battery backup would be the way to go. To follow a discussion about batteries, it is useful to understand the units used to describe power consumption and energy consumption.

Watts and kilowatts are used to describe power. One kilowatt is 1,000 watts. Watts are used to describe how much power is required to run a device at any given moment. When a 100-watt incandescent light bulb is turned on, it requires 100 watts to keep it on.

Watt-hours (Wh) and kilowatt-hours (kWh) are units of energy. If that 100-watt bulb is on for 10 hours, it has consumed 1,000 Wh, or one kWh of energy. If the bulb is on for 20 hours, it consumes two kWh. Energy (Wh or kWh) equals power (watts or kW) multiplied by time (hours).

So, how much power does a residence at Moreland Courts require? If multiple air conditioners are running during the day, way over 1,000 watts of power are required. If very little is running at night while people are sleeping, less than 1,000 watts will generally be required. Let us assume that on average, a household requires 1,000 watts, more or less.

There are 147 residences at Moreland Courts requiring on average, 1,000 watts of power each. Then there are the common areas, boilers, elevators, and more. So, let us make the crude approximation that the average power need of Moreland Courts is 200,000 watts, or 200kW.

If we multiply 200kW times 24 hours, we get 4,800 kilowatt-hours (kWh) of ENERGY required to keep Moreland Courts running for a day. So, if Moreland Courts decided to buy a battery for backup capable of running Moreland Courts for five days, a 24,000kWh battery would be required.

The price of large batteries have dropped dramatically, estimated to be as low as $50 per kWh in 2024. That would mean our battery would cost $1.2 million (installation not included). Extra components and installation would add a hefty cost. Maybe we could get away with half that, but the cost of installation would not be materially affected. These estimates are really crude because there are so many variables. What is not clear is how many households would be willing to contribute their share of what would likely be a multi-million-dollar project.

The Role of Batteries For Individual Residences

For those who live in a house and wish to have backup power, the usual solution is a generator. Unfortunately, an outdoor generator for an individual residence at Moreland Courts may not be practical. To some extent, battery backup can provide answers for us.

After encountering multiple power failures, most of us have battery-powered light sources. Some of us have small rechargeable batteries that can charge a cell phone. For most of us, the biggest problems during a blackout become the refrigerator and freezer.

On a personal note, I explored options sufficient to back up those appliances. Tesla has been a leader providing residential battery backup, usually in conjunction with solar panels. One Tesla wall-mounted battery stores 13.5 kWh. That would be sufficient to keep the refrigerator/freezer running for less than three days. The Tesla web site referred me to Kokosing solar of Ohio who quoted purchase and installation of a single Tesla Powerwall battery at over $30,000. Undoubtedly, there are less expensive options for a permanent installation, but I went in a different direction.

Several companies manufacture portable battery systems that can be recharged from a power outlet, car battery, or solar panels. I chose to purchase a Jackery Explorer 2000 Plus for just under $2,000. This stores 2 kWh which will keep the refrigerator/freezer going for half a day, hardly a complete solution. The Explorer 2000 weighs 60 pounds, has wheels and an extendable handle, and can be rolled like a suitcase. As long as the charging station in the West Garage is working from Circuit 3, the battery can be recharged.

It remains to be seen whether a backup system dependent upon Circuit 3 rather than generators will be installed at Moreland Courts. If it is, emergency power outlets could be placed in close proximity to each of the units at Moreland Courts, or at least in the basements of each building. Then, it will no longer be necessary for me to roll my battery to the West Garage to recharge. In fact, the Explorer 2000 can remain plugged in while it is powering the refrigerator/freezer and a few lights. Extension cords of sufficient capacity can be used to get the power where it is needed.

When the Lights Went Out

by Jessica Schreiber

On Tuesday afternoon, August 6, I looked up as we drove out of the West Garage onto Cormere Avenue. The sky looked overcast with some cloud formations, but not particularly menacing. I wondered out loud, "Where is the rain that was forecast for today?"

Soon, the answer came crashing down while we were shopping for groceries at Heinen's. As we were checking out, sheets of rain were moving sideways outdoors. People in the checkout line murmured about tornado warnings.

After waiting, the rain and wind abated ever so slightly. We made a run for the car and soaked to the bone, headed towards home. When we reached the intersection of Shaker, Coventry, and Haddam, the traffic lights were out. That was our first clue of what was to come.

Those of us who live at Moreland Courts are familiar with power outages. Usually of short duration, they often arrive at inconvenient times, like when friends are arriving for dinner, or when we are trying to convince our home-owning friends that they should downsize and discover the joys of condominium living.

We spent a quiet evening in the darkness with a few LED lanterns. We skipped dinner, drank wine, read by flashlights, and crashed early.

The next morning, I canceled a walk in the Shaker Nature Center with a friend. She too was without power. I slept late and felt achy. Deprived of my morning coffee, I was suffering from caffeine withdrawal.

My husband decided to go out and explore. He walked over to Larchmere and Shaker Lakes to assess the damage. When he returned, he reported seeing many fallen trees and power lines dangling on the sidewalk. "We are in this for a long haul," he predicted.

He left to buy dry ice for the freezer and refrigerator to prevent food spoilage.

I read in *The Plain Dealer* that at least 300,000 homes in northeast Ohio were without power. We were told to expect power to be restored in five days. Five days!!!

That evening, I walked the backline of our complex to see what was happening outside. A neighbor walked towards me, dressed to the 9's. It was her anniversary and she had planned to make a special dinner for her husband. Instead, they were going out to Poppy, a restaurant on Larchmere. "When are we going to get a backup generator for times such as these?" she lamented.

Neighbors living in the Courts Building gathered outdoors to enjoy the warm summer evening and gentle breeze. Sitting on benches, they ate strawberry shortcake while shooting the breeze. I was invited to join them. A young mother, alone with her baby, dropped by to visit. The neighbors hatched a plan to have a barbecue in the picnic area the next evening to grill frozen and refrigerator foods before they spoiled.

The following morning, we checked in on our nonagenarian neighbor who lives two floors above. Her son and grandson were visiting from out of town. A game of monopoly was set up on the table. Time had slowed down for everyone, and people were finding ways to cope while waiting for the lights to come back on. We dropped off some dry ice for her freezer. In exchange, our neighbor gave us some defrosting cod to bring to the barbecue.

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When the Lights Went Out

Continued

In the early evening, a group of about 20+ Moreland Courts neighbors showed up in the picnic area to enjoy fresh grilled seafood, burgers and hot dogs, as well as salads, side dishes, desserts and beverages that people brought to share. New neighbors showed up with a box of chocolates as they introduced themselves. It was a magical moment that reminded me of why I love living at Moreland Courts.The fun was precipitously interrupted by a downpour of rain that brought the evening to a sudden end.

Meanwhile our amazing staff worked overtime to make sure everyone was safe. They checked in on residents on oxygen, the frail, and mobility impaired. LED lights were installed throughout the common areas so people could find their way around. We received frequent eBlasts from management apprising us of the situation. Staff set up a charging station in the West Garage near the wash area, powered by the still functioning Circuit 3. People huddled around outlets like cavemen over a fire. Neighbors who had never met before, engaged in lengthy conversations while they waited patiently for their iPhones and electronic devices to be charged.

Late Friday afternoon, the lights came back on. We made a date to see a movie with friends. Life could return to normal! Finally, we had lights, a functioning kitchen, washer and dryer, and, best of all, I could enjoy a hot shower! And yet, I felt a tinge of nostalgia for the time when the lights went out at Moreland Courts – a moment when we all came together, staff and residents, as one community, to reach out and help each other, to slow the pace, to take time to break bread together, and to come to know each other a little better, a bit deeper.

Coulda, Woulda, Shoulda

Reflections on three days without power

by Jeanne Somers

The next time the lights go out at Moreland Courts, I am resolved to be better prepared.

- I will follow emergency preparedness recommendations from the Federal Emergency Management Agency (https://www.ready.gov/kit), the American Red Cross (https://www.redcross.org/get-help), and the Public Utilities Commission of Ohio (https://puco.ohio.gov/utilities/electricity/resources/electric-power-outages-a-puco-guide-to-being-prepared). These include:
  - Build an emergency preparedness kit, including non-perishable food, extra batteries, a battery operated NOAA Weather radio (https://weather.gov/nwr).
  - Unplug all major appliances and electronics to protect them from a possible power surge when the power comes back on.
  - Never even think about lighting a candle and risking a house fire.
- Instead of sitting in the car to charge my phone, I will use my newly-acquired, portable high-speed battery charging "power bank" (the INUI Portable Charger, with a 5 star rating from 60,500 people, is available on Amazon for $24).
- Instead of stumbling around with my collection of cheap drugstore flashlights, I will illuminate my 1,600 square feet with my brand new LED 360 Etekcity camping lantern, which provides 50 hours of stable lighting (2 pack on Amazon for $14).
- I will resist stockpiling (and losing) many tubs of Mitchell's ice cream, which does not keep well in a standard Coleman ice chest.

The Great Blackout of 2003

by Bill Lang

The morning of August 14, 2003, the temperature was in the low 70's in the Cleveland area, nothing unusual for that time of year a little over twenty years ago. The devastating events of September 11, 2001, were still fresh in the minds of nearly every citizen in the country.

We lived in Avon Lake. I don't know why I am admitting we lived there … for a long time. I worked eighty hours a week in an office there. We moved there so I could know my own children and remember what their mother looked like. As the day wore on and the summer heat baked the neighborhood, Laura, the young woman next door, who had been our babysitter for several years, came over to take a dip in our pool. It was 3:30 PM that muggy afternoon.

We were making Italian potato salad for the small rehearsal dinner later that day. A large steel pot of potatoes in water sat on the electric range, one of the old ones with black coils made of some type of substance not found in nature. Two prongs sprang from each coil and plugged into metal box-like thingies that powered each coil.

The pot wasn't bubbling … after two hours … not even a little. What could be wrong?

Oh, a little more necessary background — I have a liberal arts education, not a degree in science or a degree in engineering. Maybe I should be honest and call it a baseball degree; my baseball degree gave me enough over-confidence to take on tasks well above my liberal arts pay grade.

I moronically thought I had forgotten to turn the … burner on under the pot, but the knob was turned up to the highest temperature. I moved the pot onto the counter and checked to see if the coil was hot. It was not the slightest bit warm. I yanked on the heating element — I was amazed with the ease it came out of the receptacle. I removed one of the other burners, a smaller diameter version. Why not put the smaller element I just removed and stick the two prongs in the plug-in thing to test whether the heating element was faulty or whether the circuit was bad? So, I tried that.

Blue lightning arced from the burner over my left shoulder, just missing me. It shot across the family room with a great CR-R-R-A-A-CK that sent our startled Boxer dog crashing into the coffee table. At that very moment, the air conditioning flicked off and on and off and on and OFF. The electric stovetop looked like a runway with two heavy black lines leading to the coil that I had plugged in. I touched the element with my fingertip. I drew a little squiggle in a thin layer of black dust. Who knew electricity could do such things? Lightning and the power of nature were one thing. Lights and stoves and pool pumps and heaters were another.

Everything seemed okay, except the electric stove was no longer working. The air conditioner swooned off. I noticed Laura, standing in the pool's shallow end, waving, beckoning me. I opened the deck door. The pool pump had stopped running. And I could not hear the incessant summer whine of heat pump fans in the neighborhood.

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The Great Blackout of 2003

Continued

Laura's radiologist father bounced down the steps at the back of his house and drifted over to our fence, using a full sentence in a rather friendly voice for the first time ("He's a doctor. He hates lawyers,"Laura confessed shortly after our house was completed and we moved in.) He told me his power was out. So was ours, I told him.

"In all, roughly 50 million people were impacted when the grid began to go down on the afternoon of August 14, 2003, after a series of failures traced back to Ohio." — Moon, B. August 14, 2003: Remembering the Great Blackout, Wired (Aug. 14, 2008).

Much of the northeastern U.S. and Great Lakes region, including north into Ontario, including Toronto, was plunged into afternoon heat and nighttime darkness for up to four days. Twenty-one power plants shut down within three minutes shortly after four o'clock on that hot afternoon.

A small substation south of Avon Lake owned by FirstEnergy started the international cascade of electrical outages, the company surmising the source had been a "branch" shorting out something somewhere. Someone with only a liberal arts education could read between the lines of that lame excuse.

One FirstEnergy customer knows what really happened.

This is a map of the area covered by Bill's 2003 blackout.

In September 2023, these charts were included in Volume 15 of the newsletter. We are including them again.

REFRIGERATED FOODS: When to save and when to discard

MEAT, POULTRY, SEAFOOD	Above 40°F > 2 hours
Raw or leftover cooked meat, poultry, fish, or seafood; soy meat substitutes	Discard
Thawing meat or poultry	Discard
Salads: Meat, tuna, shrimp, chicken or egg salad	Discard
Gravy, stuffing, broth	Discard
Lunchmeats, hot dogs, bacon, sausage, dried beef	Discard
Pizza – with any topping	Discard
Canned hams labeled *"Keep Refrigerated"*	Discard
Canned meats and fish, opened	Discard
Casseroles, soups, stews	Discard
CHEESES	**Above 40°F > 2 hours**
Soft Cheeses: blue/bleu, Roquefort, Brie, Camembert, cottage, cream, Edam, Monterey Jack, ricotta, mozzarella, Muenster, Neufchatel, queso	Discard
Hard Cheeses: Cheddar, Colby, Swiss, Parmesan, provolone, Romano	Safe
Processed Cheeses	Safe
Shredded Cheeses	Discard
Low-fat Cheeses	Discard
Grated Parmesan, Romano, or combination (in can or jar)	Safe
DAIRY	**Above 40°F > 2 hours**
Milk, cream, sour cream, buttermilk, evaporated milk, yogurt, eggnog, soy milk	Discard
Butter, margarine	Safe
EGGS	**Above 40°F > 2 hours**
Fresh eggs, hard-cooked in shell, egg dishes, egg products	Discard
Custards and puddings, quiche	Discard
FRUITS	**Above 40°F > 2 hours**
Fresh fruits, cut	Discard
Fruit juices, opened	Safe
Canned fruits, opened	Safe
Fresh fruits, coconut, raisins, dried fruits, candied fruits, dates	Safe

VEGETABLES	Above 40°F > 2 hours
Fresh mushrooms, herbs, spices	Safe
Greens, pre-cut, pre-washed, packaged	Discard
Vegetables, raw	Safe
Vegetables, cooked; tofu	Discard
Vegetable juice, opened	Discard
Baked potatoes	Discard
Commercial garlic in oil	Discard
Potato Salad	Discard
Casseroles, soups, stews	Discard
SAUCES, SPREADS, JAMS	**Above 40°F > 2 hours**
Opened mayonnaise, tartar sauce, horseradish	Discard if above 50°F >8 hrs.
Peanut butter	Safe
Jelly, relish, taco sauce, mustard, catsup, olives, pickles	Safe
Worcestershire, soy, barbecue, hoisin sauces	Safe
Fish sauces, oyster sauce	Discard
Opened vinegar-based dressings	Safe
Opened creamy-based dressings	Discard
Spaghetti sauce, opened jar	Discard
BREAD, CAKES, COOKIES, PASTA	**Above 40°F > 2 hours**
Bread, rolls, cakes, muffins, quick breads, tortillas	Safe
Refrigerator biscuits, rolls, cookie dough	Discard
Cooked pasta, rice, potatoes	Discard
Pasta salads with mayonnaise or vinaigrette	Discard
Fresh pasta	Discard
Cheesecake	Discard
Breakfast foods – waffles, pancakes, bagels	Safe
PIES, PASTRY	**Above 40°F > 2 hours**
Pastries, cream filled	Discard
Pies: custard, cheese-filled or chiffon; quiche	Discard
Pies, fruit	Safe

Source: www.foodsafety.gov

FROZEN FOODS: When to save and when to discard

FOOD	Still contains ice crystals and feels as cold as if refrigerated	Thawed. Held above 40 °F for over 2 hours
MEAT, POULTRY, SEAFOOD		
Beef, veal, lamb, pork, and ground meats	Refreeze	Discard
Poultry and ground poultry	Refreeze	Discard
Variety meats (liver, kidney, heart, chitterlings)	Refreeze	Discard
Casseroles, stews, soups	Refreeze	Discard
Fish, shellfish, breaded seafood products	Refreeze. However, there will be some texture and flavor loss.	Discard
DAIRY		
Milk	Refreeze. May lose some texture.	Discard
Eggs (out of shell) and egg products	Refreeze	Discard
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semi-soft)	Refreeze. May lose some texture.	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Casseroles containing milk, cream, eggs, soft cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
FRUITS		
Home or commercially packaged	Refreeze. Will change in texture and flavor.	Refreeze. Discard if mold, yeasty smell or sliminess develops.
Juices	Refreeze	Refreeze. Discard if mold, yeasty smell or sliminess develops.
VEGETABLES		
Home or commercially packaged or blanched	Refreeze. May suffer texture and flavor loss.	Discard after held above 40 °F for 6 hours.
Juices	Refreeze	Discard after held above 40 °F for 6 hours.
BREADS, PASTRIES		
Breads, rolls, muffins, cakes (without custard fillings)	Refreeze	Refreeze
Cakes, pies, pastries with custard or cheese filling	Refreeze	Discard
Pie crusts, commercial and homemade bread dough	Refreeze. Some quality loss may occur.	Refreeze. Quality loss is considerable
OTHER		
Casseroles – pasta, rice based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze
Breakfast items – waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty items (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

Source: www.foodsafety.gov

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SHAKER SQUARE
EST. 1929

September Happenings at Shaker Square

- *Café Indigo coming to the former Dewey's space this Fall*

- *Last concert for summer on the Square - rescheduled for Septembrer 12, 6 PM*
- *Co-owners of Shaker Square invite the community to see and comment on a preliminary vision for the Square.*

September 19 from 4-7 PM
Former Dewey's Coffee Space

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