ROXBURY HISTORIC TRUST

Drakesville Times

Exploring History in the New Jersey Highlands

Drawings John Bolt Architect

Semi-annual Newsletter | Issue No. 10 May 2015 | $1.00

President's Letter

May 2015 is ushering in perhaps the most intensive period in the Trust's brief history. At the King Store, North East Roof Maintenance has removed windows for restoration. The openings are boarded up and waiting. Across the lawn the next construction project is about to get underway, to strengthen the ground floor and replace the electrical wiring in the King House. Both projects are funded by the Morris County Historic Preservation Trust and Roxbury Open Space. Charlie Alpaugh, along with Judy Frank, Scott Fullerton and Gary Ribe from Roxbury Rotary, miraculously emptied the basement on April 23, ready for Nick Restoration and Ahera Consultants to carry out asbestos remediation on April 28. RHT continues to receive General Operating Support funds from the New Jersey Historical Commission, a division of the Department of State.

Having been winterized since December, the King House and the other museums were open again on April 12 with a preview at the King House of the new AT&T 1ESS fiftieth anniversary exhibit, which will have a grand opening after the construction work in late summer (see the article on page 2). For June through July the site will continue to host its advertised openings, and visitors will have a chance to peak at the progress while the construction work is ongoing.

Another application has been submitted to the Morris County Historic Preservation Trust, for a 2015 Construction Grant for second floor reinforcement and foundation repair at the King House, in the sum of $95,647 with a match of $23,911 committed from Roxbury Township Open Space. Against a backdrop of threats to historic preservation funding, the Trustees greatly appreciate Roxbury Township's support, and hope that readers will continue to express their approval and vote for historic preservation at the local and state levels at every opportunity. Lost buildings are gone forever.

However, for lost artifacts there can be survival, which brings me to a new acquisition for RHT. We received a call from Monica Scozzafava, archivist at Boonton Historical Society, to say that they had received items from their former president, Arline Dempsey Fowler (photo at right), including some c. 1811 wedding stockings, and a baby dress, for Clarkson S. King, born 1814 at Drakesville to parents Eliza and William King. If the hand written note about their origins had not been with them, these items would never have found their way back to Drakesville. We are researching the link to Theodore F. King.

RHT welcomes new volunteers, Karen Coates and Marillyn Cunningham who are helping the Education, Exhibits (and Events) committee. Many thanks to them and the dedicated core of volunteers, who give their invaluable time and skill so generously.

Miriam

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RHT Mission:

The Roxbury Historic Trust, Inc. provides unique opportunities for discovery of our shared heritage through interpretation of the King Store and King House Museums. Visitors explore the roles of the King and Riggs families in the development of the Morris Canal, the Roxbury community and the region, from the 1820s through the 1930s, a time of tremendous growth and innovation in our nation.

Roxbury Historic Trust
209 Main Street
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RHT CALENDAR of EVENTS

Sunday, May 17 - Celebrate Preservation from 1 - 4 PM Photos of buildings receiving Roxbury Township Preservation Awards, hot dogs, etc.

Sunday, June 14 - Regular opening from 1 - 4 PM followed by the Annual Meeting including a talk on King Site archeology by Jim Lee. All welcome!

Sunday, July 12 - Ice Cream Social from 1 - 4 PM

Saturday, August 8 - Peach Festival/Ledgewood Gala Day, 10:00 AM - 3 PM at the Ledgewood Baptist Church

Sunday, August 9 - Regular opening from 1 - 4 PM

Saturday, September 12 - Suckasunny Day on Main Street, Succasunna: 10 AM - 3 PM

Sunday, September 13 - Regular opening, 1 - 4 PM

Saturday, October 10 - Pathways of History Museum Tour first day from 10 AM - 4 PM

Sunday, October 11 - Living History Day and the second day of Pathways of History from Noon - 4 PM

Sunday, November 8 - Regular opening from 1 - 4 PM, Veterans Day theme including War memorabilia

Friday, December 4 - Salt Box Christmas and Historic King House Celebration from 6 - 9 PM

Sunday, December 13 - Holiday opening from 1 - 4 PM (event to be announced)

Friday, December 18 - Evening get together, 5 - 7 PM

Thursday, December 31 - Membership renewals due for 2016!!

Telephone History in Succasunna – The 1ESS Central Office Switch 50th

Devlin M. Gualtieri

As industry has embraced computers, many jobs have been lost to automation. The educational bar has been raised, and students need to stay in school longer just to get on the lowest rung of the employment ladder. As the Red Queen said in *Through the Looking-Glass*, "...It takes all the running you can do, to keep in the same place."[1]

The loss of jobs to automation is not just a recent effect. At the turn of the 20th century, scores of (mostly) young women were employed as telephone switchboard operators. They were essential to telephone communication, since early telephones didn't have number dials (photo below left), and the only way that your call could be connected to another telephone is to have your telephone wires manually connected to others. The number of telephone switchboard operators in the United States peaked in the 1930s at about a quarter million.[2] Today, there are only about 10,000 telephone operators in the US, few of whom are still responsible for connecting calls.[3]

The early telephone system was a modern version of the telegraph in which the "keys" and "sounders" at telegraph station points were replaced by microphones and earphones. A telegraph connection was just a long wire connecting two telegraph stations, and these stations could only send messages between their two points, since that's where the wire was. If you wanted to connect to a multitude of stations, as in having a telephone in every house, you needed a multitude of wires. Of course, it's impractical to have a wire connecting every house to every other house. If you had a thousand houses in a city, each house would need a wire connected to every one of the other 999 to ensure that a call could be placed to those houses. Not only that, but the homeowner himself would need to connect his telephone to the appropriate wire to reach the desired party. The telephone system has a different "network topology" in which a single wire (actually, a wire pair) from each home connects it to a central office. In that central office, a telephone operator would connect the caller's wire to the wire of the desired call recipient.

A telephone operator might be able to handle connections between several hundred houses, but things get out of hand when thousands are involved. When a call had to connect from one group of a few hundred to someone outside the group, the operator would instead connect the call to the operator in charge of a different group of which the intended recipient was a part. In this way, a city with several thousand homes could easily have a universal telephone system with a few tens of operators.

Calling outside a local area - that is, long distance calling - could operate in the same manner, except for the fact that your voice over those longer wires would become a whisper after ten miles. The problem of long distance voice signaling was solved by inserting amplifiers at points along these long wires. In the first half of the 20th century, the amplifiers were built from vacuum tubes. These vacuum tube amplifiers required a lot of power, they generated a lot of heat, and they were hard to maintain. Long distance calls were more expensive, since the technology that enabled them was likewise expensive. When transistors replaced vacuum tubes at the end of the 20th century, long distance calling became much less expensive.

Eventually, the functions of telephone operators were replaced through automation. Automation in the early 20th century, long before the invention of the transistor, was accomplished using electromechanical relays. These relays were rotary devices in which electrical connections were made by rotating an armature to a specific location. These relays would step from place to place in synchrony with the pulse signal generated by the telephone dial. In that way, the dialed numbers could be decoded into the proper electrical connections.

Electromechanical relays, as all mechanical components, will fail after too many operations. The relay-switched telephone network had the additional problem that it was slow. The dials on telephones moved slowly, since their pulses couldn't outrun the speed of the relays. Both subscribers and the telephone company had an interest in a better switching technology. It's not a coincidence that the transistor was invented at a telephone company research center, Bell Laboratories, since better means of switching telephone signals had been a long-term goal of telephone research.

New Jersey Bell Switchman Fritz Blume checks circuit at ESS office in Succasunna, N. J. In foreground are some of the basic units of electronic switching left to right: dual sensor, permanent memory card, ferreed switch array, logic circuit pack(orange) and twistor memory sub-assembly.

The transistor enabled not only amplifiers for long distance calling and improved switching, but also computing. By the 1960s, it had become practical to use computers to enhance telephone switching. The first reliable, all-transistor electronic switching system, called a stored program control telephone exchange, was put into service in Succasunna, New Jersey, in 1965. A dedication ceremony was held on May 27, 1965, and the exchange, initially serving 200 of the town's 4,300 customers, began service on May 30, 1965. [4] Miniature magnetic "fereed" switches replaced the bulky electromechanical relays of older telephone exchanges. The exchange

was called the "Number One Electronic Switching System," abbreviated as 1ESS. 1ESS was designed for a peak capacity of 37,000-80,000 calls per hour, depending on the hardware configuration. New features enabled by the digital logic, including call waiting, call forwarding, conferencing, etc. had been previewed at the 1964 Worlds Fair. [5]

No. 1 ESS building at 144 Route 10 as it appeared in 1965

Circuit boards containing 64 magnetic reed relays arranged in an 8x8 matrix acted as a smaller, automated version of a telephone operator's plug board. Computers in the mid-1960s were primitive by today's standards. The computer of the 1ESS operated at a clock rate of about 200 kilohertz, which is 10,000 times slower than a typical desktop computer of today. The computer memory was likewise limited. The program memory, the memory dedicated to the operating instructions for the exchange. was contained on 2048 circuit card that provided 731,000 bytes of memory, just under a megabyte. This is 2,000 times smaller than the memory capacity of a cellphone.

This program memory was unlike the semiconductor memory of today. It was a magnetic memory type known as permanent magnet twistor in which digital data were stored in magnetized regions of a metal tape (Vicalloy). Twistor memory was invented at Bell Labs in 1957, but the technology was replaced by semiconductor memory a few years after 1ESS was operational. The 1ESS system had a further ferrite-core working memory, in common use at the time, to store data such as called telephone numbers. The core memory system had 8,000 words of 24 bit length. All told, the original 1965 1ESS was roughly equivalent in speed and memory to a 1977 Apple I desktop.

In 1976, improvements were made to existing 1ESS central office switches. The upgraded version, called 1AESS had a processor with a four-fold faster speed and computer disk storage, all in a quarter of the original volume. The circuitry used advanced integrated circuits and smaller reed relays. Thousands of 1ESS and 1AESS systems were deployed, but most, including Succasunna, were replaced in the 1990s by more advanced central office switches. A few 1AESS systems still remain, most of which are located in the Atlanta, Georgia, metropolitan area, the Saint Louis Missouri metropolitan area, and in the Dallas/Fort Worth Texas metropolitan area.

[1ESS photos courtesy Alcatel-Lucent Archives]

References

1. Lewis Carroll (Charles Dodgson), "Through the Looking-Glass," The Millennium Fulcrum Edition 1.7, via Project Gutenberg.

2. Janet M. Hooks, "Women's Occupations Through Seven Decades," Women's Bureau Bulletin No. 218, United States Department of Labor, June 9, 1947.

3. Occupational Employment and Wages, 43-2021 Telephone Operators, United States Department of Labor, Bureau of Labor Statistics, May 2013.

4. G.E. Schindler, Jr., Editor, "A History of Engineering and Science in the Bell System: Switching Technology (1925-1975), Bell Telephone Laboratories, Inc. 1982.

5. Larry Fast, private communication.

The Lost Church of Ledgewood

Rev. David Holwick

In the early years of our state the most substantial buildings in a town were often the churches. As time passed, many of the congregations outgrew their sanctuaries and moved to new structures, or they diminished and the sanctuaries were demolished or used for a different purpose. The website <www.njchurchscape.com/morris.html> gives information and photos on many of these abandoned churches but one is missing - the original Baptist Church of Ledgewood.

Baptists were relative latecomers to Roxbury. Starting in the 1840s there were enough Baptists in the area to conduct a Sunday School in the old Ledgewood School House. Every two weeks the pastor of the Schooley's Mountain (now Mt. Olive) Baptist Church would preach a sermon after the Sunday School was held. By the 1870s the congregation had grown enough that they decided to start their own church and 30 people transferred their membership from Schooley's Mountain and organized a Baptist church in Ledgewood, then known as Drakesville.

Since church groups always prefer a permanent structure to meet in, they raised money to build a new church at the top of Main Street. By May 1874 the basement was finished and services were started there. The "troglodyte" congregation must have been patient - the church cornerstone wasn't put into position until a year later (and can still be seen, except that it is now on the current church) and the upper structure took at least another year to finish, probably due to financial straits.

It was not a rich church. In the membership application letter they sent to the North Jersey Baptist Association they wrote, "We have not much of this world's goods, but we have faith and mean to work." The lack of funds put a lot of pressure on the early pastors, and their ministries tended to be short-lived. The founding pastor, Rev. John G. Entrekin, only stayed two years and none of the first seven pastors stayed more than five years. There were long periods where there was no regular pastor and the pulpit was filled with whoever they could get that week.

The final cost of the original church was the grand total of $5,000. It was built of wood and had abundant gingerbread that was popular in the Victorian era. The windows seem to have been plain glass though there was a simple rosette window near the peak with geometric patterns in stained glass. The interior had a balcony across the back which was popular with the youth. There is even a story of Bob Stark's uncle Earl, a teenager back then, who sneaked into the balcony during a special service and fell asleep there; he awoke at 2:00 a.m. to find the church securely locked. There are numerous photos of the outside of the structure but only this one (below) that appears to have been taken within the church. It shows patriotic bunting across the front of the sanctuary and 42 members who are dressed up in antiquated costumes for a play.

The village of Drakesville was largely undeveloped back then and most of the roads were unpaved. Across the street from the church was a large mill pond. The remains of its dam can still be seen along the brook - the small pond created by former resident Sam Mino is on the same spot but is only a token reminder of the pond that once stretched from the mountain to Main Street. Numerous photos taken of "Gala Day" swimming races show the church in the background.

In 1905 Rev. Dare became the pastor and the church experienced steady growth. Interviews with

older members done in the 1980s revealed that he was considered very handsome and an excellent preacher; the interviewer was not able to determine which of those characteristics was considered most important. The town was renamed Ledgewood and a trolley line was built that ran down Main Street all the way to Newark.

The next positive development was the arrival of Rev. John Earle in 1914. He was conservative in theology, as almost all the Baptist preachers here have been, but he was committed to the Northern Baptist Convention and would not let his church leave the denomination as the Netcong church (now Grace) and Mt. Olive churches did. Rev. Earle was well-known for being stern and strict, against makeup, pants on women, modern music or frivolity of any kind. He wore a suit and tie even in his own home. If a teenage boy came to church without a coat and tie, he sent them home. Many young people attended the church nonetheless and the annual Children's Day service, held the second Sunday in June, dates back to our days in the old wooden chapel.

Sunday_preaching_(Billy_Sunday)_by_George_Bellows_in_Metropolitan_Magazine_May_1915

Earle may have been strict but he was also effective as an evangelist. One of the calling cards for a revival he conducted - two weeks long! - mentions a "'Billy Sunday' song service." Billy Sunday was a converted baseball player who followed in the steps of Dwight Moody and laid the foundation for Billy Graham; these three established modern revivalism. We do not know how emotional Rev. Earle's sermons were in this period (later members thought he was rather long-winded and dry) but he added 124 members in just a few years. They soon outgrew the little wooden church and there was talk of adding an addition to it. Others had bigger thoughts and set their eyes on a plot of land farther down Main Street that was owned by Mr. King. He was a good Baptist and donated the land to the church.

In 1916 construction began on the current Ledgewood Baptist Church. The old cornerstone was brought down and placed opposite the new cornerstone on the church tower. The new church cost three times as much ($15,000) but was paid off within six years. The back extension of the church was not completed until the 1930s so the old church continued to be used for Sunday School classes. Local fraternal organizations were also allowed to use it. Some members recalled that the pews were removed and the young men played basketball in the old sanctuary. A photo from this period shows weeds growing up the outer wall. Mr. PeQueen eventually purchased the old church and converted it into a private home. In the 1980s it was made into commercial offices, which it remains today. The gingerbread is all gone and the tall windows have been reduced to normal size but the entryway on Main Street still recalls its more glorious origin.

The Return of Silas Riggs & Family

Janet Lordi

Visitors to the Museums at Drakesville on Sunday, December 14 were treated to a unique experience when students from Riverview and Valleyview Schools in Denville took over the interpretation of the three museum buildings. This innovative project was the brain-child of Roxbury resident and Denville teacher Brenda Harrower, and fellow Denville teacher, Renee Sudol. The idea began to take shape when Brenda visited the museums in December of 2013.

Early in 2014, Roxbury teacher and former RHT Trustee, Nicole Barbato met with Brenda and several representatives of RHT to review the NJ curriculum standards in relation to the museum periods, themes and exhibits. Bob Morris prepared a cross-referenced guide to facilitate interpretation and field trip permissions.

As reported previously in Drakesville Times No. 8, on April 15, 2014, forty-four sophomores from Ms. Barbato's Social Studies class at Roxbury High School had traced the path of the Morris Canal from Lake Hopatcong to Ledgewood by bus, where they then walked up Plane 2 East and down Canal Street to visit the King House and Store. Along the route the students accessed a set of historical and recent photographs of canal features on their smart phones and tablets using a previously set up QR code, a new twist for us.

Meanwhile, the Education and Exhibits Committee met with Brenda to discuss what re-enactment themes her students might take part in later in the season. Brenda took the ideas back to her 3rd and 4th grade enrichment students, and the class work began. Meeting with her students once each week, they researched the time period of the canal store, the King family and the Riggs family in order to develop the roles they might enact, how a general store operated, what the people of that time wore, entertainments, and other aspects of 19th century life in Drakesville. The students completed eight hours of research before they made their first visit to Drakesville.

In June of 2014 the Denville students came on a field trip to the Museums that included a visit to the turbine at Lake Hopatcong and a walk up the inclined plane. The students took photos, made notes and continued to refine their plans about what each might do during a museum opening. Their photos led to costume inspirations. The re-enacting visit was scheduled for December. Parents became involved in costume making and plans for 'refreshments'.

"Pierre" ready to take your picture and email it directly ti you

September of 2014 brought in new 3rd graders, and ultimately, the project was adjusted to include them with the now 4th and 5th graders. The older students helped the third graders with ideas of job allocations and were involved in planning each room to be interpreted. By November of 2014, the students were ready to return for a second visit. After this they began to 'story-board' their ideas of what each room in the King House might have in it for them to interpret. Students were responsible for finding out as much as they could about what a head of household, a maid or postman might do, what a store cashier did, how farmers worked, etc. Twigs were collected from the grounds of all around the site for the students to make a Lena'pe ring-toss game for use in December.

"Can I help you with anything?"

Hearth Cooking at the Silas Riggs House

Back at school students researched how to make 'postage' stamps and tea party invitations; they made chocolate and fondant candies. They organized a photographer for pictures in their dress-up clothes.

Many other photos were taken of historical King Store merchandise and turned into postcards (still for sale in the store). Nineteenth century 'medicines' such as licorice were researched and sold in the store.

Brenda and her assistants spent two days installing everything needed to transform the King House and Store for the reenactment. Finally, on Sunday December 14th, the students, their parents, siblings and teachers arrived at the King House, Canal Store and the Riggs House and took their places as Silas Riggs, Theodore F. King, Louise King, her visitor, a French photographer, multiple store clerks, etc.. Games were set up in the Kings' second floor bedroom. The maid moved from room to room with her bucket and mop cleaning as she went. At the store, there were dried foods including sugar, salt, peanuts, different types of beans, etc. in glass jars that could be weighed out or measured and 'sold' to customers. The usual adult interpreters had a day off and joined the fun, shopping and visiting, and delighting in the efforts and enthusiasm of these exceptional students.

[photos by Brian Corsi and Bob Morris]

Visit the Roxbury Historic Trust online at http://www.roxburynewjersey.com/trust.htm or Facebook Museums at Drakesville

Roxbury Historic Trust, Inc. DRAKESVILLE TIMES Issue No. 10 May 2015

209 Main Street / Ledgewood, NJ 07852

MUSEUMS AT DRAKESVILLE

I wish to renew my membership in or join the Roxbury Historic Trust, Inc. *(click for Paypal link)*

Name _____ Date _____

Phone number _____ Email address _____

Mailing address _____

_____

Annual Membership Dues - _____ Individual $25.00, Corporate $125

I would like to help fund a special project: _____ King House Mural Restoration
(Funding goal: $15,000)

_____King House wheel chair ramp

I would like to help the Trust fund continuing restoration _____ General Donation

_____ Total enclosed

Please mail information with payment to: *Roxbury Historic Trust, Inc., 209 Main Street, Ledgewood, NJ 07852*

I would like to volunteer_____ Skills / interests _____