

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

May 30, 2018

Mr. Keven Patterson
GreenLife Energy Solution, LLC
3350 Riverwood Parkway
Suite 1900
Atlanta, GA 30339

Re: Structural Evaluation – English Avenue Elementary School, 627 English Avenue,
Atlanta, GA
Project No. ST-18-118

Dear Mr. Patterson:

At your request, Maureen L. Davis, PE, Frank Davis, EIT and Yong Cheng Soo, EIT performed a limited inspection of the English Avenue Elementary School located at 627 English Avenue in Atlanta, Georgia on April 3, 2018. The purpose of our evaluation was to conduct a structural assessment of the existing building at this location and to make recommendations regarding the possibility of rehabilitating the building.

This report is prepared for the exclusive use of Mr. Keven Patterson for specific application to the building at the above referenced address. The conclusions and recommendations herein are rendered using generally accepted standards for construction and engineering practice in the State of Georgia. These conclusions are based upon information provided by you, the results of our visual inspection of the indicated parts of the building, and our past experience. No intrusive or other testing was performed, nor were building materials removed for further observations.

We have reviewed the following documents prior to writing my report and some of my opinions are based upon them:

1. MACTEC Engineering and Consulting, Inc. (MACTEC), Phase I Environmental Site Assessment (ESA), Dated January 7, 2010.
2. International Building Code (IBC), 2012 Edition.

No other warranty, expressed or implied, is made, nor is any other guarantee given other than that professional care and standards were applied.

DESCRIPTION AND BACKGROUND

The English Avenue Elementary School Building located at 627 English Avenue in Atlanta, Georgia is a two-story structure with a basement. The original building consist of the center section with additions constructed at both the left* and right sides (*Photos 1-10*). The foundation consists of a combination of concrete, concrete masonry unit (CMU) block, terracotta brick and structural brick (multi-wythe brick). There is a slab-on-grade and the basement level. The floor systems consists of formed and poured concrete on all levels of the left and right wing additions and a combination of steel beams and wood framing throughout the original section of the building. The exterior envelope consists of structural walls constructed of multi-wythe structural brick, terracotta brick and CMU block.

The original section of the school was constructed in 1910. This section of the building is two-stories in height with a full basement below. The original entrances are still present at the center of the building, providing access from both the front and the rear. The stairways at these locations provide access to the main floor level and the basement areas, but not to the second floor. At all three levels, a hallway extends the full length of the center of the building from left to right, providing access to individual classrooms and other areas.

The newer sections of the building extend at both the left and right sides. At both ends, the building was added to include additional space towards the rear, forming a U-shape. A large auditorium is present at the right side, with a separate entrance into the playground area along the rear of the building. Newer stairways are also present at each end of the building, providing access to all three levels. Additional entrances have also been added at each end of the building. It is unclear when the additions to the school were constructed. The school was closed in 1995 and has been vacant since, with limited access.

The site is sloped slightly from right to left and from rear to front. An asphalt parking area is located along the left side of the building, accessed only from English Avenue. Drainage on the site is excellent and the grounds have been fairly well-maintained.

Our assignment was to evaluate the structural components of the building and to comment on the existing conditions with respect to the possibility of rehabilitating the structure for use as a community center.

***Orientation is viewing the building from English Avenue.**

EVALUATION

During our evaluation, we attempted to access as much of the structure as possible to conduct our visual evaluation. However, some areas of the structure have collapsed floor and roof systems and were unsafe for us to access (*Photos 11-14*). Every attempt was made to evaluate these unsafe areas from adjacent parts of the building. Additionally, other areas remain covered with parge coatings, plaster or wall panels and could not be properly evaluated in their current condition.

A. **Foundation Assessment.** As stated above, the foundation consists of a combination of concrete, CMU block, terracotta brick and structural brick. There is a slab-on-grade at the basement level. Not all areas could be accessed due to the unsafe condition of the structure and/or due to being covered by wall coverings.

1. **Concrete.** The concrete elements of the foundation, basement slab and left and right wing stairs that we were able to evaluate are in good condition (*Photos 15-17*). There are some areas where minor damage was noted such as the surface of the concrete stairs (*Photo 18*). However, it is our opinion that these elements can be successfully repaired during rehabilitation.
2. **CMU Block.** There are a few areas where the foundation consists of CMU block. The CMU block foundation in these areas is in good condition. Of the areas that were accessed consisting of a CMU block foundation, no damage was noted (*Photo 19*). However, based on the condition of the structure, some minor damage may be discovered during rehabilitation. It is our opinion that any damaged areas can be successfully repaired if needed.
3. **Terracotta Brick.** The terracotta brick elements of the foundation that we were able to evaluate are in fair condition. There are some areas that have minor damage (*Photo 20*). However, it is our opinion that these elements can be successfully repaired during rehabilitation.
4. **Structural Brick.** The structural brick throughout the building consists of multi-wythe bricks. The structural brick elements of the foundation that we were able to evaluate are also in good condition (*Photo 21*). There are some areas that have minor damage. However, it is our opinion that these elements can be successfully repaired during rehabilitation.

B. **Structural Framing Assessment.** The structural framing elements consist of wood framing members, concrete, steel beams, CMU block and brick. As with the foundation elements, not all areas of the structural framing were visible due to the unsafe condition of the structure and/or being covered by wall coverings.

1. **Wood Framing.** The floor framing in the original building area consists primarily of wood framing elements. The wood floor systems are in very poor condition. In some areas, the wood framed floors have collapsed due to excessive deterioration from rot and continuous exposure to weather. In other areas, the wood framing components are near failure (*Photos 22-26*). **NOTE: Additional collapse of wood framed floor areas may occur prior to the start of any renovations. Access to the building should be limited because of this unsafe condition.**

The majority of the interior walls are also framed with wood and are lathed with plaster. Newer areas consist of plaster wall boards and drywall. Many of the wood framed wall systems are also severely deteriorated due to rot and continuous exposure to weather. Overall, the wood framed wall systems are in poor condition.

The failed roof system in many areas has resulted in water leaks which have caused the wood rot throughout the building. All wood framed components of the structure will require removal and replacement.

2. **Concrete.** The floor systems of the left and right wing additions are constructed of concrete lathed with plaster on the underside and topped with vinyl flooring tiles (*Photos 27-29*). The concrete floor systems are in good condition and can be rehabilitated. Once all materials have been removed, some minor damage may be discovered. However, it is our opinion that any minor damage can be successfully repaired if needed.

In addition to the concrete floor systems, the primary structural elements supporting the left and right wings consist of concrete columns. Not all columns or column surfaces were visible during our evaluation. Based on the evaluated areas, the columns are in good condition. As with the concrete floors, minor damage may be discovered as materials are removed. However, it is our opinion that any minor damage noted can be successfully repaired if needed.

3. **Steel Beams.** In some areas, steel beams are present. The beams are in place to provide support for large openings between the original building construction and the newer additions (*Photos 30 and 31*). The beam sections that were visible during our evaluation have been filled with brick between the top and bottom flanges. Therefore, the structural beams could not be properly evaluated.

In areas where sections of the beams are visible, the beams have experienced an excessive amount of surface rusting. A thorough evaluation of the steel beams will be required once the additional materials have been removed and the beams have been cleaned of debris and rust.

If the steel beams do not require removal and replacement, reinforcement of the beams will be necessary to meet the current IBC requirements. This work can be accomplished leaving the beams in place and adding additional steel.

4. **CMU Block.** Some of the walls, both interior and exterior, of the newer sections of the building, consist of CMU block. The majority of the CMU block has been used as wall construction for the bathroom and shower areas. Some classroom walls of the newer sections have also been constructed of CMU block (*Photo 32*).

A large percentage of the CMU block is in good condition. However, there are some areas, primarily the bathroom and shower, where sections of the CMU block walls have been damaged. The damage is primarily due to vandalism and removal of pipes from within the walls (*Photo 33*).

Although some damaged areas exist, the CMU block can be repaired.

5. **Structural Brick.** Some of the interior walls throughout the building have been constructed with structural brick. The interior brick walls are primarily located in the original construction area of the building. However, some structural brick walls are located in newer areas. Most of this material is in good condition and can remain in place.

- C. **Building Envelope Assessment.** The building envelope consists of concrete, CMU block, structural brick and terracotta brick. Overall, the building envelope is in good condition.

There are, however, some areas where these elements are in distress. We noted distress in areas where the bricks around door and window openings have collapsed. **The brick around the tops of the chimneys has also fallen away, particularly the tall chimney at the center rear of the building. Extreme caution should be exercised in this area.** Bricks are also falling off around the perimeter of the roof in some areas along with some of the parapet stone caps. **The bricks of the rear shed have experienced severe distress and will likely fall away from the structure. Extreme caution should be exercised in this area as well.** There are also some areas where stair-step cracks are present near grade level (*Photos 34-43*).

There are a number of areas where the exterior brick surface has been affected by water draining from the roof. Severe water stains are present, primarily around roof scuppers and downspouts. In some locations, water is entering into the cavity of the brick wythes and is leaching out through the brick mortar (*Photos 44-49*).

Vegetation in the form of vines is growing on the surface of some of the exterior brick. In some areas, the vines have grown through the brick and are visible from the interior of the building. There are also areas where trees have started to grow on top

of the lower roofs (*Photos 50-55*). Satellite imaging shows areas of possible vegetation growth on the main roof sections that have not collapsed.

Although the building envelope has some areas of distress, overall, the envelope of the structure is in good condition. The areas of distress can be successfully repaired during renovations.

D. **Roof Assessment.** The roof consists of wood framing in the area of the original building and auditorium. Additionally, based on satellite imaging, the roof covering over the atrium areas consists of metal roofing. The wood roof framing is in very poor condition. In some areas, the roof has completely collapsed due to wood rot (*Photo 56*).

All roof systems constructed with wood are severely deteriorated and require complete removal and replacement.

The left and right side wings roof system could not be properly verified as it remains covered with a plaster coating. However, it looks as if the roof construction consists of formed and poured concrete similar to that of the floor systems in this area (*Photos 57 and 58*). Additionally, in one location, terracotta brick can be seen where some of the plaster has fallen off.

Further evaluation of the roof systems in these areas is required in order to properly verify the roof construction.

CONCLUSION AND RECOMMENDATION

Overall, the main structural components of the English Avenue School Building located at 627 English Avenue in Atlanta, Georgia, are in good condition for the purpose of rehabilitating the structure. However, there are some elements such as all the wood framing and the wood framed roof system that must be replaced in their entirety.

During renovations, it is important to note that the existing components that are to remain will require support. Wall bracing and temporary shoring will be necessary to prevent further collapse of items that will remain in place. This temporary wall bracing and shoring must be designed by an Engineer and must be fully inspected prior to allowing workers into the distressed building. **We again emphasize that access to the building must be limited until all deteriorated materials are removed and the building is properly shored and braced. As noted above, additional collapse of wood framed floor and roof areas may occur prior to the start of any renovations.**

Once demolition work has been completed, we recommend that a follow-up structural evaluation be conducted to safely evaluate those items not assessed during this initial

evaluation. In addition, the follow-up evaluation must also be conducted to inspect the structural elements for damage caused during the demolition process.

Should further assistance be required or if additional information is necessary, I can be contacted in the office at 770-979-6650 or via e-mail at frank@haight-davis.com.

Sincerely,



Frank Davis, EIT
Project Manager



Maureen L. Davis, PE
Principal

Enclosures: Photographs



HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 1



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 2



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

HAIGHT DAVIS & ASSOCIATES, INC.
473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 3



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 4



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 5



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 6



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

HAIGHT DAVIS & ASSOCIATES, INC.
473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 7



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 8



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

HAIGHT DAVIS & ASSOCIATES, INC.
473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 9



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 10



English Avenue Elementary School, 627 English Avenue, Atlanta, GA.

PHOTO 11



Part of the structure has collapsed.

PHOTO 12



Part of the structure has collapsed.

PHOTO 13



Part of the structure has collapsed.

PHOTO 14



Part of the structure has collapsed.

PHOTO 15



Concrete slab at basement level is in good condition.

PHOTO 16



Concrete stairs are in good condition.

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court

Lawrenceville, GA 30044

(770) 979-6650

FAX (770) 979-1025

PHOTO 17



Concrete stairs are in good condition.

PHOTO 18



Some damage to concrete stairs that can be repaired.

PHOTO 19



CMU block foundation wall in good condition.

PHOTO 20



Terracotta brick foundation wall with minor damage that can be repaired.

PHOTO 21



Structural brick foundation wall that is in good condition.

PHOTO 22



Wood floor framing deteriorated and collapsed.

PHOTO 23



Wood floor framing deteriorated.

PHOTO 24



Wood floor framing deteriorated.

PHOTO 25



Wood floor framing deteriorated.

PHOTO 26



Wood floor framing deteriorated.

PHOTO 27



Concrete floors covered with plaster underneath.

PHOTO 28



Concrete floors with plaster underneath.

PHOTO 29



Concrete floors with plaster underneath.

PHOTO 30



Steel support beam.

PHOTO 31



Steel support beam.

PHOTO 32



Interior CMU block wall.

PHOTO 33



Interior CMU block wall damaged.

PHOTO 34



Exterior brick distress - cracking.

PHOTO 35



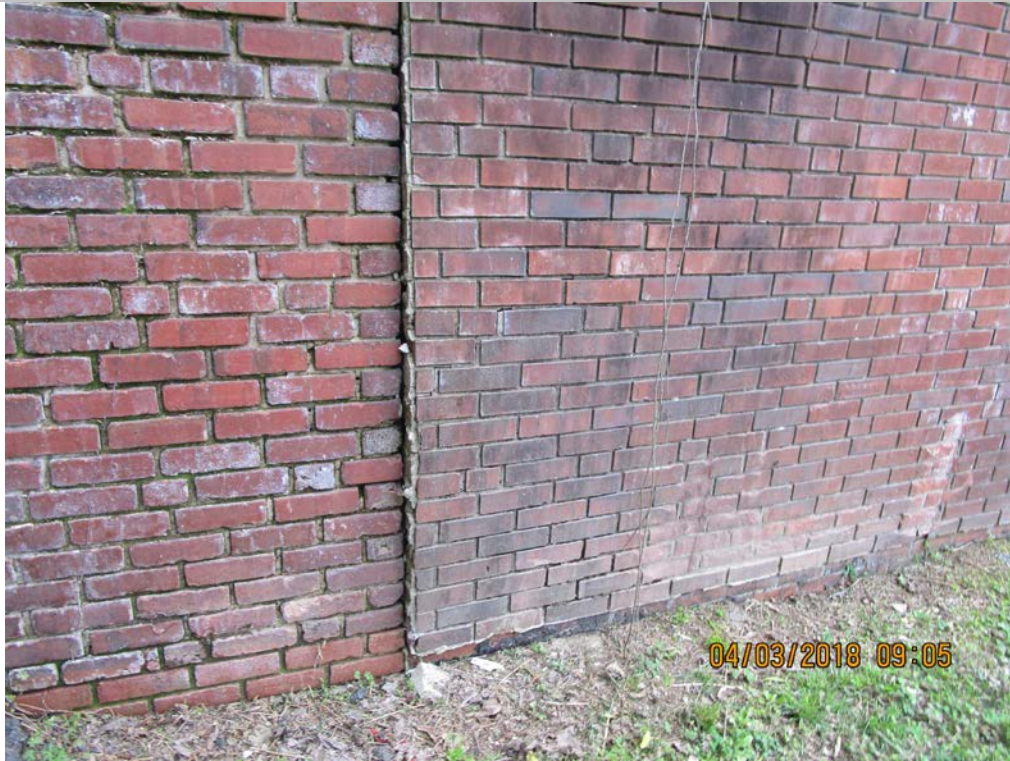
Exterior brick distress - cracking.

PHOTO 36



Exterior brick distress - cracking.

PHOTO 37



Exterior brick distress - cracking.

PHOTO 38



Exterior brick distress - cracking.

PHOTO 39



Exterior brick distress – cracking and collapse at attached storage.

PHOTO 40



Exterior brick distress – cracking and collapse at attached storage.

PHOTO 41



Exterior brick distress – cracking and collapse at top of boiler chimney.

PHOTO 42



Exterior brick distress - cracking.

PHOTO 43



Exterior brick distress - cracking.

PHOTO 44



Exterior brick distress – water staining.

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 45



Exterior brick distress – water staining.

PHOTO 46



Exterior brick distress – water staining.

PHOTO 47



Exterior brick distress – water staining.

PHOTO 48



Exterior brick distress – water staining.

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 49



Exterior brick distress – water staining.

PHOTO 50



Vegetation growing up building envelope.

HAIGHT DAVIS & ASSOCIATES, INC.

473 Cricket Ridge Court
Lawrenceville, GA 30044
(770) 979-6650
FAX (770) 979-1025

PHOTO 51



Vegetation growing up building envelope.

PHOTO 52



Vegetation growing up building envelope.

PHOTO 53



Vegetation growing up building envelope.

PHOTO 54



Vegetation growing through building envelope.

PHOTO 55



Vegetation growing on top of roof.

PHOTO 56



Roof framing collapsed.

PHOTO 57



Roof system of left and right wing additions covered with plaster – further evaluation needed.

PHOTO 58



Roof system of left and right wing additions covered with plaster – further evaluation needed.