HISTORIC LANDMARK COMMISSION

JUNE 25, 2012

APPLICATION FOR A CERTIFICATE OF APPROPRIATENESS C14H-1977-0021

Swedish Log Cabin 2220 Barton Springs Road

PROPOSAL

Repair the foundation and lower logs and replace windows, chinking and daubing.

PROJECT SPECIFICATIONS

The applicant proposes to make the following repairs to the building per the attached architectural assessment:

- Remove the bottom log on the south side in 12-18" sections and replace with a stone curb. Stones will be finger jointed and will match existing curb.
- Remove and replace damaged chinking and daubing as needed. Daubing will be a Type N mortar.
- Remove excess dirt and debris from roof and clean with a beach and water solution. Treat wood shingles with a wood preservative.
- Repair and replace damaged trim, threshold, door boards and windows to match existing.
- Cover exterior alarm with wood box.
- Install an 18" wide gravel base around structure to reduce splash back from water draining off the roof.

STANDARDS FOR REVIEW

The Commission's Standards for Review are:

- The distinguishing original qualities or character of a property and its environment shall not be destroyed. Removal or alteration of any historic material or distinctive architectural features should be avoided.
- All properties shall be recognized as products of their own time. Alterations which
 have no historical basis and which seek to create an earlier appearance shall be
 discouraged.
- Changes that have taken place in the course of time may have acquired significance in their own right, and shall be recognized and respected.
- Distinctive stylistic features or examples of skilled craftsmanship that characterize a property shall be treated with sensitivity.
- Deteriorated architectural features shall be repaired rather than replaced whenever
 possible. In the event replacement is necessary, the new material should match the
 material being replaced in composition, design, color, texture, and other visual
 qualities. Repair or replacement of missing architectural features should be based
 on an accurate duplication of features, substantiated by historical, physical, or
 pictorial evidence.

- Contemporary designs for alterations and additions to existing properties are appropriate when such alterations and additions do not destroy significant historic, architectural, or cultural material and are compatible with the size, scale, color, material, and character of the property, neighborhood, or environment.
- Whenever possible, new additions or alterations to structures shall be done in such a manner that if such additions or alterations were to be removed in the future, the essential form and integrity of the structure would not be impaired.
- The installation of protective or code-required mechanical systems shall be concealed
 whenever possible so as not to intrude upon or detract from the property's aesthetic
 and historical qualities except where concealment would result in the alteration or
 destruction of historically significant materials or spaces.

COMMITTEE RECOMMENDATIONS

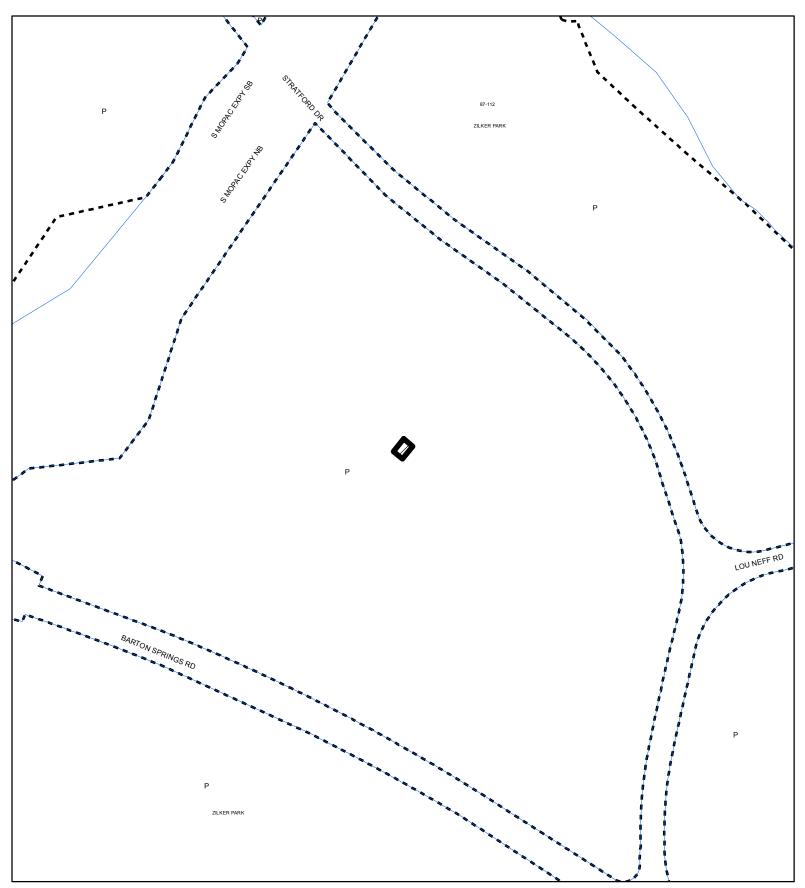
Approve plans as presented, but recommend installing an 18" wide gravel base around structure to reduce splash back from water draining off the roof.

STAFF RECOMMENDATION

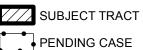
Committee recommendation has been incorporated into plans. Approve plans as presented.

PHOTOS

See attached assessment report and plans.







HISTORIC ZONING

ZONING CASE#: C14H-77-0021

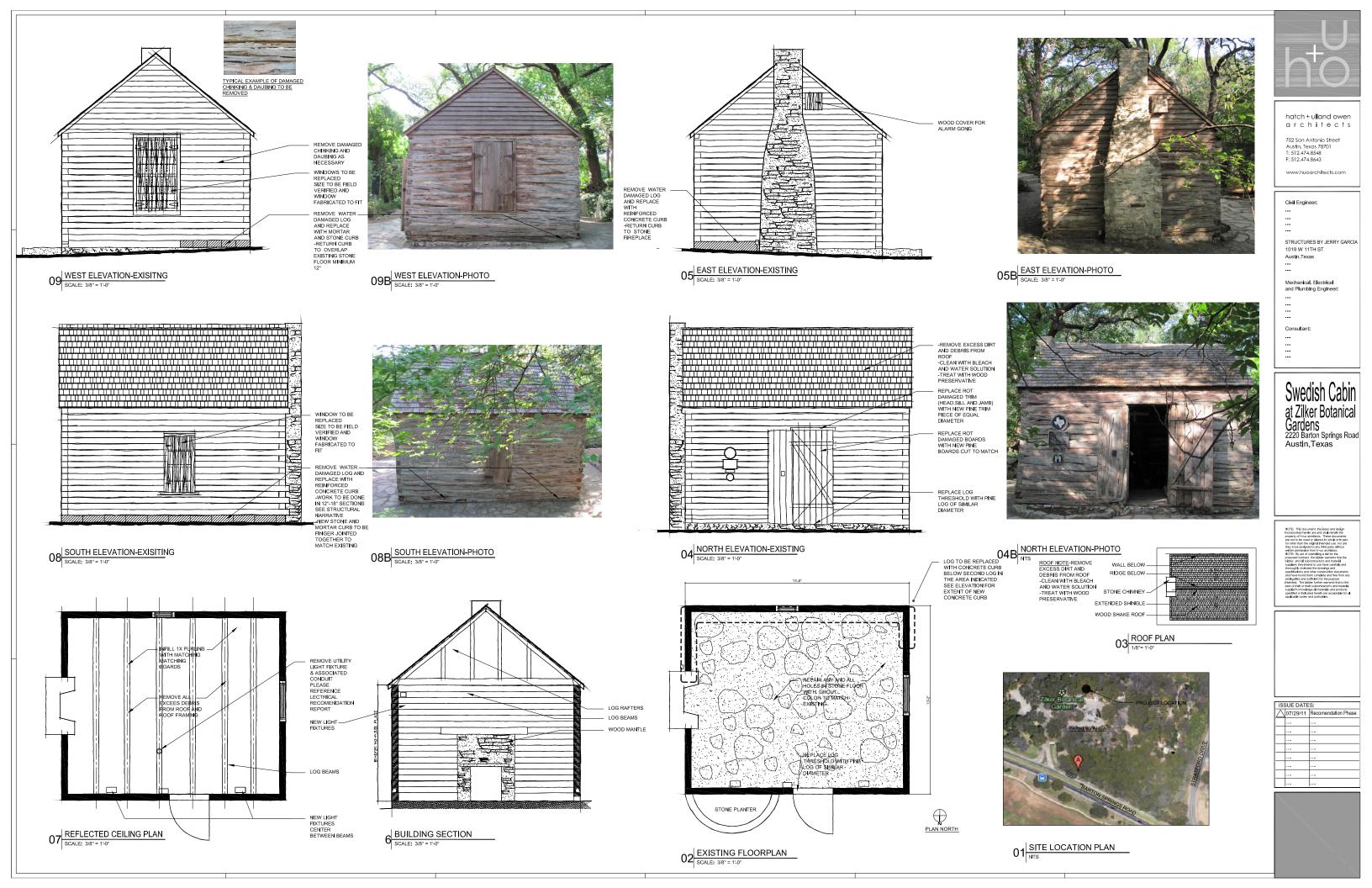


This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

approximate relative location of property boundaries.

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July 29, 2011

Marty Stump Project Manager Andrew Linseisen P.E. Project Coordinator

Parks and Recreation Department City of Austin 919 W. 28 ½ Street Austin, Texas 78705

RE: Swedish Cabin at Zilker Botanical Gardens 2220 Barton Springs Road Austin, Texas

This report provides an Architectural assessment and recommendations for the Swedish Cabin at Zilker Botanical Gardens. It is based on several site visits and additional background information provided by City of Austin Parks and Recreation department.

Foundation

The foundation consists of similar material as the surrounding stone paved area at the garden. Flagstones set in mortar form a level plinth for the log structure above. Due to the slope of the site the north side of the base is exposed, while the south side is level with the adjacent grade. The east and west sides follow the grade from 4"- 6" at the north end to 0 "at the south end. The existing stone floor foundation is sound. There is a hole/gap in the western end of the cabin floor below the window that goes through to the outside, and appears to be an entryway for rodents and other pests. Please reference attached structural engineers' assessment and recommendation report.



Figure 1- Stone curb and foundation at north side

Foundation and Storm Water Diversion

The foundation at the Swedish cabin also serves as its floor. To prevent the intrusion of rodents and other pests entering into the cabin, all holes in the floor should be filled with grout that matches the existing mortar

To prevent future water damage along the south side of the building the bottom log is to be removed 12 to 18" sections, as needed. The section that is removed is to be replaced with masonry curb with stone to match the existing. The stones in the new curb are to be finger jointed and match the existing curb. Masonry curb is to return north as shown on the drawings. Masonry curb is to sealed and waterproofed with a natural finish masonry sealer

Log Construction

The log construction at the Swedish cabin consists of Juniper logs - Eastern Red Cedar/Alligator Juniper. (See attached botanical analysis) The logs are approximately 6"-7" thick joined with half dovetail joints. (See figure 2) The logs walls reach a height of approximately 8'-1/2" upon which the log beams rest. The condition of the wood varies with its location in the wall. In general the wood towards the top of the wall is extremely hard while wood at the bottom of the wall has been affected by water damage. This condition is most evident on the south side of the cabin where the wood has borne the brunt of sheet flow from the slope that runs up to the parking area. The moist, warm and shaded environment that is present after rain is ideal for fungi growth. The appearance of brown crumbly material is an indication that brown cubicle rot is present. Water damage and rot have disintegrated the bottom log into long splinters that follow the grain of the wood. An attempt has been made to replace or fill in the cavity left by the splintering log with daubing. The rotting and splintering condition described above is isolated to the bottom log on the south side. (See figure 3)The wood on the remaining three sides is in good condition. Please reference attached structural engineers' assessment and recommendation report.



Figure 2 - Dovetail Joinery



Figure 3 - Bottom log at south side

Chinking and Daubing

The chinking and daubing at the Swedish cabin is varied. It appears that the cabin has received chinking and daubing treatments several times in its one hundred and fifty plus years of existence. Further proof of this is the fact that the cabin disassembled and moved on several occasions. The chinking is difficult to identify most likely due to the fact that in locations where the daubing is gone the chinking material is also gone.

The daubing consists of three identifiable types; Type 1 (See figure 4) a gray mortar with a sand aggregate that appears reddish in some locations, and as white concrete colored mortar with sand aggregate in others, with a gray mortar that appears to have been applied with a small troweling tool. This daubing type is the most prevalent. It is exists on all sides of the cabin, except for the color inconsistency, it is in good condition. Type 2 which is present on all sides of the cabin is dried out, cracked and has contracted in shape to resemble a piece of concrete. (See figure 4) It is easily removable by hand. Type 3 appears to be the most recent, as it is the least contracted, in several locations it has been troweled over the adjacent mortar. (See figure 5)

Chinking and Daubing Removal and Replacement

Chinking is to be replaced where it is absent, or dried out enough to allow for easy removal. (See Figure 4) Chinking that is difficult or impractical to remove should have enough removed to give the daubing treatment a uniform look. Chinking removal and replacement should be performed by a contractor experienced in this type of work, with the end result of removal being an acceptable surface for a uniform daubing treatment.

Where practical daubing should be removed and replaced to create a uniform look, where it is impractical to remove daubing it should be removed enough to allow for a smooth, consistent look. All daubing appearing as type 3 is to be removed and replaced. It is our recommendation that Type N mortar should be used in creating the daubing mix. Please refer to the reference article "Between the Cracks" for additional guidelines. These guidelines are also to be followed on the interior of the cabin. The end result should be chinking and daubing that is uniform and consistent in appearance.



Figure 4- Chinking and Daubing – Example of Type 1 at the upper strata and Type 2 at the lower strata- note the three appearances of the type two daubing.



Figure 5- Type 3 -Chinking and Daubing with putty like appearance is to be removed and replaced, or removed enough to act as new chinking



Figure 6- Example of chinking and daubing in good condition, this should be removed enough to allow for a consistent daubing treatment.

Roof

The roof of the cabin consists of wood shakes on building paper, with 1x wood purlins. The wood shakes are in fair condition, there appears to the beginnings of some mildew and moisture damage as evidenced on the North West quarter of the roof. (see figure 7)



Figure 7 – Roof at north side

Roof Structure

The roof structure of the cabin is made up of log frame the log beams are approximately 4"-6" in diameter and rest on top of the log wall. Log rafters support the purlins and are 4"-6" in diameter. The roof structural members are in good condition. (See Figure 8) Please reference attached structural engineers' assessment and recommendation report.

Roof recommendations

The roof of the cabin requires cleaning of excessive debris and dirt. After the initial cleaning the wood shakes should be carefully cleaned with a bleach and water solution (see attached Restoring and Treating Wood Shakes and Shingles). Care should be taken to not put excess load on the roof while cleaning. From the interior the ceiling requires cleaning of excess debris. Additional 1x purlins are to be added as infill between rafters to per that is currently exposed. (See Figure 8)



Figure 8- additional 1x purlins are to be added to create a uniform ceiling appearance and hide the building felt

Electrical

Please reference attached electrical engineers' assessment report.

Windows, Window Trim, Doors and Caulking

There are two windows in the cabin one the south side and one on the west side. The south side double hung window is the smaller of the two (approx. 19"W x 47"H) the lower and upper sash both have wood muntins, stiles and rails which appear to be recent additions and are in fair condition. The window is true divided light. The rails and muntins on the exterior appear to have excessive paint and/or caulking in poor condition. The entire window on the outside has flat steel burglar bars to prevent access. The bars are in good condition with some rust spots. The trim around the window is in fair to poor condition, the poor condition exists specifically on the right hand (SE) side of the window. The pine trim piece on the outside and the return trim piece both show signs of rot at the lower end. (see figure 9) Dry rot appears to be present in the head trim (see figure 10) The left hand (SW) side of the window is beginning to show signs of rot (see figure 11).

The larger of the two windows (approx. 34"W x 61"H) is double hung, has true divided lights, plexiglass with wood muntins, stiles and rails which are in fair condition on the interior, and poor condition on the exterior. They appear to have been painted at one time on the exterior. The paint is in poor condition. This window also has flat steel burglar bars fastened directly to the stiles. The Pine trim around the window is in good condition except for the head trim which is in fair condition and is beginning to show signs of rot as evidenced by the black discoloration. (see figure 12 &13) The Iron hardware on the doors appears to be original and is in good condition.

The door on the North side is in fair condition, some of the vertical boards are starting to exhibit signs of rot at the bottom (see figure 14). Some of the trim near the sill of the door is also beginning to rot. (see figure 15). The trim at the upper left hand side (NE) of the door is almost completely gone and appears to have termite damage (see figure 16)

Windows, Window Trim, Doors and Caulking Recommendations

Windows in the cabin require complete replacement. Replacement windows should match the existing, six lights over six lights on the west side and four lights over four lights on the south side. (see figure 17 and 18) They are to made with antique glass and cedar sashes and fabricated to fit after accurate field measurements are taken. New trim replacement pieces should match the existing in size, appearance and species. Door trim is typically Loblolly pine. (See figure 18)



Figure 9 – Trim at south window



Figure 10 -Head Trim at south window



Figure 11-Trim at south window



Figure 12 – Head trim at west window



Figure 13 – Head Trim at west window



Figure 14– Bottom boards at door



Figure 15- Door sill



Figure 16- Door trim



Figure 17 – West side window to be replaced



Figure 18 –South side window to be replaced-Trim at head/ jamb intersection is in good condition and can be used as a standard for remaining trim. Trim at jamb /sill intersection is deteriorated. Jamb trim should be replaced

References:

Moates, Thomas and Reed, Douglas "Between the Cracks" Old House Journal May/June 1997: 46-51

Buchanan, Brian, "Restoring and Treating Wood Shakes and Shingles" <u>Journal of Light Construction</u> 1992

End of Architectural Report

Sincerely,

Tom Hatch, FAIA

Charles Melanson, Architect



July 29, 2011

Marty Stump Project Manager Andrew Linseisen, P.E. Project Coordinator

Parks and Recreation Department City of Austin 919 W. 28 ½ Street Austin, Texas 78705

RE: Assessment and Prescriptive Narrative of Recommendations for Swedish Cabin at Zilker Botanical Gardens

> 2220 Barton Springs Road Austin, Texas

This letter serves to provide a structural assessment as well as a prescriptive narrative of recommendations for a single story historical structure, a cabin approximately 175 years old, located in the Zilker Botanical Gardens. The assessment and recommendations are based on two observations of the structure performed on May 2, 2011 and July 12, 2011 as well as documents produced and provided by Hatch+Ulland Owen Architects (H+UO). The assessment and recommendations are based on and limited to the observational data and history collected by StructuresPE, LLP, H+UO and other consultants.

The notable observational data and history are as follows:

Foundation

The cabin presently rests upon an elevated flagstone and mortar floor. The floor is elevated to create a level supporting surface for the cabin amongst the surrounding sloped paved area. This existing stone floor appears to be performing its purpose and is structurally acceptable. (See Figure 1) It should be noted that the cabin has been moved numerous times and is not supported by the original foundation.

It is our recommendation to leave the foundation as is. As stated above in the assessment, it is our opinion that the foundation is performing adequately and does not warrant addressing at this time.

Wall Construction

The Swedish cabin walls are of log construction, consisting of approximately 6" logs with dovetail joinery at wall corners. (See Figure 2) It was determined that the species of wood used is eastern red cedar/alligator juniper, known for their resistance to decay. The conditions of the logs are generally acceptable but have begun to deteriorate towards the bottom of the wall, specifically at the south side. This is due to water damage from the surrounding run off. (See Figure 3 &4) The bottom log running along the south side and portions of the west side is actively rotting. (See Figure 5) In general the logs on the north, east and remaining west sides are in acceptable condition. In addition, the walls appear structurally solid and within acceptable plumbness. Joinery at wall corners appears intact and

solid.

It is our recommendation to remove the deteriorated portions of the logs and replace with a new stone and mortar curb and new logs as required along the entire south side, portions of the west side as well as the east side for consistency. Refer to H+UO for exact curb extents and further recommendations. The curb will serve to block run off from the surrounding landscape and prevent further deterioration of the cabin. Outside of these areas, existing logs and joinery do not need replacement. Removal and replacement shall be done with care in sections at a time, ranging from 12" to 18" in length. Care should also be taken at wall corner joinery during removal. The new stone and mortar curb will need to match the width of the log wall at a minimum, up to 1" wider is acceptable. The curb height will be at least one log high at approximately 8" inches. We recommend not exceeding a curb height of 18" and the final curb height and width will be determined by H+UO. As stated prior, the curb shall be installed in sections along the south side as well as continuing around the west and east corners. As the new masonry curb wraps the west corner, the height may taper off into the existing masonry foundation. (See Figures 3, 4, &5)

We recommend hiring a contractor experienced in this type of historic repair.

The method of binding used between the logs is called chinking and daubing. The chinking is filler to close the gaps between the logs, also known as the chinks. In addition, mortar is typically used as the daubing, the outer finish layer. It appears that over time there have been many different applications of the chinking and daubing. At least three distinct types were visually identified and more are suspected. (See Figure 6) This is due to patching treatments over time and the fact that the cabin was disassembled at some point to move locations. Age or timing of the daubing mortars relative to each other can be determined by the layering of the adjacent materials. It should be noted that typically there is an absence of chinking material where daubing material is absent. (See Figure 7)

It is our recommendation to only restore the chinking in areas where the chinking is either loose, absent, or possible to replace, such as in Figure 7. It is recommended to only remove the chinking that will readily fall out. Hard to remove chinking may be working and supporting the logs above and shall not be removed. Areas shall be rechinked with the appropriate material preferred by the expert contractor. We estimate that this could occur approximately over fifty percent of the cabin's chinking area. The restoration of the daubing areas would be repointed with mortar. All chinks shall have daubing replaced or filled as required for a consistent, uniform look. Please refer to H+UO for further recommendations on daubing. We recommend replacing the daubing with Type N mortar in several layers. The mortar shall comply with ASTM C 270. This mortar is a general all-purpose mortar with good bonding capabilities and workability and is a higher-lime content mortar. Due to the high-lime content, care should be taken in preventing the mortar from drying out during the repointing of the joints. Areas repointed should be covered in burlap or similar material for at least three days afterwards to prevent the daubing from drying too quickly. (See Figures 6 & 7)

We recommend hiring a contractor experienced in this type of historic repair.

Roof Structure

The roof structure consists of log rafters and collar beams along with 1x purlins and a 1x ridge board. It appears that the log rafters and collar beams are original or the oldest. The purlins and ridge board appear to be relatively new. The rafters are cut to bear directly on the top wall log. (See Figures 8 & 9) Due to the overall small footprint of the roof and steep slope, it is our opinion that the members are structurally adequate. They currently are in use and appear to be performing as required.

It is our recommendation that the roof framing does not warrant retrofit at this time. As stated above in the assessment, it is our opinion that the roof framing is performing adequately. It should be noted that any future construction roof loads shall be supported by scaffolding. Additional loads should not be introduced to the roof. Please refer to H+UO for further recommendations.

Summary

It should be noted that this is purely a structural performance assessment and the preceding

recommendations do not imply current building code compliance. In general, it is our opinion that the cabin structure overall is performing structurally at an acceptable level.

References

Sincere

Jerry Gar

Moates, Thomas and Reed, Douglas. "Between the Cracks." Old House Journal May/June 1997: 46-51.

/ SUNV

Principal License #67435

GERARD GARCIA

mif GAM

Erin H. Salmatanis Senior Project Manager



Figure 1: Flagstone and mortar foundation



Figure 2: Typical wall corner detail



Figure 3: South side and west corner. Sections of log shall be removed and replaced with masonry curb to match existing foundation.



Figure 4: South side wall and surrounding conditions. Sections of log shall be removed and replaced with masonry curb to match existing foundation.



Figure 5: South side wall bottom log condition. Sections of log shall be removed and replaced with masonry curb to match existing foundation.



Figure 6: Mortar variations. Remove and/or repoint areas with putty like daubing or areas as required to create a uniform look.



Figure 7: Absence of chinking and daubing. Replace chinking with appropriate material and redaub as required to create a uniform look.



Figure 8: Roof framing



Figure 9: Roof framing detail at top of wall



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Swedish Cabin Electrical Modifications Zilker Park Botanical Gardens Austin, Texas

By:
David Mitchell, PE – Encotech
July 28, 2011

General

The purpose of this report is to document the existing conditions of the electrical lighting serving this historic structure and recommend modifications as necessary.

Existing Electrical Conditions

Existing Site Power

The building electrical service for the lighting is fed via a ¾" metal conduit, entering the building above grade from the paved walkway on the north end of the east wall. There is also an exterior receptacle further down on the east wall. The light fixture service and the exterior receptacle on the building do not appear to be connected, but fed separately from outside the building. **See PHOTO A.**

Existing Electrical Fixtures

There is the exterior receptacle mentioned above. This report is only in regard to the lighting. There is one light fixture, centered on a roof rafter above the door. A ¾" metal conduit feeds through the side wall of the building, along surface-mounted on the bottom of the wall to a receptacle. **See PHOTO B.**

Non-metallic cable with a plug is plugged into that receptacle and loosely routed up the wall and over to the light fixture. **See PHOTO C.**

The single light fixture is a screw-in compact fluorescent lamp in a base mounted on the roof rafter above the door. **See PHOTOs D & E.** The placement of the light fixture makes it visible to visitors peering in to see the cabin features.

Report - Electrical Swedish Cabin – Zilker Park, Austin, TX

Recommendations

Electric Service – The condition of the existing service must be verified and inspected by a licensed Master Electrician. It appears that the cabin is fed from an adjacent site lighting fixture, but this must be determined. If the wiring appears to be in good condition, then it should be reused but terminated in a new weatherproof junction box, just inside the cabin securely surface mounted on the inside face of the log wall.

Demolition - All other electrical wiring in the cabin shall be demolished and removed (taking care to not damage the cabin log surfaces).

New rigid galvanized steel conduit shall be routed securely surface mounted at 6" above the finished floor (A.F.F.) along the inside face of the log wall over to another weatherproof junction box.

New utility receptacle - On that junction box, mounted at 6" A.F.F. a weather resistant type, GFIC duplex receptacle shall be mounted, with metal in-use cover. This shall allow plug-in of existing alarm system, etc. as required.

Controls - Rigid galvanized steel conduit shall be routed up to a timer, a Torx photocell and timer, model T930L or equal, securely surface mounted at 6" above that junction box.

Continue rigid galvanized steel conduit up alongside the door to a weatherproof junction box securely surface mounted to the log wall. Route rigid conduit along top of wall, securely surface mounted to the log wall to a junction box on either side of the door. Refer to Architect's drawing for locations.

New Light Fixtures - Mount one Lithonia model FP213L 120 M12 compact fluorescent floodlight, or equal, to each of two junction boxes, aiming up to illuminate the underside of the roof. Fixtures shall be wet rated, with 2 – 13W energy star rated compact fluorescent lamps, 3000K color. **See PHOTO F.**

Report - Electrical Swedish Cabin – Zilker Park, Austin, TX

SITE PHOTOS



PHOTO A - Conduit into building to light fixture



PHOTO B - Light fixture conduit to receptacle



PHOTO D - Light fixture on rafter



PHOTO C - non-metallic cable



PHOTO E – Light fixture on rafter

Report - Electrical Swedish Cabin - Zilker Park, Austin, TX

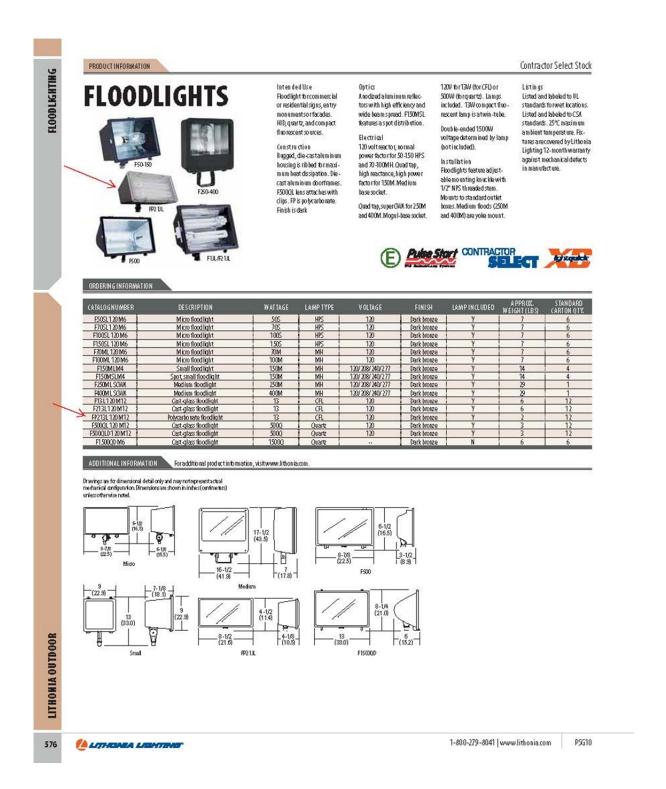


PHOTO F - Proposed new light fixtures (2)