Previous page, Image of the fully restored sanctuary included the replication of choir seating and restoration of the baptismal font, Ebenezer Baptist Church, Atlanta, GA. © 2011 Jonathan Hillyer Photography, Inc.
Recommended by:  
Chief, Cultural Resources Stewardship, 
Southeast Regional Office

Date: 8/27/18

Concurred by: 
Superintendent, 
Martin Luther King, Jr. National Historical Park

Date: 8/18/18

Concurred by: 
for Regional Director, Southeast Region

Date: 8/30/18
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Project Team

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Executive Summary

The final bound copies of the Part I and Part II Historical Structure Report for Ebenezer Baptist Church were printed in January of 2001 after a year and a half of study and investigation. As the HSR was being finalized, the first phase of a decade-long restoration was just beginning to get underway. This Part III report documents Phase I and Phase II of that restoration work performed on the building. These were the two primary phases of the restoration work and included the majority of the restoration of the church. Although subsequent, more limited, work scopes did occur, they are not included in this report, but may be added to the record of treatment in the future.

Project Understanding

The National Park Service retained Lord Aeck Sargent to produce a HSR Part III report for Ebenezer Baptist Church in June of 2017. Lord Aeck Sargent had previously served as the architect for the Phase I and II restoration. The scope of work includes the research and investigation into the restoration project that occurred between 2001 and 2011 with any additional scope dedicated to documenting construction activities following the completion of work in 2011. While the research portion is predominantly focused on archives held at the Martin Luther King, Jr National Historic Site (re-designated in 2018 as the Martin Luther King, Jr. National Historical Park) and Lord Aeck Sargent offices, the investigation also includes on-site documentation of the church with a focus on the condition of work documented in the report.

Due to budget constraints for this project, the team agreed to exclude project information occurring after the Phase II Restoration work, though some information is still provided for context. As well, the Technical Data section typically included in an HSR Part III was removed from the project scope, though some critical documents not available in the previously published HSR are reproduced in the appendices of this report.

Methodology

Lord Aeck Sargent (LAS) collected from the National Park Service (NPS) digital scans of all locally archived documents related to Ebenezer Baptist Church. Additionally, LAS accessed their own archives, both digital and physical, of documents related to work LAS did on Ebenezer from about 1998 to the present. Where information or documents were missing, LAS attempted to fill in these blanks through oral interviews and comments on drafts of this report with individuals formerly associated with the various projects or phases covered in this report.

Summary Chronology

Administrative Background

On October 10, 1980, the Martin Luther King, Jr. National Historic Site was established. In April of 1996, following more than a year of negotiation, NPS and the Ebenezer Baptist Church congregation executed a property exchange agreement that would place the historic Ebenezer Baptist Church sanctuary (EBC) with NPS and the congregation with land upon which they would build a new sanctuary. Following the completion of the New Horizons sanctuary, the last regular religious service held at EBC was Sunday, March 7, 1999. On October 28, 1999, the NPS officially took control of Ebenezer Baptist Church under a 50 year lease agreement with an option to renew for 49 years. Throughout the duration of the lease, the congregation maintains the right to use EBC through the submittal of Special Use Permits.

Preliminary Condition Assessment

On March 11, 1998, William Russell, AIA, of the Georgia Institute of Technology (GA Tech), along with Howard King, chair of the church's building and ground committee, provided a preliminary condition assessment of the church building based on investigations conducted February 18, 1998. The focus of this investigation was on the roof framing, the balcony framing, and the courtyard between the church and the education building. A second inspection was conducted on February 27, 1998 with Mr. Russell, Mr. King, and Dan Scheidt (NPS Project Manager). This investigation focused on the masonry tower, exterior roof, and again on the courtyard between the church and the education building.

The 1998 preliminary condition assessment found that there were several “severe” roof leaks at the interface of
the roof and the masonry towers. The assessment also identified poor drainage in the courtyard as the source for plaster damage in the basement of the church, as well, that failing tower louvers and windows were allowing water into the tower structure. Recommendations were made to repair these identified conditions. A later scope of work statement for a building-wide condition assessment, released by NPS on June 24, 1999, states that in 1998-1999, “EBC underwent a stabilization project including reroofing and replacement of the wooden louvered openings in the tower to prevent further water infiltration damage.”

It had been understood since prior to NPS stewardship of EBC that the historic sanctuary would be restored to a period of interpretation that included Dr. King’s involvement with the property. The above work was approached as critical to ‘drying-in’ and structurally stabilizing the building while plans for the restoration were in development. By 1999, the process to define and gain approval for the restoration was underway.

Implementation, Planning, and Pre-Design

On May 19, 1999, NPS received a grant from the Save America’s Treasures program (SAT) for the restoration of the sanctuary. The SAT grant, along with private donations, did not cover the estimated cost of the entire restoration/rehabilitation, but were sufficient to fund a portion of the most critical repair items identified over the following year.

By June of 1999, NPS formalized and agreed to a project scope for the restoration of EBC. The work was to include the completion of an HSR (Title I), a value analysis, Title II services (schematic design, design development, construction document, etc.), contracting, and Title III services (construction administration). NPS engaged LAS to begin work on a condition assessment which was ultimately incorporated into the Part II of the Historic Structure Report (HSR). Architectural historian, Tommy Jones, was hired to complete the HSR.

On July 28, 1999, NPS completed a Mini-Value Analysis (VA). In the Mini-VA report, it is noted that LAS, under an IDIQ contract, developed a cursory estimate (prepared July 9, 1999) for the restoration work. The Mini-VA endeavored to prioritize the list of construction scope items to achieve a target budget that represented the “minimally responsible scope for initial consideration”. The Mini-VA described the next steps of the project as requiring a full Value Analysis followed by a review by the Servicewide Development Advisory Board (DAB).

Pre-Design

A task order contract with LAS for a more complete condition assessment was issued on August 27, 1999. The field work for the condition assessment was conducted in September and October and the final report approved on December 6. A class C cost estimate was produced in conjunction with this condition assessment. The condition assessment “was limited to the exterior envelope of the building, its structural, mechanical, electrical, plumbing, and fire protection systems and a life safety and accessibility analysis.”

A full Value Analysis was completed in November of 1999. The result was a recommendation to divide the project into two phases with the first phase dealing with critical repairs and improvements and the second phase predominantly with finish restoration in the Sanctuary and Fellowship Hall. Phase I would be paid for with the SAT grant and matching private donations. A February 5, 2000, NPS Project Report approved the preferred alternative approach that divided the restoration project into two phases.

In February and March of 2000, the NPS agreed to internally supply a detailed paint analysis for the EBC project. This document would eventually be incorporated into the HSR. The paint analysis was completed in May 2000.

Design and Construction Documents; Phase 1

In March 2000, a Phase I project scope was reviewed by the DAB and approved. By July, LAS was under contract to provide Title II services (construction documents) for this first phase. The work in this phase included installing a new HVAC system, installing a fire protection system, upgrading the electrical system to comply with code, upgrading the roof and ceiling structure, and mechanical room improvements.

Phase 1

In September of 2000, Keystone Restoration out of Palm Beach, Florida began a negotiated bid process
for the Phase I work. During this time, the HSR was largely complete and the Ultimate Treatment and Use for EBC, including the period of interpretation, was understood. Phase I work was developed in such a way so as not to interfere with any later work that would restore the Sanctuary and Fellowship Hall nor would preclude future interpretations of the later 1970s alterations. And, in fact, because much of the data from the HSR was available at the time, necessarily connected work items that may have fallen under Phase II, like repair and repainting of the Sanctuary ceiling after the installation of HVAC systems, were done according to recommendations in the HSR.

At the March 19th, 2001 kick-off preconstruction meeting for Phase I work, attendees included NPS staff, Keystone Restoration staff, and representatives from Bardi Heating and Air, Bius-Todd Electric, and Division 5 Erection. A Notice to Proceed was issued on April 2, 2001 and followed by a project schedule with a projected completion date of August 31, 2001. Funding shortfalls delayed the project in August and September of 2001, but were quickly resolved through a national radio fundraising campaign. Phase I work was completed around February 2002.

**Pre-Design; Phase II**

In May 2002 NPS produced a design analysis draft that defined the scope of Phase II, Title I study and design work, which included repair and restoration of the exterior, new lightning protection, and the restoration of the stained glass windows, doors, flooring, wainscot, and baptistery, rehabilitation of the balcony, accessibility improvements, restoration and re-installation of the historic organ and Sanctuary furniture, and repairs to the courtyard planter drainage system that continued to plague the building.

Design and Construction Documents; Phase 2

LAS was contracted to begin Phase II, Title I design work in June 2002. A Kick-off meeting with LAS was held in July 2002. During the kick-off meeting it was noted that at that time a new chair lift was being installed in the east tower stair center rail “to reach the sanctuary level from the lobby”. The meeting notes also indicate that, under the direction of NPS, the former men’s room had been “reworked to be accessible”, the original stage area “uncovered”, the original ceiling of fellowship hall “preserved, repainted, and exposed in its original location”, the kitchen equipment removed, and that the ceiling of the sanctuary was repaired and repainted under Phase I.

Following a value analysis workshop held in December 2002, it was determined that the Phase II project would follow the Ultimate Treatment and Use recommendations from the HSR, which allows for the retention of the 1970s alterations and the restoration of the sanctuary and fellowship hall to their 1956-1968 appearance. The Value Analysis Workshop resulted in VA Study #2002-170, dated December 2002. Further, it was determined that the planter drainage work would be completed prior to the bulk of Phase II work so that no further damage to the interior plaster would occur from rainwater seepage into the basement walls.

The Phase II project was officially approved by the DAB in February 2003 and by June, LAS was under way for Phase II, Title II, to provide construction documents.

In December 2003, an exterior stucco and mortar condition assessment and analysis was completed by Architectural Conservation Services.

In February 2004, a life safety and fire code analysis was completed and notes that the Phase II project will also include addressing handicap accessibility to the fellowship hall and restrooms and improving egress capacity for the sanctuary. The final Design Analysis for Phase II work was also completed in February 2004.

In June 2004 design documents were completed for the work on the planter drainage system in the courtyard between EBC and the Christian Education Building. By October, construction documents for the baptistery and fellowship hall stairs were issued. The Construction Package for all of the Phase II work was published on Feb. 9 2005.

**Phase 2**

By July 2005, the RFP for Phase II construction was issued. A bid was received in September 2005 from Keystone but was higher than the project budget. Following about two years of negotiations, a re-bid, more negotiations, revisions to the work scope, and finally, re-appropriation of funds to cover the remaining difference between bid and budget, the project was
awarded to Keystone Restoration. By June of 2007, LAS was under contract for the Phase II, Title III construction administration work. Phase II construction began in September of 2007 and the church would remain closed to the public until April 2011 (except for King Day celebrations each January).

Towards the end of the Phase II project a sub-project was generated adding the installation of a three-stop lift in addition to the lift and exterior handicap ramp at the Jackson Street entrance to Fellowship Hall. The construction documents for this work were completed May 10, 2010.

**Post Restoration Work**

From February 2013 to July 2014 LAS again assessed the building envelope and produced a condition assessment for NPS in response to areas of localized water infiltration and damage. From about 2014 on, a record of proposed work done to the building has been captured in Section 106 compliance documentation. Recent work includes minor repairs and maintenance, as well as, most recently, interior plaster repair and roof replacement in 2017/2018.

**Project Completion Reports**

The following section describes the projects completed concurrent with and following the publication of the Historic Structure Report, Parts I and II for Ebenezer Baptist Church. Note that a project was completed between 1998 and 1999 that included repairs to the roof and roof structure, as well as replacement or repair of the louvers in the tower, which is not well documented in the HSR. The project is referenced several times in archived documents alternatively as being a complete re-roofing or a partial repair of the roof. Period documents indicate that the project focused on one area of structural stress where the roof meets one of the masonry towers.

Each phase of work described below is followed by a table that summarizes the proposed work scope, identifies whether it was executed or not (or executed according to the construction documents or not), and describes the current condition of that work as observed between January and June 2018.
1999 – Remedial Repair and Maintenance work by the National Park Service

This work is not documented in detail but is noted in several archived documents. The work reportedly included roof repair, re-roofing, the replacement of tower louvers, and some structural remediation at the intersection of the main roof and one of the masonry towers.

The project was initiated by NPS following investigations by William Russell, AIA, of the Georgia Institute of Technology (GA Tech); Howard King, chair of the church's buildings and grounds committee, and Dan Scheidt, NPS Project Manager. Frank Catroppa was the Park superintendent during this time.

The contractors for this work are not known. Park Service employees, Andrew Callens, Victor Ector, Fred Gibbons, Judy Forte, Dennis McCarthy, David Ates, Richard Ramsden, Rene Cote, and others leading and participating in the maintenance of the building during that time may have additional information.

A condition assessment by LAS in 2014 indicated that the roofing and tower louvers were at or past their serviceable life and it is understood that both systems were repaired or replaced in 2017.

<table>
<thead>
<tr>
<th>Work Scope</th>
<th>Executed</th>
<th>Existing Condition (C. 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Roof Repair</td>
<td>Yes</td>
<td>Specific locations not known, but evidence of structural interventions is present. No condition issues noted.</td>
</tr>
<tr>
<td>Re-Roofing</td>
<td>Yes</td>
<td>The 1999 roofing was replaced in 2017.</td>
</tr>
<tr>
<td>Repair of tower louvers</td>
<td>Yes</td>
<td>The louvers repaired or replaced in 1999 were identified in the 2014 condition assessment as requiring additional repair and maintenance.</td>
</tr>
</tbody>
</table>

April 2001-December 2001 - Phase I of EBC Restoration

The work in this phase included installing a new HVAC system, installing a fire protection and alarm system, upgrading the electrical system to comply with code, upgrading the roof and ceiling structure (including adding insulation to attic), and mechanical room improvements. In addition, the scope included repair of the main entrance doors, some gutter and downspout work, and repair work to the exterior stairs at the south end of the building. Additionally, from later reports, Phase I also included improvements to the former men's room in Fellowship Hall to convert it to an accessible toilet, “uncovering” of the original stage area, preservation and repainting of the ceiling in Fellowship Hall, removal of kitchen equipment, and repairing and repainting of the Sanctuary ceiling. At some point during this project, a backflow valve was also installed at the main sanitary sewer outlet.

The new mechanical system consisted of two new air-handling units mounted on platforms in the northwest and northeast towers. The ductwork and all related piping penetrate the tower wall and continue inside the roof/attic to connect with the rear (south end) of the building and the mechanical room on the Fellowship Hall level. Constructing access hatches/doors to the northeast tower from the balcony level, the mechanical platforms, and to the sound attenuation spaces was included in the scope of work as well. The third new air-handling unit was installed in the mechanical room and connected with new/reused ductwork for the Fellowship Hall. All remaining mechanical and electrical equipment was also installed in the mechanical room. Also included in this phase were the installation of the chiller unit, construction of the Utility Building in the south west corner of the parking lot, the installation of the electrical system in the Utility Building, and the connections from the utility building to the sanctuary building.

Removal of hazardous material was also included in this scope and was accomplished in conjunction with the installation of the major systems and related tasks.

This project, and the later Phase II and related restoration projects, began with a cursory condition assessment and cost estimate prepared by LAS in the summer of 1999 through a task order contract. A
more complete condition assessment and Class C cost estimate was prepared and delivered later in 1999. In February of 2000, after a Value Analysis conducted in the previous months, NPS approved Phase I of the restoration.


The project team included NPS staff, Keystone Restoration staff, and representatives from Bardi Heating and Air, Bius-Todd Electric, and Division 5 Erection.

The project was funded by a Save America’s Treasures grant, NPS funds, and non-federal matching funds. The Phase I work was originally approved by the DAB for $1,337,515. The final cost of the Phase I work was $1,904,000.

<table>
<thead>
<tr>
<th>Work Scope</th>
<th>Executed</th>
<th>Existing Condition (C. 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three new air-handling units - ductwork and all related piping</td>
<td>Yes</td>
<td>The air-handling units appear operable and in serviceable condition.</td>
</tr>
<tr>
<td>Access hatches/doors to mechanical spaces and organ spaces</td>
<td>Yes</td>
<td>No observed issues with the access hatches and doors.</td>
</tr>
<tr>
<td>New chiller unit</td>
<td>Yes</td>
<td>The chiller unit appears operable and in serviceable condition.</td>
</tr>
<tr>
<td>Utility building</td>
<td>Yes</td>
<td>The utility building was not assessed.</td>
</tr>
<tr>
<td>Hazardous material abatement</td>
<td>Yes</td>
<td>n/a</td>
</tr>
<tr>
<td>Fire protection system</td>
<td>Yes</td>
<td>The fire protection system appears operable and in serviceable condition.</td>
</tr>
</tbody>
</table>

<p>| Roof and Ceiling structural improvements       | Yes      | Specific locations not known, but evidence of structural interventions is present. No condition issues noted.                                           |
| Attic Insulation                               | No       | No attic insulation was noted.                                                                                                                           |
| Improvements to Mechanical Room                | Yes      | No observed issues with the mechanical room. There are no interior finishes in this area.                                                            |
| Repair to the main entrance doors              | No       | This work was done in Phase II.                                                                                                                         |
| Gutter and downspout work                      | No       | Undefined gutter and downspout work was noted in Phase II documents as well. The 2014 condition assessment notes that low-quality modern gutters and downspouts were present on building, along with older, possibly historic gutters and downspouts. |
| Repairs to exterior stairs at the south end of the building | Unknown | These stairs were replaced in Phase II.                                                                                                                    |
| Improvements to the former men’s room in Fellowship Hall | Unknown | All restrooms were upgraded in Phase II.                                                                                                                   |
| “Uncovering” of the original stage area        | Unknown | Fellowship Hall was restored in Phase II, thus obscuring this work.                                                                                     |
| Preservation and repainting of the ceiling in Fellowship Hall | Yes     | No observed issues with the ceiling.                                                                                                                      |</p>
<table>
<thead>
<tr>
<th><strong>Removal of kitchen equipment</strong></th>
<th>Yes</th>
<th>This room is now used for storage.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Repairing and repainting of the Sanctuary ceiling</strong></td>
<td>Yes</td>
<td>No observed issues with the ceiling.</td>
</tr>
<tr>
<td><strong>Installation of backflow valve</strong></td>
<td>Yes</td>
<td>A backflow valve was installed at City connection. Additional work in Phase II may have altered this work.</td>
</tr>
</tbody>
</table>

**September 2007 – 2011 – Phase II of EBC Restoration**

The scope of work of Phase II - Restoration of Ebenezer Baptist Church consisted of the interior of the Sanctuary, the interior of Fellowship Hall, and the exterior envelope.

The interior of the Sanctuary was painted according to the recommendations in the May 2000 Paint Analysis. Wall plaster was restored based on an analysis by Architectural Conservation Services. The pews were repaired and returned to their original finish condition and presented without cushions. The wood wainscot encircling the space was restored. The stained glass windows were fully restored including repairs to their frames and the operable lower awning windows. The scope included the rebuilding and re-installation of the 1960's Hill-Green-Lane pipe organ in its original locations in the organ chambers to the left and right of the pulpit and choir and an antiphonal at the rear of the Sanctuary, next to the balcony. The balcony itself was also rehabilitated and structurally reinforced to be accessible to the public. Additionally, the baptismal pool was restored to its original condition, though was not made to be operational.

The Fellowship Hall was restored to its 1968 appearance, including several new pendent light fixtures replicating the extant period lighting and custom 9x9 vinyl tile cut from 12x12 tile to replicate the historic asbestos containing tiles. The walls were selectively re-plastered and all windows restored. The exit ramp to Jackson Street was replaced by a stair and a handicap lift. The stairs up to the sanctuary were redesigned to look more like they appear in the 1956 drawings.

The exterior brick was selectively re-pointed based on an estimated percentage of required repointing. The perimeters of all window frames were sealed. The ground floor stucco was repaired and restored. All windows and doors were repaired and restored. The stained glass windows of the church were removed with their sashes, completely restored in a studio environment and then re-installed, without laminated glass protection or wire mesh. Protection for the stained glass windows was recommended at one time but concerns over adverse impacts to the stained glass from this intervention, a desire to see the stained glass clearly from the exterior, and as well as not having a history
of vandalism, led to the conclusion that this scope was not needed. However, protective screens were installed on the sidewalk-adjacent Fellowship Hall windows. New emergency exit stairs were installed at the south elevation of the church, attaching to the 1970s addition.

A stair lift and an exterior ramp were constructed in the Fellowship Hall at the Jackson Street entrance to the building. The location of the Jackson Street entrance, stair lift, and exterior ramp was moved during the design phase several feet to the north in response to recommendations in the HSR. The steel and concrete stair in the Fellowship Hall leading to the foyer was rebuilt to match the historic stair in look and finishes, but adapted to meet code requirements. Additional scope added in 2009 involved installing a new 3-stop lift that traverses 1.5 floors in the eastern stair tower. The construction documents for this work were completed May 10, 2010.

LAS was contracted to begin Phase II, Title I design work in June 2002. By June 2003, LAS was underway for Phase II, Title II, to provide construction documents. In December 2003, an exterior stucco and mortar condition assessment and analysis was completed by Architectural Conservation Services. In February 2004, a life safety and fire code analysis was completed by LAS. The final Design Analysis for Phase II work was also completed in February 2004.

The Project Manual for all of the Phase II work was published on Feb. 9 2005. The project was awarded to Keystone Restoration in April of 2007. By June of 2007, LAS was under contract for the Phase II, Title III construction administration work. Phase II construction began in September of 2007 and the church would remain closed to the public until April 2011.

The project team for the Phase II work included NPS staff, LAS as Architect, Keystone Restoration as Contractor, Eberly & Associates for Civil Engineering, Newcomb & Boyd for Mechanical, Electrical, and Plumbing, and Palmer Engineering for Structural.

The Phase II work was funded by NPS funds. The total budget of the Phase II work was initially set at $2,286,140. The 2002 Value Analysis produced work scopes within a range of about $2,000,000. The final project cost is not known at the time of completion of this document.

<table>
<thead>
<tr>
<th>Work Scope</th>
<th>Executed</th>
<th>Existing Condition (C. 2018)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Installed hexagonal concrete pavers at Auburn Avenue</td>
<td>Yes</td>
<td>No observed issues with the hexagonal pavers.</td>
</tr>
<tr>
<td>Replace chain link fence along Jackson Street.</td>
<td>Yes</td>
<td>No observed issues with the chain link fence.</td>
</tr>
<tr>
<td>Cleaning and Re-pointing of Exterior Brick and Stucco</td>
<td>Yes</td>
<td>No observed issues with the exterior stucco.</td>
</tr>
<tr>
<td>Reinforce Balcony Structural Systems and Balustrade</td>
<td>Yes</td>
<td>Not visible for assessment.</td>
</tr>
<tr>
<td>Install Handrails in Stair Tower</td>
<td>Yes</td>
<td>No observed condition with handrails.</td>
</tr>
<tr>
<td>Restore Baptismal Pool</td>
<td>Yes</td>
<td>No observed conditions with the restored baptismal pool.</td>
</tr>
<tr>
<td>Reinforce Sanctuary Floor and repair termite damage</td>
<td>Yes</td>
<td>Not visible for assessment.</td>
</tr>
<tr>
<td>Wood Work in Fellowship Hall</td>
<td>Yes</td>
<td>No observed conditions with Fellowship Hall woodwork.</td>
</tr>
<tr>
<td>Modify Jackson Street exit, install new stairs and handicap lift.</td>
<td>Yes</td>
<td>No observed conditions with the stairs, lift, or exit door.</td>
</tr>
<tr>
<td>Task</td>
<td>Action</td>
<td>Condition</td>
</tr>
<tr>
<td>---------------------------------------------------------------------</td>
<td>--------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>New lift in east tower</td>
<td>Yes</td>
<td>The lift appears operable and in serviceable condition.</td>
</tr>
<tr>
<td>Reconfigure the Stair from the Fellowship Hall to the Sanctuary</td>
<td>Yes</td>
<td>Finishes on beadboard should be refreshed.</td>
</tr>
<tr>
<td>Replace Steel Pipe Columns in Fellowship Hall with Wood Columns</td>
<td>No</td>
<td>It was determined during the project that the combination of original wood columns and steel pipe columns was the condition that existed during the period of interpretation for this space.</td>
</tr>
<tr>
<td>Repair and Refinish Eave, Soffit, and Rake Board</td>
<td>Unknown</td>
<td>Recent roof replacement may have replaced or repaired these items; no condition issues were observed.</td>
</tr>
<tr>
<td>Install Gutters and Downspouts</td>
<td>No</td>
<td>Recent roof replacement may have replaced or repaired these items; no condition issues were observed, though it does appear that the existing gutters are not radius-profile copper as specified.</td>
</tr>
<tr>
<td>Repair and Restore Stained Glass Windows</td>
<td>Yes</td>
<td>Amber round glass in rable was also restored. Exterior wood elements require maintenance and new finishes.</td>
</tr>
<tr>
<td>Repair/Restore the Fellowship Hall windows</td>
<td>Yes</td>
<td>Windows were reglazed and repaired. No condition issues were observed.</td>
</tr>
<tr>
<td>Repair/Restore Wood Doors at Main Entrance</td>
<td>Yes</td>
<td>Front Doors restored. Stained glass as well. New panic hardware installed. Doors are in need of maintenance/repair.</td>
</tr>
<tr>
<td>Reconfigure Doors from Stair into Sanctuary</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Adjust Interior Door Hardware</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Doors on the Fellowship Hall Level</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Repair and Restore Interior Plaster</td>
<td>Yes</td>
<td>Several areas of interior plaster show signs of water damage. Additionally, preliminary assessment indicates low-quality gypsum in the plaster which is causing additional problems.</td>
</tr>
<tr>
<td>Remove Gypsum Wall Board from Wainscot and restore Wainscot</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Repair/Restore Mahogany South Paneling</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Refinish interior painted surfaces</td>
<td>Yes</td>
<td>No condition issues were observed, excepting the areas of plaster damage.</td>
</tr>
<tr>
<td>Prepare Organ Spaces</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Reinstall and Refinish Flooring at Balcony and Refinish Flooring at Sanctuary</td>
<td>Yes</td>
<td>Some of the flooring at the balcony has been badly damaged from sustained water damage.</td>
</tr>
<tr>
<td>Replace Carpet at Sanctuary</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Rehabilitate Restrooms</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Task</td>
<td>Yes/No</td>
<td>Notes</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>--------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Install Bird Control Devices</td>
<td>Yes</td>
<td>Not accessible for assessment.</td>
</tr>
<tr>
<td>Restore / Reinstall the Hill-Green-Lane Organ and Antiphonal</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Restore, Replicate and Conserve Furnishings</td>
<td>Yes</td>
<td>The existing original finish was emulsified and restored.</td>
</tr>
<tr>
<td>Install Lightning Protection</td>
<td>Yes</td>
<td>Not accessible for assessment.</td>
</tr>
<tr>
<td>Install drinking fountain in Fellowship Hall</td>
<td>Yes</td>
<td>The drinking fountain was “out of order”</td>
</tr>
<tr>
<td>Repair Electric Heater in Entrance Lobby</td>
<td>Yes</td>
<td>Electric Heater is present and appears in repaired condition, but it is not known if it is operational.</td>
</tr>
<tr>
<td>Modify Sprinkler Heads in Organ Chambers</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Replicate Fellowship Hall Lighting and Restore Exterior Lighting</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
<tr>
<td>Door replaced on mechanical room.</td>
<td>Yes</td>
<td>No condition issues were observed.</td>
</tr>
</tbody>
</table>
Summary

Considering the drawn out nature of the project due to funding shortfalls, rules and restrictions, which required phasing of the project; the fragmented and ever evolving processes and systems for managing information; the changing administrative requirements within and between the facility management division (FSD), the cultural resources division (CRM), the SERO budget office; and the generally parallel organizational structures in the park, pulling together a record of treatment of a project like this has been a major challenge.

However, considering these challenges, Ebenezer Baptist Church stands today as an excellently restored historic religious sanctuary that immediately evokes the period within which Dr. King spoke so eloquently and powerfully from its pulpit. Despite the challenges of completing a restoration of this scale, the end result is certainly a success. Of all of the work scope items documented and assessed in this report, there are only two that stand out as incomplete or in need of further treatment: the plaster condition at select locations in the towers, sanctuary and Fellowship Hall; and the incompatible modern downspouts and gutters.

Downspouts and Gutters

The existing gutters are D-profile aluminum and the downspouts are rectangular aluminum. Though the gutters and downspouts appear to be functioning properly, they do not match the historic condition and do not have as long a serviceable life as the gutters and downspouts that were specified.

Specifications issued for the Phase II restoration called for SMACNA Architectural Sheet Metal Manual, rectangular profile gutters and 6-inch, continuous, seamless, round-profile downspouts. The specifications also called for boot connectors to cast iron storm drains, which are not present on the Jackson Street side and rear of the building. The specified gutters are historically appropriate.

Interior Plaster

As water infiltration has plagued EBC throughout the restoration, the interior flat plaster finishes at exterior walls have continued to show signs of water damage, including staining, efflorescence, delamination, blistering, and sustained saturation. Various sources for the infiltration have been identified and addressed and it is presumed at the time of completion of this report that the building is now adequately dried-in. However, there are still areas along the floor of the basement level that are of concern and may be continuing to show signs of sustained wetness due to groundwater infiltration.

It is likely that the only solution to permanently eliminate groundwater infiltration from the basement would be complete excavation around the perimeter of the building and the application of a waterproofing membrane to the foundation and sub-grade walls. While this approach would likely solve the issue, it is also likely infeasible due to cost and logistics. As such, the importance of selecting a plaster and finish system that can stand up to sustained wetness becomes of paramount importance.

As noted in the 2001/2002 plaster analysis, plaster samples showed traces of gypsum and it was also noted that gypsum was used in many of the previous repairs. Gypsum is water soluble and will dissolve even in the presence of water vapor. When the gypsum water solution evaporates, the gypsum recrystallizes at many times its original size, creating pressure in the plaster that results in spalling, blisters, efflorescence, etc. In addition to the problem of gypsum, many modern paints act as a vapor and water barrier, retaining moisture that would otherwise quickly evaporate, and thus exacerbating the problem.

We recommend that all damaged areas of plaster and gypsum-containing areas of plaster be removed to a stable substrate and replaced with an appropriate natural hydraulic lime (NHL 2) plaster system. This system approximates the historic plaster, resists damage from water and water vapor, and is relatively straightforward in preparation and application, making it a product that NPS can specify in regular maintenance cycles and as needed without additional consultation. As well, we recommend that all paint systems used to finish repaired plaster be breathable to allow water vapor transmission and evaporation.
Project Personnel

1999 – Remedial Repair and Maintenance

National Park Service - Client
Dan Scheidt, NPS Project Manager
Frank Catroppa, NPS Park superintendent

Restoration Phase I

National Park Service - Client
Deborah Rehn, Project Manager
Judy Forte, Superintendent
Dennis McCarthy, Project Manager
Reggie Peoples, Engineer, Program Manager

Keystone Restoration - Contractors
Al Pineda, President
Bruce Satterfield, Superintendent
Anthony J. Ferrantello, AIA, NCARB, Project Manager

Lord Aeck Sargent - Architects
Susan Turner – Principal in Charge
Klaus Roesch – Project Manager
Karen Gravel – Phase I documents

Eberly & Associates - Civil Engineers
Greg Delaney, Civil Engineer
Kevin Edwards, Civil Engineer

Newcomb & Boyd - MEP
Albert J. Marshall, PE
Steve Tonker, PE MEP
Eric Sherman, PE MEP
Chris P. Rousseau, PE Mechanical, Principal in Charge

Bius-Todd Electric Company, Inc. - Electrical

Bardi Heating & Air, Inc -HVAC subcontractor
Shane Patterson PE

D & C Fire Protection - Fire Protection subcontractor
J Rogers

Ezekiel Construction, Inc. - Lift subcontractor
Serge Charles

Architectural Conservation Services, LLC
Andrew Ladygo, Stucco and Mortar Analysis

Restoration Phase II

National Park Service - Client
Deborah Rehn, Project Manager
Danita Brown, Historical Architect
Judy Forte, Superintendent
David Ates, Architect, Project Manager, COR

Keystone Restoration
Peter Holdness, Superintendent for Phase II work

Lord Aeck Sargent
Susan Turner, AIA – Principal in Charge
Klaus Roesch, AIA – Project Manager
Karen Gravel, AIA – Phase II documents
Julie Arnold – Support
Danita Brown, AIA – Construction Administrator

Eberly & Associates
Greg Delaney, Civil Engineer
Kevin Edwards, Civil Engineer

Palmer Engineering
Christopher DeBlois, PE, Structural Engineers
Tammy Dills, PE, Structural Engineers

Newcomb & Boyd - MEP
Albert J. Marshall, PE
Steve Tonker, PE MEP
Eric Sherman, PE MEP
Chris P. Rousseau, PE Mechanical, Principal in Charge
List of Documents included in the Appendices:

1. Life Safety and Accessibility Analysis, September 1999
2. Phase I Condition Assessment Drawings, October 1999
3. Phase I 100% Construction Documents [UNLOCATED]
5. Historic Plaster Condition Survey and Mortar Analysis, November 2002
6. Phase II Construction Documents, June 2004-05
9. Repair of Planter Drainage, 100% Construction Documents, June 18, 2004
10. Lift and Ramp, 100% Construction Documents, May 25, 2010

*Due to the large page counts of the Project Manual documents, these items are included in the digital appendices only. Digital appendices are located on the disc included within this report.*
Life Safety and Accessibility
September 1999

Ebenezer Baptist Church
Part of the Martin Luther King, Jr. NHS, Atlanta, Georgia

Condition Assessment including Life Safety and Code Analysis

Life Safety Evaluation

Contacted: Charles Longley at the Bureau of Building, City of Atlanta

PRINCIPAL APPLICABLE CODES:

Due the fact that the Ebenezer Baptist Church is now part of the National Park Service’s holdings, the regulatory responsibilities need to be reviewed taking this into account. Further inquiries will be conducted to clarify relevant review and approval processes.


As a general guideline it can also be stated that the Bureau of Building and the Building Inspector have the final authority over life safety issues (not the fire marshal) and the Life Safety Code is the primary source of guidance within the jurisdiction of the City of Atlanta.

Accessibility: Official Code of Georgia Annotated: Title 30, Chapter 3.

Not applicable: Exemptions for Landmark Museum Buildings:
House Bill 839, March 29, 1984, as amended by House Bill 368, April 4, 1985

(It may be of interest to investigate what it takes to make the EBC a Landmark Museum Building and what advantages it would have.)

EVALUATION OF CODE COMPLIANCE

CONSTRUCTION TYPE

Chapter 6 Features of Fire Protection (LSC) and table 6-2.1. from NFPA 220
The classification still needs to be confirmed; however, a general Type III or IV classification is likely to be the result after additional investigation of building components can be completed.

Exterior Bearing Walls: solid brick masonry; brick and structural clay tile
Interior Bearing Walls: mixed construction - same as exterior walls
Supporting columns: wood columns in the Fellowship Hall
Beams, Girders, Trusses & Arches: still uncertain about materials
Floor Construction: most likely wood joists
Roof Construction: mixed construction

The Ebenezer Baptist Church is currently not sprinklered and apparently never had a sprinkler system installed.

**OCCUPANCY CLASSIFICATION**

According to the Life Safety Code Chapter 9, Existing Assembly Occupancy, the Ebenezer Baptist Church falls into this category: buildings used for gatherings of 50 persons or more for such purpose as deliberation, worship, entertainment, dining etc.

**HEIGHT LIMITATIONS**

List existing Zoning Classification of the property
Historic District Overlay
Building Height and capacity of parking lot

**OCCUPANT LOAD**

Chapter 3-2 LSC Definitions
Chapter 9-1.7 Occupant Load

**Gross floor Area** (inside perimeter of exterior walls) for the Fellowship Hall (1st Fl.): 3,754 SF
**Gross floor Area** (inside perimeter of exterior walls) for the sanctuary (2nd Fl.): 5,028 SF
**Gross floor Area** (inside perimeter of exterior walls) for the balcony (3rd Fl.): 1,365 SF

Total 10,147 SF

The 1st floor Fellowship Hall has currently no fixed seating but tables and chairs. The net area of the 1st floor, incl. the kitchen, amounts to 2,822 SF.

If the permissible occupant load factor of one person per 7 sq ft (place of worship, auditorium, lodge hall etc.) is applied to the 1st fl. Fellowship Hall it results in an occupant load of 403 persons for the 1st floor alone.

The occupant load for the 2nd and 3rd floor is calculated by using the number of people, which can be accommodated in pews and the available fixed seating. A-9-1.7.1 (d) the occupant load of an area having fixed seats shall be determined by the number of fixed seats installed. Pews and similar type seating: one person per 18 linear inches.

Fixed seating in the sanctuary (2nd floor), including choir loft and seating under the balcony: 486
Fixed seating on the balcony (3rd floor): 122
**Total fixed seating** in the sanctuary: 608 persons

This results in a total occupant load for the building of 1,011 persons.
MEANS OF EGRESS

LSC Section 9-2 Means of Egress Requirement

9-2.2.2 Doors
Doors complying with 5-2.1 shall be permitted.

All three exit doors in the 1st floor Fellowship Hall are 36” wide. The door on the east side, leading into the alley, does swing to the inside.

The two exit doors in the 2nd floor Sanctuary at the front of the church are 36” wide and the two doors at the rear of the church are a set of double doors each 60” wide.

The two doors from the Balcony level to the stairs are each 36” wide.

9-2.2.3 Stairs
Stairs complying with 5-2.2 shall be permitted

5-2.2.2. Dimensional Criteria for Stairs
5-2.2.2.1. (b) Existing Stairs
Class B : Minimum width 44”
Max. riser 8”
Min. tread 9”

The existing stair in the west tower from the main entrance to the sanctuary has a minimum width of 46”; the same stairs in the west tower continue to the balcony level and lead down to the Fellowship Hall;

The existing riser height is 8”; there are a few steps, which vary distinctly from the 8” average;
The existing tread width varies between 10 ½” and 10 ¾”;

The existing stair in the east tower from the main entrance to the sanctuary has a minimum width of 60” and continues to the balcony level at a width of 47”; the treads and risers are the same as in the west tower.

The existing stair between the doors at the front of the sanctuary and the fire escape stairs at the exterior of the church is only 36” wide.
The riser height is 8”;
The existing tread width is 12”;

The two metal fire escape stairs are 36” wide at the tread level; however, the vertical pickets and the hand rail reduce the actual width to approx. 32”;

The stairs at the front/east side of the Fellowship Hall up to the Sanctuary are only 29” wide;

The ramp along the west wall of the Fellowship Hall to access the only exit door, which leads directly to the outside, is 36” wide, 30 feet long and has a slope of approx. 1:6; there is no midlevel landing.
9-2.3 Capacity of Means of Egress:

Capacity factors: Doorways, Passageways and Ramps .200 inches per seat/person cleared
Stairs .300 inches per seat/person cleared

Fellowship Hall (1st Floor)
The occupant load of the Fellowship Hall is 403 persons.

The direct exit route to Jackson Street is highly visible due to the ramp inside the hall and thus is likely to attract at least half of the occupants. However, the capacity factor for the ramp and the door of .200 allows only for 180 persons to leave through this means of egress.

The same would be true for the rear door, which leads to the stairs, which lead directly to the main entrance lobby on Auburn Ave. However, these stairs represent a capacity factor of .300 and therefore allow only 153 persons to exit this way.

The third exit route from the Fellowship Hall leads past the restrooms at the front east side of the hall, upstairs to the midlevel door which leads to the outside alley between the Church and the Christian Education Building. The stairs are 3 feet wide and thus the capacity factor is .300 and results in 120 persons. Note that the door to the alley is currently not swinging out but in.

The total number of persons, which are able to exit from the Fellowship Hall in case of an emergency is calculated to be 453. However, the 153 persons, who exit in the rear, up to the entrance lobby, are going to be confronted with the exiting persons from the sanctuary if the building is used on all levels. Given the probability for visitors and community members to have entered the Fellowship Hall through the rear door there is a high probability for them to try to exit the same way in case of an emergency. Thus the numbers of persons trying to exit will not follow an ideal mathematical distribution but the immediate recollection of how people had reached their present location and the wish to return via the same route as they had arrived.

Sanctuary and Balcony (2nd Floor)
The occupant load for the Sanctuary and the Balcony is 608 persons as defined by the fixed seating inventory.

The Sanctuary has 4 doors which lead to stairs and/or exit doors to the outside. Two doors are in the front wall of the Sanctuary and lead to a 3 foot wide stair, which lead to their respective exit door. However, the two exit doors share the same egress corridor and the exit passage may not be sufficiently protected.

The capacity factor of .300 for the stairs limits the number of persons to exit through these two doors to 240 persons (2x120).

The two doors at the rear of the Sanctuary are less restrictive then the stairs. The stairs in the west tower allows 153 people to leave the Sanctuary during an emergency. The stairs in the east tower allow 200 persons to reach the lobby. Between the two exit stairs a total of 353 persons will pass through the lobby during an emergency exit of the building. The capacity factor .200 for the main
double door (5'-11") from the lobby exiting onto Auburn Avenue allows 355 persons to exit the building. That means that the capacity of the stairs and the doors is rather well matched.

The total number of people who can use the means of egress is 595 through three exit doors. This does compare favorably with the total capacity load for the Sanctuary/Balcony of 608 people.

However, the problem area is the entrance lobby, which is likely to receive another 153 persons from the Fellowship Hall on the 1st floor during an emergency exit from the building. The 5'-11" doors in the lobby will not be able to accommodate a total of 508 persons to leave the building within the parameters set by the Life Safety Code.

5-6 Measurement of Travel Distance to Exits

A 5-6.1 Common Path, Dead End and Travel Distance Limits for unsprinklered Existing Assembly

Common path: 20’ Dead end: 20’ Travel Distance: 150’

Definition of common path of travel: until two distinct ways to separate exits become available; Where stairs form part of an exit access rather than an exit, the travel over such stairs is included in the travel distance measurement.

Fellowship Hall (1st floor)
The existing travel distance from the main entrance to the rear door (north wall) of the Hall is 37 feet, which leaves 113 feet to cover the rest of the Fellowship. The overall length of the Hall is under 100 feet so that the travel distance falls well within the 150 feet range.

The existing travel distance to the outside door at Jackson Street consists of the length of the ramp (approx. 30 feet) to the door inside the Hall. The remaining 120 feet safely cover the rest of the floor.

The existing travel distance from the door at the front east corner of the Fellowship Hall to the alley exit door (east side) of the Hall is 38 feet, which leaves 112 feet to cover the rest of the Fellowship. The overall length of the Hall is under 100 feet so that the travel distance falls well within the 150 feet range.

Sanctuary (2nd floor)
The existing travel distance from either of the two rear double doors of the Sanctuary to the main entrance/exit on Auburn Avenue is 64 feet. The remaining 86 feet cover the rest of the Sanctuary. The overall length of the Sanctuary is less than 75 feet so that the travel distance falls well within the 150 feet range.

The existing travel distance from either of the two front doors of the Sanctuary to the fire escape stair at the south side of the church is 22 feet. The remaining 128 feet cover more than the rest of the Sanctuary.

Balcony (3rd floor)
The existing travel distance from either of the rear doors on the Balcony to the main entrance/exit on Auburn Avenue is 103 feet. The remaining 47 feet cover all sections of the balcony area, so that the travel distance falls well within the 150 feet range.
5-1.3.2. Exits
According to the LSC the rating for the exit separation has to be at least ONE hour. This relates to the walls and the doors of the stair enclosure and the exit passageway to the exit door.

The construction of the existing church tower walls is not yet definitely determined. However it appears to be of a kind which might qualify for a 1 hour rating. Additional investigation is required on this issue. The separation of the means of egress from the Fellowship Hall, the Sanctuary and the Balcony appears to be in place including appropriately rated doors with door closures.

Note:
Fire alarm system, exit signage, emergency lighting etc will be covered by the engineering report.

ACCESSIBILITY and CODE COMPLIANCE REVIEW

The Official Code of Georgia Annotated: Title 30, Chapter 3, provides the basis for the review. Due to the current scope of work this review will only highlight the major issues and concerns without analysis and recommendations.

From a general point of view, the Ebenezer Baptist Church has considerable difficulties to comply with the accessibility code due to the fact that the major level of the Sanctuary is on the second floor, approximately 12 feet above the public point of entry. The Fellowship Hall poses a similar problem due to its location below grade, at approximately 5 feet. The 5 feet level change was easier to deal with and a handicap ramp was installed to improve access to the Fellowship Hall. Currently there is no elevator in the building and no ramp to reach the entrance lobby, which is approx. 18 inches above the sidewalk grade.

Handicap parking
There is one handicap parking space marked in the parking lot immediately off Auburn Avenue, next to the driveway leading to the major parking area behind the church. This parking space lacks the appropriate spacing to exit the vehicle. The closest door from this space would be the front door of the Church. However, there are already two steps before the front door can be reached. The height difference from the sidewalk is approx. 14”, without a ramp.

There is one other handicap parking area marked in the parking lot behind the church (south side). Starting from there a handicapped person in a wheelchair would move on to the level of the courtyard between the church building and the education building. From there the educational buildings first floor is relatively easy to be entered via a threshold, which, however, does not comply with the handicap code. The first floor of the education building does not provide an accessible route to the Sanctuary or the Fellowship Hall.

There are no other handicap parking areas designated.

Accessible Route to Fellowship Hall (1st floor)
An exterior door on Jackson Street (west side) has been retrofitted on the exterior side with a short plywood ramp to overcome the former granite sill height (the door was originally a window). A landing and ramp on the inside of the door allows handicap access to the floor of the Fellowship Hall. The ramp is continuous, 30 feet long, without a midlevel landing, and it does not provide an
appropriate handrail on either side. The height difference covered by the ramp is almost 5 feet and
the slope is approx. 1:6.

There are three other ways to enter the Fellowship Hall, all of which are only accessible via stairs.

**Accessible Route to Sanctuary** (2nd floor)
The main entrance to the Ebenezer Baptist Church is on Auburn Avenue. The vestibule floor is
approx. 15 inches above the level of the sidewalk, two concrete steps and a threshold up. There is no
ramp to overcome this level change. Once a handicapped person is moved to the floor of the
vestibule there are two separate chair lifts mounted next to the stairs in the east tower. These two
lifts require the handicapped person to move onto the first chair, reach the landing, transfer to the
second lift and then, having reached the Sanctuary level to be moved in another wheelchair to be
able to move within the Sanctuary.

There is basically no acceptable accessibility route to the Sanctuary.

**Accessibility Route to the Balcony** (3rd floor)
The Balcony level can only reached from the Sanctuary level. There is currently no possibility to
reach the Balcony on an accessible route.

**Accessibility of Restrooms**
The building has a group of restrooms on the 1st floor in the Fellowship Hall. These restrooms are
not on an accessibility route for the building. They can be reached via the above described ramp.
However, their internal layout and detailing does not comply with the handicap code.

**Handicap Drinking Fountain**
The only drinking fountain in the church building is installed at the entrance vestibule. The
currently installed fountain does not meet the requirements of accessibility as stated in the code.
FELLOWSHIP HALL LEVEL

SCALE: 3/16"=F.0"
ELECTRICAL LEGEND

- WALL SWITCH, MOUNTED 48" AFF.
- CEILING-MOUNTED FLUORESCENT LIGHT FIXTURE.
- RECESSED CEILING-MOUNTED LIGHT FIXTURE.
- WALL-MOUNTED LIGHT FIXTURE.
- EAT LIGHT, CEILING-MOUNTED, DARKENED SECTIONS INDICATE FIXTURES, APARTMENTS AS INDICATED.
- CEILING MOUNTED LIGHT FIXTURE.
- COMBINATION EXIT LIGHT AND BATTERY POWERED EYEMARK LIGHT, WALL-MOUNTED.
- SURFACE MOUNTED LIGHT FIXTURE.
- SURFACE MOUNTED TAD FIXTURE.
- DUAL SCONCE WITH LIGHT FIXTURE.
- DUAL SCONCE WITH LIGHT FIXTURE.
- DUAL SCONCE WITH LIGHT FIXTURE.

ABBREVIATIONS

ABR. ABBR.

AP/AR/AM ABOVE-FINISHED FLOOR/PLACE/POISE FLOOR
WHD. WALL HEIGHT
W. W. WALL
C CEILING
CR CIRCUIT BREAKER
CRL CIRCUITbreaker
CM CIRCUIT
D CLG. CEILING
ET ELECTRICAL METAL TUBING
EX EXPOSED
ERC. RUSI METAL CONDUIT
F FUSER
FIR FIRE
FX Fuse
FL FLOOR
HEC. HEAT EXCHANGE
LJ LOCATION
IDP INDOOR
K M KNEE
KEB KNEE BOX
MM MODERATE
PAN PANEL
PFL PANEL
RECP RECEPTACLE
URM UNLESS OTHERWISE NOTED

APPENDICES 23
DEFICIENCIES (THIS SHEET ONLY):

1. Replace surface mounted door contacts with recessed type or surface mounted contacts with armoured cables.
2. Add new security control panel and control keypad.
3. Audio-visual system modifications:
   OPTION 1: If the sound reinforcement and audio-visual systems are no longer used, and it is desirable to restore the church to a more historic state, then the abandoned equipment should be removed.
   OPTION 2: If the system is in use, or if a higher quality/level playback of Dr. King's audio tapes is desired, then the sound system should be re-cabled with the cabling concealed, and the sound reinforcement system cleaned and re-calibrated and cabling properly dressed.
   OPTION 3: Replace the sound reinforcement system with a system designed for current needs.

FELLOWSHIP HALL LEVEL

SCALE: 3/8" = 1'-0"

DRAWING LEGEND

- Magnetic door contact
- Motion detector
- Speaker (type indicated on drawing)
- 27" TV/monitor (type indicated on drawing)

NOT FOR CONSTRUCTION

BUILDING ASSESSMENT

UNIVERSAL STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
SOUTHEAST REGION
ARCHITECTURE DIVISION

FELLOWSHIP HALL LEVEL PLAN
ECONOMER ELECTRONIC SYSTEMS
EBENEZER BAPTIST CHURCH

ES-1
DEFICIENCIES (THIS SHEET ONLY):

1. Replace surface mounted door contacts with recessed type or surface mounted contacts with armored cables.

2. Add a passive infrared motion detector with 360° coverage, mount detector to sanctuary ceiling.

3. Audio-visual system modifications:
   - Option 1: If the sound reinforcement and audio-visual systems are no longer used, and it is desirable to restore the church to a more historic state, then the abandoned equipment should be removed.
   - Option 2: If the system is in use, or if a higher quality-level playback of Dr. King's audio tapes is desired, then the sound system should be re-cabled with the cabling concealed, and the sound reinforcement system cleaned and re-calibrated and cabling properly dressed.
   - Option 3: Replace the sound reinforcement system with a system designed for current needs.

DRAWING LEGEND

- Magnetic door contact
- Motion detector
- Speaker (type indicated on drawing)
- 27" TV/monitor (type indicated on drawing)

NOT FOR CONSTRUCTION

BUILDING ASSESSMENT

SANCTUARY LEVEL PLAN - ELECTRONIC SYSTEMS

BENNEZER BAPTIST CHURCH

ARCHITECTURE DIVISION
DEFICIENCIES (THIS SHEET ONLY):

1. AUDIO-VISUAL SYSTEM MODIFICATIONS:
   OPTION 1: IF THE SOUND REINFORCEMENT AND AUDIO-VISUAL SYSTEMS ARE NO LONGER USED AND IT IS DESIRABLE TO RESTORE THE CHURCH TO A MORE HISTORIC STATE, THEN THE ABANDONED EQUIPMENT SHOULD BE REMOVED.
   OPTION 3: REPLACE THE SOUND REINFORCEMENT SYSTEM WITH A SYSTEM DESIGNED FOR CURRENT NEEDS.

BALCONY LEVEL
SCALE= 3/4"=1'-0"

DRAWING LEGEND

- MAGNETIC DOOR CONTACT
- MOTION DETECTOR
- SPEAKER (TYPE INDICATED ON DRAWING)
- 27" TV/MONITOR (TYPE INDICATED ON DRAWING)

NOT FOR CONSTRUCTION

BUILDING ASSESSMENT

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
ARCHITECTURE DIVISION

FILE No. EB-21

DATE 10/22/1988

ARCHITECT: D. A. JOHNSON
ENGINEER: J. J. TAYLOR
DRAWER: J. J. TAYLOR
November 25, 2002

Ms. Karen M. Gravel
Lord Aeck Sargent, Architecture
1201 Peachtree Street NE, Suite 300
Atlanta, GA 30361-3300

Dear Ms. Gravel:

Here is the report of my visit to Ebenezer Baptist Church. I was quite impressed with the church and recognize the potential for restoration. Returning the period colors to the interior will be a major step in reflecting the essence of this important structure.

I will forward the sand/fines samples under separate cover.

If you need further information or clarification please call.

Sincerely,

Andrew Ladygo

Enc. Report
Ebenezer Baptist Church
Historic Plaster
Condition Survey

This report is the result of a site visit to Ebenezer Baptist Church in Atlanta, Georgia on October 22 and 23, 2002, and subsequent laboratory analysis of samples taken at that time. The purpose of the study is to determine existing conditions at the site and provide recommendations for treatment.

The report is in three sections. Observations describes existing conditions at the site and probable causes of current physical damage. The Laboratory section provides analysis of the materials used during construction and later repairs. The final section provides recommendations for the treatment of damaged areas.

The survey was conducted through visual inspection, including binocular observation of upper levels combined with sounding of all areas accessible using the 16-foot ladder provided. Moisture readings were taken at regular intervals across the same surfaces with particular attention to areas of visual disturbance.

Areas of high moisture content were noted on elevations provided by the architect. Most readings were taken prior to a moderate rainstorm and represent a chronic condition. In some areas of moisture damage coatings were removed to examine the original plaster beneath.

Photographs were taken of select locations which exhibit conditions described in the report. These photos are included as Appendix A.
Ebenezer Baptist Church
Historic Plaster
Condition Survey-2

Observations

There are areas of obvious moisture damage throughout the building. In many instances repairs have been made in the past and are again in failure. This would suggest that the problem of moisture infiltration has not been abated, and possibly not clearly identified.

Plaster has been almost entirely removed from the upper portion of the east and west walls of Fellowship Hall, exposing the original brickwork beneath. The plaster over the lower portion of the walls remains and is in serviceable condition. This lower portion is below grade on both elevations and records moderately elevated moisture content uniformly across the surface. The exposed brickwork is above grade and registers no measurable moisture content.

Plaster at this lowest level of stair halls on both east and west elevations is badly damaged with considerable efflorescence. Both areas are below grade and coincidentally associated with conductor pipes handling roof water. It would be safe to assume failure of the roof drainage system as a likely cause of the immediate problem.

The forward or northerly stair halls exhibit damage beneath window units at every elevation. Again, efflorescence is quite prominent and moisture readings quite high. These areas have been patched in the past and are again in failure. Wall surfaces which have not been previously repaired show no sign of deterioration.

Interior walls not exposed to the envelope are in fine condition though some patching has been done in the past. The many cracks visible appear to be related more to failure of the paint coatings than the plaster substrate.

In the sanctuary, walls which are visibly deteriorated again show high moisture content while adjacent surfaces remain dry, suggesting localized conditions as the cause of failure. These areas generally have been repaired in the past as well.

Most severe was the condition of the east wall in the bay, which contains the large speaker. Moisture readings on this section of wall were consistently high in the extreme. An exposure beneath the speaker revealed an original surface largely intact and in good condition while paint films and later shim coats were in total failure.
The earliest coatings on this wall are distemper paints which remain water soluble. Later coatings are bound only to this layer which in the presence of moisture, softens; leading to failure of the coatings above. The presence of these early distemper coatings render the entire surface vulnerable, and no surface treatments are likely to abate the situation. In fact, the waterproof coatings applied most recently to patched areas likely exacerbated the condition.

Exterior walls of both the north and west elevations are of fine brickwork with tight mortar joints. Most mortar is intact, but there are several areas which need repointing. There are several large cracks at buttresses and windows along the west wall which might be capable of permitting infiltration of moisture. One extremely damp location on the interior plaster relates directly to the chimney on this elevation. While it is capped and the flashing appears to be in good condition, this area needs closer inspection.

Stucco on lower portions of the north and west elevations appears to be a later application over an earlier rendering. I did not explore this possibility further, but soundings suggested many voids beneath the present surface. Only one location, midway on the west elevation, does the delamination appear severe.

Much of the most severe damage to the sanctuary plaster appears on the east elevation. Exterior brickwork on the east elevation is of a totally different character. Here we have five course American bond with crude brick and wide mortar joints. The mortar is not continuous, with occasional gaps, further aggravated by numerous small holes likely created by boring bees.

The plaster area described earlier as being most severe relates directly to the conductor pipe from the eaves trough. Brickwork around this pipe is stained as well.

Plaster damage below grade is directly associated with inadequate perimeter drainage and window wells along this elevation. No damage was noted at the chimney location, but this area should be examined further as well.
Recommendations

The most critical damage has resulted from moisture infiltration, which has likely been an ongoing situation. Early repairs and the most recent repairs are subject to even greater deterioration by their nature. Gypsum plaster and wallboard compound were both found in the repaired areas and both are more susceptible to water damage than the original plaster.

The presence of early distemper coatings under much of the existing paint could conceivably become a problem if moisture continues to saturate the plaster. In many areas which are not presently wet there is severe alligating of paint likely attributable to this condition.

Prior to the stabilization and restoration of the plaster walls a thorough repointing of the exterior brickwork should be completed as well as the implementation of an appropriate drainage system for the perimeter walls.

The east wall and west upper walls of Fellowship Hall can be re-plastered following the original scheme. Base coat should consist of:

1. 1 part Portland cement
2. 2 part lime putty
3. 7-8 parts sand to match sample

Finish coat to be:

1. 1 part lime putty
2. 1 part sand to match

Gauge with white Portland cement at about 15% by volume. This should be smooth troweled to a polished surface.
Ebenezer Baptist Church
Historic Plaster
Condition Survey-5

The stair halls will require that all damaged plaster be cut back to sound substrate. In most cases this will be to the brick surface, but some original base coat may be found to be serviceable. New base coat should be:

1 part lime putty
2.5 parts sand to match

This mix then gauged with 10% by volume gauging plaster for application.

New finish coat should be:

1 part gauging plaster
2 parts lime putty

Sanctuary walls will require close examination to determine the extent of potential loss. All visibly damaged areas should be cut back to sound substrate. In many cases the original finish plaster will remain serviceable once the affected coatings are removed. Where efflorescence has compromised the original finish coat it should be removed as well. All later patching must be removed to sound original substrate.

It should be established that no new plaster be applied over old painted surfaces and that all new work be cut into the original finish to form a smooth plane. Plaster for repair should be identical to that described for the stair halls.

With the failed coatings removed, surface cracks may be found in the original plaster surface. Hairline cracks will likely require no treatment at all other than light sanding prior to painting. Larger cracks should be repaired conventionally, cutting out to at least 1/8" in width and depth, and patching with the finish coat plaster recommended above.
Ebenezer Baptist Church
Historic Plaster
Condition Survey-6

Laboratory Analysis

Eleven samples were brought to the lab for analysis. They are labeled as follows:

1. Fellowship Base Coat
2. Fellowship Finish Coat
3. Fellowship Hall Coating
4. Brick Mortar
5. Sanctuary Base Coat
6. Sanctuary Finish Coat
7. Balcony Base Coat
8. Balcony Finish Coat
9. Cellar East - Stair
10. North Wall - Stair
11. Sanctuary Patch

Each sample was observed under low power magnification to determine gross features. Distilled water was used to evaluate solubility of patching compounds and paint films. Mortar and plaster samples were broken down in dilute Hydrochloric acid to identify components and approximate proportions of each. Results of this process were recorded on mortar analysis sheets which are included as Appendix B.

Sample 1 - Fellowship Base Coat
Applied directly to brick substrate approximately 3/4" to ½" thick

Sample 2 - Fellowship Finish Coat
Small sample - lots of paint. Approximately 1/16" thick. Composed of lime/sand, and a small percentage of cement

Sample 3 - Fellowship Hall Coating
From lower wall - peeling - removed in rubbery sheet. Likely most recent coating of waterproofing.

Sample 4 - Brick Mortar - East Wall
Cement/lime/sand. Good mortar - proportion of 1 cement 2 lime 7-9 sand
Sample 5 - Sanctuary Base Coat
Small sample - lime/sand possibly trace of gypsum

Sample 6 - Sanctuary Finish Coat
Lime/gauging - standard white coat 1/16" thick

Sample 7 - Balcony Base Coat
Lime/sand/hair - possible trace of gypsum - over wood lath

Sample 8 - Balcony Finish Coat
Lime/gauging - standard white coat 1/8" thick

Sample 9 - Cellar Stair - East
patching material lime/gauging white coat 1/4" thick

Sample 10 - Stair - North Wall
patch - lime/gauging white coat 1/4" thick

Sample 11 - Sanctuary Patch
water soluble - joint compound - flexible coating over
Ebenezer Baptist Church
Historic Plaster
Condition Survey-3

Recommendations
The most critical damage has resulted from moisture infiltration, which has likely been an ongoing situation. Early repairs and the most recent repairs are subject to even greater deterioration by their nature. Gypsum plaster and wallboard compound were both found in the repaired areas and both are more susceptible to water damage than the original plaster.

The presence of early distemper coatings under much of the existing paint could conceivably become a problem if moisture continues to saturate the plaster. In many areas which are not presently wet there is severe alligatoring of paint likely attributable to this condition.

Prior to the stabilization and restoration of the plaster walls, a thorough re-pointing of the exterior brickwork should be completed as well as the implementation of an appropriate drainage system for the perimeter walls.

The east and west upper walls of Fellowship Hall can be re-plastered following the original scheme. Base coat should consist of:

1 part Portland cement
2 part lime putty
7-8 parts sand to match sample.

Finish coat to be:

2 part lime putty
1 part sand to match

Gauge with white Portland cement at about 15% by volume. This should be smooth troweled to a polished surface.

The stair halls will require that all damaged plaster be cut back to sound substrate. In most cases this will be to the brick surface, but some original base coat may be found to be serviceable. New base coat should be:

1 part lime putty
2.5 parts sand to match

This mix then gauged with 10% by volume gauging plaster for application.
Ebenezer Baptist Church
Historic Plaster
Condition Survey-9

New finish coat should be:

1 part gauging plaster
2 parts lime putty

Sanctuary walls will require close examination to determine the extent of potential loss. All visibly damaged areas should be cut back to sound substrate. In many cases the original finish plaster will remain serviceable once the affected coatings are removed. Where efflorescence has compromised the original finish coat it should be removed as well. All later patching must be removed to sound original substrate.

It should be established that no new plaster be applied over old painted surfaces and that all new work be cut into the original finish to form a smooth plane. Plaster for repair should be identical to that described for the stair halls.

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Ebenezer Baptist Church
Historic Plaster
Condition Survey

APPENDIX B
MORTAR ANALYSIS SHEETS
APPENDIX C

Ebenezer Baptist Church

MORTAR ANALYSIS SHEETS

Stucco Finish

Black Mortar - West Wall
ARCHITECTURAL CONSERVATION SERVICES
Post Office Box 506
Manchester By The Sea, MA 01944

MORTAR ANALYSIS

JOB: EBBEZEZ BAPTIST CHURCH

DATE: 11/29/03

SAMPLE: STUCCO FINISH

SAMPLE WEIGHT: 37.73 g

SAMPLE HARDNESS:

TEST SAMPLE WEIGHT: 30 g

TEST SAMPLE COLOR: 10 YR 8/1

NOTES:

EXTREMELY HARD
TWO LAYERS OVER BASIC
1st LAYER DARKER COLOR - HARDER -

WEIGHT SOLUBLE FRACTION: 7.32 g

WEIGHT SAND: 10.66 g

COLOR SAND: 2.5 Y - 7/2

WEIGHT FINES: 2.02 g

COLOR FINES: 5 Y - 7/1

SCREEN SAND | WEIGHT | CUMULATIVE WEIGHT | % PASS
-------------|--------|------------------|---------
#8           | 0      | 0                | 100 %   |
#16          | 0.07 g | 0.07 g           | 99.3 %  |
#30          | 2.23 g | 2.30 g           | 78.7 %  |
#50          | 4.18 g | 6.48 g           | 39 %    |
#100         | 3.33 g | 9.81 g           | 87 %    |
#200         | 1.75 g | 10.56 g          | 10 %    |
PASS         | 1.10 g | 10.66 g          | 0 %     |

NOTES:
Mild Reaction in HCl
Slow to Digest
Yellow Staining - bright
Fine Aggregate
Quartz - opaque
Angular or Sub Angular Particles
MORTAR ANALYSIS

JOB EBENEZER BAPTIST CHURCH  DATE 11/29/03

SAMPLE BRICK MORTAR - WEST WALL

SAMPLE WEIGHT 47.31 g  SAMPLE HARDNESS -

TEST SAMPLE WEIGHT 80 g  TEST SAMPLE COLOR 10 YR - 8/2

NOTES:

Thick Cross Section
Friable - Fine Powder

WEIGHT SOLUBLE FRACTION 5.47 g

WEIGHT SAND 13.28 g  COLOR SAND 10 YR - 7/2

WEIGHT FINES 1.31 g  COLOR FINES 10 YR - 8/2

SCREEN SAND  WEIGHT  CUMULATIVE WEIGHT  % PASS
#8  0  0  100%
#16  .05 g  .05 g  99.8%
#30  4.28 g  4.33 g  68%
#50  6.37 g  10.70 g  19%
#100  2.09 g  12.79 g  3%
#200  .11 g  13.20 g  2%
PASS  .03 g  13.23 g  ~ 0%

NOTES:

Strong reaction in HCL
No staining
Fine aggregate primarily quartz
Clear to opaque
Angular to subangular particles
MORTAR ANALYSIS

JOB: EBENEZER BAPTIST CHURCH  DATE: 11/19/02
SAMPLE #1: FELLOWSHIP BASECOAT

SAMPLE WEIGHT: 23.72 g  SAMPLE HARDNESS: 
TEST SAMPLE WEIGHT: 20 g  TEST SAMPLE COLOR: 10YR-6/2

NOTES: QUITE HARD  
1/4" - 3/8" thick

WEIGHT SOLUBLE FRACTION: 4.01 g

WEIGHT SAND: 15.27 g  COLOR SAND: 10YR-6.5/2
WEIGHT FINES: 0.72 g  COLOR FINES: 10YR-6/2

<table>
<thead>
<tr>
<th>SCREEN SAND</th>
<th>WEIGHT</th>
<th>CUMULATIVE WEIGHT</th>
<th>% PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>0.03 g</td>
<td>0.03 g</td>
<td>99.9%</td>
</tr>
<tr>
<td>#16</td>
<td>0.78 g</td>
<td>0.81 g</td>
<td>95%</td>
</tr>
<tr>
<td>#30</td>
<td>3.79 g</td>
<td>4.60 g</td>
<td>70%</td>
</tr>
<tr>
<td>#50</td>
<td>7.37 g</td>
<td>11.97 g</td>
<td>32%</td>
</tr>
<tr>
<td>#100</td>
<td>2.99 g</td>
<td>14.96 g</td>
<td>3%</td>
</tr>
<tr>
<td>#200</td>
<td>0.38 g</td>
<td>15.34 g</td>
<td>2%</td>
</tr>
<tr>
<td>PASS</td>
<td>0.03 g</td>
<td>15.37 g</td>
<td>0%</td>
</tr>
</tbody>
</table>

NOTES: SLOW REACTION IN HEIR  
YELLOW STAIN  
PRIMARILY QUARTZ AGGREGATE  
MEAL PRESENT IN SMALL QUANTITY

APPENDICES 44
MORTAR ANALYSIS

JOB: BEENEZER BAPTIST CHURCH

SAMPLE #2 FELLOWSHIP FINISH COAT

SAMPLE WEIGHT 11.10 g  SAMPLE HARDNESS  
TEST SAMPLE WEIGHT 10.0 g  TEST SAMPLE COLOR 2.5Y 9/1

NOTES: SMALL SAMPLE, PAINT CONTAMINATION
       Thin Finish

WEIGHT SOLUBLE FRACTION 5.03 g

WEIGHT SAND 4.23 g  COLOR SAND 10 YR 7/3

WEIGHT FINES .74 g  COLOR FINES 2.5Y 6/3

SCREEN SAND  WEIGHT  CUMULATIVE WEIGHT  % PASS

<table>
<thead>
<tr>
<th>Screen</th>
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<th>Cumulative Weight</th>
<th>% Pass</th>
</tr>
</thead>
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<tr>
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<td>0.00</td>
<td>0.00</td>
<td>100%</td>
</tr>
<tr>
<td>#16</td>
<td>0.07</td>
<td>0.07</td>
<td>99%</td>
</tr>
<tr>
<td>#30</td>
<td>1.70</td>
<td>1.72</td>
<td>58%</td>
</tr>
<tr>
<td>#50</td>
<td>1.78</td>
<td>3.55</td>
<td>16%</td>
</tr>
<tr>
<td>#100</td>
<td>0.60</td>
<td>4.15</td>
<td>2%</td>
</tr>
<tr>
<td>#200</td>
<td>0.07</td>
<td>4.22</td>
<td>3%</td>
</tr>
<tr>
<td>PASS</td>
<td>0.01</td>
<td>4.23</td>
<td>-</td>
</tr>
</tbody>
</table>

NOTES: MODERATE REACTION IN HEL
       YELLOW STAIN
       FINE QUARTZ AGGREGATE

APPENDICES 45
ARCHITECTURAL CONSERVATION SERVICES
Post Office Box 506
Manchester By The Sea, MA 01944

MORTAR ANALYSIS

JOB: EBEIZER BAPTIST CHURCH

SAMPLE: #4 BRICK MORTAR

SAMPLE WEIGHT: 31.30 g
SAMPLE HARDNESS: —

TEST SAMPLE WEIGHT: 20 g
TEST SAMPLE COLOR: 10 YR - 8/2

NOTES:
Strong mortar
Large chunks
Thick

WEIGHT SOLUBLE FRACTION: 4.08 g

WEIGHT SAND: 14.55 g
COLOR SAND: 10 YR - 7.5/2

WEIGHT FINES: 1.37 g
COLOR FINES: 2.5 Y - 6/2

<table>
<thead>
<tr>
<th>SCREEN SAND</th>
<th>WEIGHT</th>
<th>CUMULATIVE WEIGHT</th>
<th>% PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>.03 g</td>
<td>.03 g</td>
<td>99.5%</td>
</tr>
<tr>
<td>#16</td>
<td>.16 g</td>
<td>.19 g</td>
<td>99.7%</td>
</tr>
<tr>
<td>#30</td>
<td>2.47 g</td>
<td>2.66 g</td>
<td>82%</td>
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<tr>
<td>#50</td>
<td>7.30 g</td>
<td>9.86 g</td>
<td>32%</td>
</tr>
<tr>
<td>#100</td>
<td>14.06 g</td>
<td>13.92 g</td>
<td>4%</td>
</tr>
<tr>
<td>#200</td>
<td>.06 g</td>
<td>14.58 g</td>
<td>.3%</td>
</tr>
<tr>
<td>PASS</td>
<td>.03 g</td>
<td>14.58 g</td>
<td>-0-</td>
</tr>
</tbody>
</table>

NOTES:
Moderate reaction in red
Aggregates well graded quartz
Angular to sub-angular
Yellow stain
MORTAR ANALYSIS

JOB  EPIMEMEZ BAPTIST CHURCH  DATE  11/19/02

SAMPLE  #5  SANCTUARY BASECOAT

SAMPLE WEIGHT  11.62 g  SAMPLE HARDNESS  —

TEST SAMPLE WEIGHT  8.5 g  TEST SAMPLE COLOR  10 YR 7/2

NOTES:  Still wet in sample bag
         No Hair

WEIGHT SOLUBLE FRACTION  1.93 g

WEIGHT SAND  6.31 g  COLOR SAND  10 YR 7.5/2

WEIGHT FINES  2.6 g  COLOR FINES  10 YR 7/3

SCREEN SAND  WEIGHT  CUMULATIVE WEIGHT  % PASS

#8  .03 g  .03 g  99%
#16  .42 g  .46 g  93%
#30  2.46 g  2.92 g  54%
#50  2.31 g  5.23 g  17%
#100  .92 g  6.15 g  3%
#200  .15 g  6.30 g  .3%
PASS  .01 g  6.31 g  0

NOTES:  Strong reaction in HCL
         primarily quartz
         Angular to sub-angular
MORTAR ANALYSIS

JOB: EBENEZER BAPTIST CHURCH
SAMPLE: #7 Balcony Basecoat
DATE: 11/14/02

SAMPLE WEIGHT: 47.22g
SAMPLE HARDNESS:
TEST SAMPLE WEIGHT: 20g
TEST SAMPLE COLOR: 10YR - 8/2

NOTES:
- G000 STRENGTH
- HAIR PRESENT
- OVER WOOD CATH

WEIGHT SOLUBLE FRACTION: 2.7g
WEIGHT SAND: 16.95g
COLOR SAND: 10YR - 7.5/2
WEIGHT FINES: 0.35g
COLOR FINES: 2.5Y - 6.5/2

<table>
<thead>
<tr>
<th>SCREEN SAND</th>
<th>WEIGHT</th>
<th>CUMULATIVE WEIGHT</th>
<th>% PASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8</td>
<td>0.02g</td>
<td>0.02g</td>
<td>99.87</td>
</tr>
<tr>
<td>#16</td>
<td>1.64g</td>
<td>1.66g</td>
<td>90%</td>
</tr>
<tr>
<td>#30</td>
<td>8.65g</td>
<td>10.31g</td>
<td>39%</td>
</tr>
<tr>
<td>#50</td>
<td>5.15g</td>
<td>15.48g</td>
<td>9%</td>
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<td>#100</td>
<td>1.35g</td>
<td>16.83g</td>
<td>1%</td>
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<tr>
<td>#200</td>
<td>0.01g</td>
<td>16.94g</td>
<td>1%</td>
</tr>
<tr>
<td>PASS</td>
<td></td>
<td>16.95g</td>
<td></td>
</tr>
</tbody>
</table>

NOTES:
- STRONG REACTION IN HEL
- Aggregate well graded granite
- Angular to Sub Angular
Ebenezer Baptist Church
   Historic Plaster
   Condition Survey

APPENDIX A
PHOTOGRAPHS

1. North Elevation
2. Fellowship Hall
   West Wall
3. Stair Hall
   West Wall
4. Stair Hall
   North Wall
5. Sanctuary
   East Wall Damage
6. Sanctuary
   East Wall Exposure
7. Exterior
   East Wall
8. Exterior
   East Wall
Construction Materials Consultants
Wallace House, Whitehouse Road, Stirling, FK7 7TA
Tel 01786 434708 Fax 01786 475133
E-mail mail@cmcsirling.co.uk

Lord Aeck & Sargent
1201 Peachtree Street NE
Suite 300
Atlanta
Georgia, 30361-3500
USA

Our Ref: M/0255/03/R1/C1
Your Ref: 22029-00

28th September 2003

CERTIFICATE OF ANALYSIS OF A MORTAR SAMPLE FOR MIX PROPORTIONS

Project Reference: Ebenezer Baptist Church, Atlanta
Sample Location: Outside corners of Buttress at base of building
               from an area constructed in 1914
Sample Description: Brickwork Jointing Mortar
Client Sample Ref.: Sample 0041
Date Received: 4th September 2003
Lab Ref: SR 725 S1a
Date of Test: 15th & 17th September 2003
Method of Test: In-house method based on acid dissolution following
               the procedures of the SLCT Test methods

1 Constituents % by mass

<table>
<thead>
<tr>
<th>Constituent</th>
<th>% by mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insoluble Residue (Sand), % by dry mass</td>
<td>78.15</td>
</tr>
<tr>
<td>Binder, % by dry mass</td>
<td>21.85</td>
</tr>
<tr>
<td>As Received Moisture Content</td>
<td>0.42</td>
</tr>
</tbody>
</table>

2 Approximate mix composition as a ratio of aggregate to binder by mass

<table>
<thead>
<tr>
<th>Component</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>3.58</td>
</tr>
<tr>
<td>Lime</td>
<td>1.0</td>
</tr>
</tbody>
</table>

3 Mortar mix proportion by volume

<table>
<thead>
<tr>
<th>Component</th>
<th>Lime Hydrate Mix</th>
<th>Lime Putty Mix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggregate</td>
<td>1.88</td>
<td>2.41</td>
</tr>
<tr>
<td>Lime</td>
<td>1.00</td>
<td>1.00</td>
</tr>
</tbody>
</table>
4 Aggregate Grading

Following the digestion of the binder the insoluble residue was recovered, dried and submitted to a grading analysis. The particle size distribution is presented pictorially in the form of a sand graph, see attached, and in tabular form in the following table:

Grading Analysis

<table>
<thead>
<tr>
<th>BS Sieve Size</th>
<th>% Retained on BS sieve</th>
<th>Cumulative % passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>5.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2.36mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1.18mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>600μm</td>
<td>3.19</td>
<td>96.8</td>
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<tr>
<td>300μm</td>
<td>34.23</td>
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<tr>
<td>150μm</td>
<td>40.74</td>
<td>21.9</td>
</tr>
<tr>
<td>75μm</td>
<td>15.78</td>
<td>6.1</td>
</tr>
<tr>
<td>Passing</td>
<td>6.05</td>
<td></td>
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</tbody>
</table>

5 Summary

The sample received consisted of several small pieces of aggregates bound together with a weak matrix in a bag of loose sand and fines. The pieces were soft and finger friable, easily disaggregated under light finger pressure, although the mortar was apparently well compacted, with few voids observed. Small localised lime inclusions were noted, the shape and texture of the inclusions were such as to suggest that the binder used in the mix was most likely a lime putty.

The colour of the mortar was assessed by comparison with the “Munsell Soil Color Charts” and was found to be 10YR 8.2 – very pale brown.

From an XRD analysis on a concentrated binder sample it was confirmed that there were no hydraulic components were identified in the sample submitted. A minor gypsum content may suggest some sulphation of the lime by a reaction with acid rain or sulphate bearing ground waters, i.e. rising damp.

It is therefore concluded that the mortar from which the sample was obtained is a fat lime mortar. No dolomitic components or magnesium based hydration or carbonation products were detected, thereby indicating that the lime used was a high calcium lime.

6 Quality Statement

We confirm that in the preparation of this report we have exercised reasonable skill and care.
Ebenezer Baptist Church, Atlanta
Sample No. S1A
Corner of Buttress, low level - circa 1914

[Bar chart showing percentage of aggregate retained in different sieve mesh sizes, with bars indicating 34%, 41%, and 22% for different mesh sizes.]
CERTIFICATE OF ANALYSIS OF A MORTAR SAMPLE FOR MIX PROPORTIONS

<table>
<thead>
<tr>
<th>Project Reference</th>
<th>Ebenezer Baptist Church, Atlanta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Location</td>
<td>Outside corners of Buttress, approximately 3 feet</td>
</tr>
<tr>
<td></td>
<td>Below sill of stained glass window, from an area constructed in 1922</td>
</tr>
<tr>
<td>Sample Description</td>
<td>Brickwork Jointing Mortar</td>
</tr>
<tr>
<td>Client Sample Ref.</td>
<td>Sample 0042</td>
</tr>
<tr>
<td>Date Received</td>
<td>4th September 2003</td>
</tr>
<tr>
<td>Lab Ref.</td>
<td>SR 725 S2a</td>
</tr>
<tr>
<td>Date of Test</td>
<td>15th to 17th &amp; 22nd to 24th September 2003</td>
</tr>
<tr>
<td>Method of Test</td>
<td>In-house method based on the procedures of BS4551: Part 2: 1998</td>
</tr>
</tbody>
</table>

1. Constituents
   - Insoluble Residue: 62.08%
   - Soluble Silica (SiO₂): 3.95%
   - Calcium Oxide (CaO): 16.60%
   - Loss on Ignition: 14.94%
   - As Received Moisture Content: 0.74%

2. Calculated composition of the sample expressed to the nearest 0.5% by mass on dry mass
   - Cement: 22.5%
   - Lime: 6.0%
   - Sand: 71.5%
Ebenezer Baptist Church, Atlanta
Sample No. S2A
Corner of Buttress, below sill - circa 1922
Construction Materials Consultants
Wallace House, Whitehouse Road, Stirling, FK7 7TA
Tel 01786 434708 Fax 01786 475133
E-mail mail@cmcstirling.co.uk

Lord Aeck & Sargent
1201 Peachtree Street NE
Suite 300
Atlanta
Georgia, 30361-3500
USA

Our Ref: M/0255/03/R1/C3
Your Ref: 22029-00
28th September 2003

CERTIFICATE OF ANALYSIS OF A MORTAR SAMPLE FOR MIX PROPORTIONS

<table>
<thead>
<tr>
<th>Project Reference</th>
<th>Ebenezer Baptist Church, Atlanta</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Location</td>
<td>Sample taken from the stair tower on the eastern elevation, below window, from an area constructed in 1922</td>
</tr>
<tr>
<td>Sample Description</td>
<td>Brickwork Jointing Mortar</td>
</tr>
<tr>
<td>Client Sample Ref.</td>
<td>Sample 0044</td>
</tr>
<tr>
<td>Date Received</td>
<td>4th September 2003</td>
</tr>
<tr>
<td>Lab Ref</td>
<td>SR 725 S4a</td>
</tr>
<tr>
<td>Date of Test</td>
<td>15th to 17th &amp; 22nd to 24th September 2003</td>
</tr>
<tr>
<td>Method of Test</td>
<td>In-house method based on the procedures of BS4551: Part 2: 1998</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Constituents</th>
<th>% by mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insoluble Residue</td>
<td>61.22</td>
</tr>
<tr>
<td>Soluble Silica (SiO₂)</td>
<td>4.30</td>
</tr>
<tr>
<td>Calcium Oxide (CaO)</td>
<td>17.23</td>
</tr>
<tr>
<td>Loss on Ignition</td>
<td>14.18</td>
</tr>
<tr>
<td>As Received Moisture Content</td>
<td>0.66</td>
</tr>
</tbody>
</table>

2. Calculated composition of the sample expressed to the nearest 0.5% by mass on dry mass

<table>
<thead>
<tr>
<th>Constituent</th>
<th>% by mass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland Cement</td>
<td>24.5</td>
</tr>
<tr>
<td>Lime</td>
<td>5.0</td>
</tr>
<tr>
<td>Sand</td>
<td>70.5</td>
</tr>
</tbody>
</table>
3 Approximate volume proportions calculated on the basis of the assumptions mentioned in BS 4551: Part 2: 1998

Portland Cement  1.0
Lime  0.5
Sand  2.5

4 Aggregate Grading

Following the digestion of the binder the insoluble residue was recovered, dried and submitted to a grading analysis. The particle size distribution is presented pictorially in the form of a sand graph, see attached, and in tabular form in the following table:

### Grading Analysis

<table>
<thead>
<tr>
<th>BS Sieve Size</th>
<th>% Retained on BS sieve</th>
<th>Cumulative % passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>5.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2.36mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1.18mm</td>
<td>2.73</td>
<td>97.3</td>
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<tr>
<td>600μm</td>
<td>15.03</td>
<td>82.3</td>
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<tr>
<td>300μm</td>
<td>34.18</td>
<td>48.1</td>
</tr>
<tr>
<td>150μm</td>
<td>27.39</td>
<td>20.7</td>
</tr>
<tr>
<td>75μm</td>
<td>9.30</td>
<td>11.4</td>
</tr>
<tr>
<td>Passing</td>
<td>11.41</td>
<td></td>
</tr>
</tbody>
</table>

5 Summary

The sample received consisted of a number of pieces of hard well bonded mortar. The mortar was hard and resisted breakage under finger pressure. The mortar is intact and showed no tendency towards friability and was uniform throughout its thickness, with no lime inclusions observed. The mortar was indicated to retain small patches of uncarbonated material. The colour of the mortar was assessed by comparison with the “Munsell Soil Color Charts” and was assessed as to be 10YR 8.1 – white.

From an XRD analysis on a concentrated binder sample it was indicated that the mortar was most likely based on a Portland type cement with added lime. A sub-sample was analysed by the methods of BS 4551 with the result that the mortar was classified as a cement/lime/sand mix, with the following volume proportions:

1.0 (cement) : 0.5 (hydrated lime) : 2.5 (sand)

6 Quality Statement

We confirm that in the preparation of this report we have exercised reasonable skill and care.
Ebenezer Baptist Church, Atlanta
Sample No. S4A
Stair Tower, Eastern Elevation, Below window- circa 1922
CERTIFICATE OF ANALYSIS OF A MORTAR SAMPLE FOR MIX PROPORTIONS

Project Reference : Ebenezer Baptist Church, Atlanta
Sample Location : Sample taken from the 1970's addition
Sample Description : Brickwork Jointing Mortar
Client Sample Ref. : Sample 0045
Date Received : 4th September 2003
Lab Ref : SR 725 S5a
Date of Test : 15th to 17th & 22nd to 24th September 2003
Method of Test : In-house method based on the procedures of BS4551 : Part 2 : 1998

1 Constituents % by mass

Insoluble Residue 75.42
Soluble Silica (SiO₂) 3.71
Calcium Oxide (CaO) 10.85
Loss on Ignition 8.72
As Received Moisture Content 0.34

2 Calculated composition of the sample expressed to the nearest 0.5% by mass on dry mass

Portland Cement 18.0
Sand 82.0

3 Approximate volume proportions calculated on the basis of the assumptions mentioned in BS 4551 : Part 2: 1998

Portland Cement 1.0
Sand 3.9
4 Aggregate Grading

Following the digestion of the binder the insoluble residue was recovered, dried and submitted to a grading analysis. The particle size distribution is presented pictorially in the form of a sand graph, see attached, and in tabular form in the following table:

**Grading Analysis**

<table>
<thead>
<tr>
<th>BS Sieve Size</th>
<th>% Retained on BS sieve</th>
<th>Cumulative % passing</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>5.00mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>2.36mm</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>1.18mm</td>
<td>0.30</td>
<td>99.7</td>
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<tr>
<td>600μm</td>
<td>9.11</td>
<td>90.6</td>
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<td>300μm</td>
<td>44.43</td>
<td>46.2</td>
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<tr>
<td>150μm</td>
<td>32.30</td>
<td>13.9</td>
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<tr>
<td>75μm</td>
<td>10.02</td>
<td>3.8</td>
</tr>
<tr>
<td>Passing</td>
<td>3.84</td>
<td></td>
</tr>
</tbody>
</table>

5 Summary

The sample received consisted of a single large piece of hard well bonded mortar plus several smaller pieces with some aggregates and disaggregated fines. The mortar was hard and resisted breakage under finger pressure. The mortar is intact and showed no tendency towards friability. The outer surfaces of the intact pieces were heavily soiled with carbon based pollutants and some local organic growths. The mortar was indicated, from indicator tests to be fully carbonated. The colour of the mortar was assessed by comparison with the “Munsell Soil Color Charts” and was assessed as to be 2.5Y 8.1 – white.

From an XRD analysis on a concentrated binder sample it was indicated that the mortar was likely based on a cement, which, from the mineralogy, appeared to be an aluminous cement or a Portland type cement with a high aluminium content. A sub-sample was analysed by the methods of BS 4551 with the result that the mortar was classified as a cement/sand mix, with the following volume proportions:

\[ 1.0 \text{ (cement)} : 3.9 \text{ (sand)} \]

6 Quality Statement

We confirm that in the preparation of this report we have exercised reasonable skill and care.
Ebenezer Baptist Church, Atlanta
Sample No. SSA
1970's addition

![Graph showing percentage of aggregate retained across sieve mesh sizes: 10.00mm, 5.00mm, 2.36mm, 1.18mm, 0.60mm, 0.30mm, 0.15mm, <0.15mm. The graph indicates that 44% is retained at 0.30mm, 32% at 0.15mm, and 14% at <0.15mm. Other sizes have 0% retention.]
CERTIFICATE OF ANALYSIS BY X-RAY DIFFRACTION

Project Reference : Ebenezer Baptist Church
Sample Location : Outside corners of buttress at approx 3 feet below sill of stained glass window
Sample Description : Bed joint mortar – circa 1922
Client Sample Ref. : Sample S2A
Date Received : 4th September 2003
Lab Ref : SR 725 S2A
Date of Test : 9th -11th September 2003
Method of Test : In-house procedures.

Results of Analysis

Results of the analysis are presented in the attached diffractograms; see appended Figure No. 1. The short-hand notation used in the diffractograms to identify the peak positions are as follows:

\[\begin{align*}
cc & = \text{Calcite} - \text{Calcium carbonate (CaCO}_3\text{)} - \text{carbonated binder component}, \\
quz & = \text{Quartz} - \text{(SiO}_2\text{)} - \text{aggregate component}, \\
ch & = \text{Chloritoid} - \text{probably present as an aggregate component}, \\
mu & = \text{Muscovite mica} - \text{aggregate component}, \\
gy & = \text{Gypsum} - \text{Calcium sulphate hydrate (CaSO}_4\text{ 2H}_2\text{O)} - \text{present as a binder additive, contaminant or a sulphate reaction product.}
\end{align*}\]

In addition to the above there is possibly trace quantities of Gehlenite (calcium aluminium silicate) and Larnite (calcium silicate). The fully carbonated condition of the sample has made discrimination of the minor components present in the mortar difficult to resolve.

Method of Test

A sub-sample was extracted from the sample ‘as received’, dried to a constant weight and prepared for analysis by crushing the mortar and grinding the disaggregated material in an agate mortar and pestle to pass a 63μm sieve. The prepared powder sample was backpacked into proprietary sample holder for presentation in the X-ray Diffractometer.
Back-packing techniques were employed to ensure, as near as possible, the completely random orientation of the crystalline components required to give true peak intensities. The sample was analysed in a Philips X-ray Diffractometer fitted with a single crystal monochromator, set to run over the range 5° to 55° 2θ in steps of 0.1° 2θ at a rate of 1° 2θ/minute using CuKα radiation.

The digital output from the diffractometer was analysed by a computer program, which matched the peak positions against the JCPDS International Standard Mineral Data-base sub files using a search window of 0.1°.

Discussion

From the results of the XRD analysis it is inferred that the binder used in the mortar was either a natural cement or an eminently hydraulic lime. There were no phases detected that would suggest the presence of a dolomitic component in the mortar, such as a magnesium lime. However, the mortar is fully carbonated and shows evidence, in the hand specimen of weathering and, possibly, leaching of binder components.

The presence of gypsum is considered to be due to the reaction of the lime within the binder with atmospheric pollutants (acid rain – sulphuric acid) reaction to produce the calcium sulphate hydrate now present. It is not considered that gypsum would have been added as an additive to the mortar.

The aggregate in the mortar is dominated by quartz, with quartz forming in excess of 97% of the aggregate within the sample recovered from the mortar. A minor mica content was identified along with a trace of clay (chloritoid).

Quality Statement

We confirm that in the preparation of this report we have exercised reasonable skill and care.

W A Revie
For CMC Ltd.
CERTIFICATE OF ANALYSIS BY X-RAY DIFFRACTION

Project Reference : Ebenezer Baptist Church
Sample Location : Stair Tower on Eastern Elevation, below window
Sample Description : Bed joint mortar – circa 1922
Client Sample Ref. : Sample S4A
Date Received : 4th September 2003
Lab Ref : SR 725 S4A
Date of Test : 9th-11th September 2003
Method of Test : In-house procedures.

Results of Analysis

Results of the analysis are presented in the attached diffractograms; see appended Figure No. 1. The short-hand notation used in the diffractograms to identify the peak positions are as follows:

cc = Calcite - Calcium carbonate (CaCO₃) – carbonated binder component,
qz = Quartz – (SiO₂) - aggregate component,
ch = Chloritoid – probably present as an aggregate component,
mi = Microcline, feldspar aggregate component,
ar = Aragonite, another form of calcium carbonate, may be present from shell fragments or as a variation on the crystalline form of carbonated binder component,
po = Portlandite - Calcium hydroxide (Ca [OH]₂) – hydration component,

Method of Test

The sample ‘as received’ was dried to a constant weight quartered and prepared for analysis by crushing the mortar and grinding the disaggregated material in an agate mortar and pestle to pass a 63µm sieve. The prepared powder sample was backpacked into proprietary sample holder for presentation in the X-ray Diffractometer.

Back-packing techniques were employed to ensure, as near as possible, the completely random orientation of the crystalline components required to give true peak intensities. The sample was analysed in a Philips X-ray Diffractometer fitted with a single crystal monochromator, set to run over the range 5° to 55° 2θ in steps of 0.1° 2θ at a rate of 1° 2θ/minute using CuKα radiation.
The digital output from the diffractometer was analysed by a computer program, which matched the peak positions against the JCPDS International Standard Mineral Data-base sub files using a search window of 0.1°.

**Discussion**

From the results of the XRD analyses it is indicated that the binder used in the mortar was a cementitious type mortar with probably a lime content in the form of a cement/lime/sand mix. There were no silicate minerals, from the binder, detected that would assist in clarifying whether the binder was an early Portland cement or a natural cement, though on the balance of probability the former is considered the most likely.

The aggregates in the mortar are dominated by quartz. A minor feldspar (microcline) component with a trace of clay (chloritoid) was also identified along with a minor trace of aragonite, which may suggest the presence of shell fragment in the mortar. The aggregate components contain some low grade metamorphic components which may assist in identifying a suitable source for use in mortars for refurbishment works. However, the sand is predominantly quartz, containing more than 95%.

**Quality Statement**

We confirm that in the preparation of this report we have exercised reasonable skill and care.
CERTIFICATE OF ANALYSIS BY X-RAY DIFFRACTION

Project Reference : Ebenezer Baptist Church
Sample Location : Sample taken from the 1970’s addition
Sample Description : Bed joint mortar – circa 1970’s
Client Sample Ref. : Sample S5A
Date Received : 4th September 2003
Lab Ref : SR 725 S5A
Date of Test : 9th -11th September 2003
Method of Test : In-house procedures.

Results of Analysis

Results of the analysis are presented in the attached diffractograms; see appended Figure No. 1. The short-hand notation used in the diffractograms to identify the peak positions are as follows:

- **cc** = Calcite - Calcium carbonate (CaCO₃) – carbonated binder component,
- **qz** = Quartz – (SiO₂) - aggregate component,
- **mu** = Muscovite mica - aggregate component,
- **CAH10** = High Alumina Cement (HAC), initial meta-stable hydration phase of HAC
- **AH3** = Gibbsite – ultimate conversion product of (HAC,
- **C4AH11** = Calcium Aluminium Oxide Carbonate – carbonation reaction product of HAC.

Method of Test

The sample ‘as received’ was dried to a constant weight followed by crushing the mortar and grinding the disaggregated material in an agate mortar and pestle to pass a 63μm sieve. The binder fraction was further concentrated in preparation for analysis employing vibro-separation techniques. The prepared powder sample was backpacked into proprietary sample holder for presentation in the X-ray Diffractometer.

Back-packing techniques were employed to ensure, as near as possible, the completely random orientation of the crystalline components required to give true peak intensities. The sample was analysed in a Philips X-ray Diffractometer fitted with a single crystal monochromator, set to run over the range 5° to 55° 2θ in steps of 0.1° 2θ at a rate of 1° 2θ/minute using CuKα radiation.
The digital output from the diffractometer was analysed by a computer program, which matched the peak positions against the JCPDS International Standard Mineral Data-base sub files using a search window of 0.1°.

Discussion

On the basis of the analysis carried out it is indicated that the binder used in the mortar was a High Alumina Cement, such as "Cement Fondu" or some other form of Portland cement with a high aluminium content. The cement has undergone conversion, though not completely with a proportion of the converted material reacting with atmospheric carbon dioxide, in the presence of moisture to form the compounds detected in the analysis. The compounds detected are those normally associated with the aging of High Alumina Cements. No alkaline hydrolysis reaction products were identified in the sample examined.

The aggregates in the mortar are dominated by quartz. A muscovite mica content was confirmed along with trace quantities of chlorite. The aggregate was, however, mainly composed of quartz.

Quality Statement

We confirm that in the preparation of this report we have exercised reasonable skill and care

W A Revie
For CMC Ltd.
INTERNAL AND EXTERNAL
INFRARED SURVEY DRAWINGS

Design Development

February 16, 2004
Warm Anomalies

Cold Anomalies
PHASE II - RESTORATION OF EBENEZER BAPTIST CHURCH

MARTIN LUTHER KING JR. NATIONAL HISTORIC SITE

407 AUBURN AVENUE, ATLANTA, GEORGIA
6 DESIGN LOADS

6.1 Live Loads:
- BALCONY LIVE LOAD: 60 PSF
- SANCTUARY FLOOR LIVE LOAD: 60 PSF

6.2 Snow Loads:
- PG: 5.0 PSF
- PF: 6.0 PSF
- GS: 6.0 PSF

6.3 Drift Load: NOT CONSIDERED (PER SECTION 7.17 OF ASCE 7)

7 WIND LOAD:
- 75 MPH DISTRIBUTED IN ACCORDANCE WITH SECTIONS 1021 AND 1023 OF THE 1997 INTERNATIONAL BUILDING CODE
- WIND STABILIZATION PRESSURE = 0.3 PSF
- MAIN WIND FORCE RESISTING SYSTEM PRESSURE COEFFICIENT 0.0 AND RESULTING WIND LOADS

- WALKS (COMBINED WINDWARD AND LEeward): -0.13 (26.4 PSF)
- ROOF WINDWARD/LEeward: -0.08 (18.3 PSF) / -0.07 (14.2 PSF)

8 DESIGN CRITERIA (PER 1997 LBC SECTION 1430.2)
- SEISMIC ZONE: 0
- SEISMIC ZONE FACTOR: 0.0
- SEISMIC COEFFICIENT: 0.32
- SOIL PROFILE: TYPE D
- BASIC STRUCTURAL SYSTEM: SEISMIC RESISTING SYSTEM
- BEARING WALL / UNFORCED MASONRY SHEAR WALL

ANALYSIS PROCEDURE: EQUIVALENT STATIC PROCEDURE
NOTE: NO MODIFICATIONS ARE BEING MADE TO THE EXISTING LATERAL RESISTING SYSTEM

MASONRY:
B. LOAD BEARING MASONRY WALLS ARE DESIGNED IN ACCORDANCE WITH CHAPERS 1 AND 2 OF AD5320.
C. BRICK VENEER IS DESIGNED IN ACCORDANCE WITH CHAPTER 6 OF AD5320.

D. CONCRETE MASONRY UNITS SHALL BE LIGHT-WEIGHT HOLLOW LOAD BEARING UNITS ASTM C670 GRADE 4, TYPE 1, FM OF 1.500 PSI MAXIMUM COMPRESSION STRENGTHS TO 2000 PSI MVF MET CROSS-SECTIONAL AREA OF UNITS DETERMINED IN ACCORDANCE WITH ASTM C670.
E. LOAD BEARING UNITS SHALL COMPLY WITH ASTM C670, TYPE M OR S, STANDARD WORK BED JOINT THICKNESS SHALL BE 1/2" AND IN NO CASE SHALL EXCEED 3/4" THICKNESS.
F. PROVIDE ORTWR FOR REINFORCED MASONRY IN ACCORDANCE WITH ASTM C476 WITH MINIMUM COMPRESSIVE STRENGTH OF 2500 PSI UNLESS NOTED OTHERWISE. CSA GRAVEL CONCRETE WITH A MINIMUM COMPRESSIVE STRENGTH OF 3000 PSI MAY BE USED IN LIUE OF ORTWR WITH APPROVAL OF THE CONTRACTING OFFICER.

G. LAY MASONRY UNITS IN RUNNING BOND UNLESS NOTED OTHERWISE.

H. PROVIDE LADDER TYPE HORIZONTAL JOINT REINFORCEMENT COMPLIANT WITH ASTM A52, NUMBER 9 CAGE OF STEEL PLACED IN 16 INCHES CENTER UNLESS NOTED OTHERWISE.

I. PROVIDE PRE-FABRICATED LS AND TS AT CORNERS AND INTERSECTIONS.

J. WHERE WALLS ARE TO BE CRUDED MAXIMUM HEIGHT OF LIFT SHALL BE 5'-0" FOR OAIL WALLS 8'-0" OR WHEN THE MAXIMUM HEIGHT OF LIFT SHALL BE 5'-0" FOR NARROWER WALLS THE MAXIMUM HEIGHT OF 4'-0" WILL BE COVERED BY TABLE 7 OF AD5320-1 CONCRETE GROUT IN ACCORDANCE WITH PARAGRAPH 3.5.6 OF AD5320. WALLS GREATER THAN 5'-0" IN HEIGHT MUST HAVE INSPECTION HOLES AT THE BASE OF THE WALL.

K. LAY VERTICAL MASONRY WALL REINFORCING 48 DIAMETERS 1" FOR 4" BARS, 30" FOR 6" BARS.

L. JOY STANDING FOR BRICK VENEER WILL NOT EXCEED 1" VERTICALLY HORIZONTAL..
1ST LEVEL PROPOSED RESTORATION PLAN

1. Install self-leveling underlayment. Install resilient tiles 8" square VCT tiles.
2. Paint all walls after plaster restoration. See Finish Schedule.
3. New replacement window to match existing wood windows.
4. Install new wood door sec A503 for door schedule.
5. Reconfigure stair using wood construction.
6. Repair & refinish existing wood floor, trim, and stairs.
7. Install new drinking fountain.
8. Install new wood columns. See structural.
9. Not used.
10. Frame new cased opening in wall.
11. Install new handicap lift, new platform and stair to be wood construction with painted steel handrail.

APPENDICES 95
MATERIAL KEYNOTES

GENERAL NOTES

1. REMOVE AND REPLACE EXISTING DOORS WITH A REPLACEMENT DOOR. SEE WOODWORK SCHEDULE.
2. INSTALL NEW HANDICAP LIFT. DESIGN BASED ON CARAVONI PROPOSED DESIGN FOR ELEVATOR LOCATION.
3. INSTALL NEW WOOD STAIR AND RAMP HANDRAILS TO BE PAINTED WHITE.
4. INSTALL NEW RESILIENT TILE FLOORING.

5. CONSTRUCT WALL WITH 2X8 WOOD STUDS BLOCK FOR LIFT SUPPORT PER MANUFACTURER.

5. CONSTRUCT WALL WITH 2X8 WOOD STUDS BLOCK FOR LIFT SUPPORT PER MANUFACTURER.
<table>
<thead>
<tr>
<th>ROOM NO.</th>
<th>ROOM NAME</th>
<th>WALL MATERIAL</th>
<th>FLOOR MATERIAL</th>
<th>CEILING MATERIAL</th>
<th>WOODWORK MATERIAL</th>
<th>BASE MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>102</td>
<td>FELLOWSHIP HALL</td>
<td>P00</td>
<td>X X X X X RO1 &amp; RO2</td>
<td>C14</td>
<td>P00</td>
<td>B02</td>
</tr>
<tr>
<td>101</td>
<td>STAGE</td>
<td>P00</td>
<td>X X X X X EXISTING (W01)</td>
<td>P01</td>
<td>P01</td>
<td>B02</td>
</tr>
<tr>
<td>103</td>
<td>STORAGE</td>
<td>P00</td>
<td>X X X X X RO1, RO2</td>
<td>P06</td>
<td>C14</td>
<td>B02</td>
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<tr>
<td>104</td>
<td>MECHANICAL ROOM</td>
<td>--</td>
<td>-- X X X RO2</td>
<td>--</td>
<td>P13</td>
<td>P13</td>
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<td>105</td>
<td>MENS RESTROOM</td>
<td>P13</td>
<td>X X X X X T02, T03 &amp; T04</td>
<td>G01</td>
<td>P13</td>
<td>P13</td>
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<tr>
<td>106</td>
<td>WOMEN'S RESTROOM</td>
<td>P13</td>
<td>X X X X X T02, T03 &amp; T04</td>
<td>G01</td>
<td>P13</td>
<td>P13</td>
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<td>P13</td>
<td>X X X X EXISTING (W03)</td>
<td>P13</td>
<td>C14</td>
<td>B04</td>
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<tr>
<td>109</td>
<td>REAR ADDITION</td>
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<td>110</td>
<td>VESTIBULE</td>
<td>P07</td>
<td>X X X X X EXISTING (W05)</td>
<td>G01</td>
<td>P07</td>
<td>X01</td>
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**FINISH SCHEDULE NOTES**

- NO FINISHES
- REMOVE EXISTING WOOD BASE AND QUARTER ROUND, REPLACE WOOD OR CHANNELED MATERIALS WITH NEW WOOD BASE AND QUARTER ROUND TO MATCH ORIGINAL SEE 3 & 4 APRS FOR EXISTING BASE PROFILES.
- PAINT ALL EXPOSED CONCRETE, HVAC ELECTRONIC, & GELS TO MATCH PAINT COLOR OF ADJACENT CEILING OR WALL.
- PAINT FRONT OF STAGE P00.
- Paint all metal kickplates, handrails, and stair nosings.
- Treat at stage floor includes (4) sets of stairs.
- Screen to finish at the ceiling P07.
- Touch up any damage, existing paint to treatment at each new floor level.
- Paint at all new sides of balustrade at new metal railing and wood columns supporting balcony.
- Replace existing wood flooring, begin replacement with existing wood, continue.
- Replace woodwork; Lady work in place - new tile shall match the size, shape and quality as existing. Paint ceiling tile (see finish schedule).
- Install new metal stair nosings.
- Restore damaged portions of base.
- Replace floor tiles to be in a checkerboard pattern.
- New wood flooring at lower level and stair of kitchen, painted finish.
- Secure remaining to panel.
- Use intact circulation screens in place. No documented lead based paint or plaster.
- Replace broom closets to have total paint removal, no documented lead based paint or plaster.
- Install metal screen and wooden doors, sanded P00.
- Toilet partitions to be composite, #2530 Hunter Green.

**GENERAL NOTES - INTERIOR FINISHES**

1. See sheet A502 for materials and color legends.
2. See sheets A503, A504, A505 for plaster, drywall, and restoration.
3. Carpet to be installed at location shown on sheet A503.
4. See sheet A507 for new tile wainscot.

**PAINT GLOSS KEY**

- Eggshell
- Semi-Glaze
- Semi-Satin
- Satin
- Eggshell Glaze
- Matte
- Glaze

**GENERAL NOTE**

All historic fabric and materials (1868 and earlier) which are designated to remain shall be protected and preserved by the GCL. Do not remove any historic material from the church premises without authorization by the C.O.
### Finish Legend

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# Door Schedule

**Door Schedule Notes**

1. Adjust existing hardware to working condition.
2. See S-105 for local condition.
3. See sheet A-502 for information on this door.
4. These doors have been designed for easy opening.
5. No trim.
6. Grille has been added to door. Secure grille to door.

**Door Schedule Legend**

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<th>Status</th>
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**Jamb Types**

- Wood Jamb: 1/4" Wide
- Metal Jamb: 1/4" Wide
- Re-Engaged Hollow Metal: 1/4" Wide
- Hollow Metal: 1/4" Wide
- Modern Profile Wood Jamb: Open one side

**Threshold**

- T1: NA - Flush
- T2: Marble Threshold: See 2/A-515
- T3: Metal Threshold: See Hardware Set
- T4: Wood Jamb: See 2/A-515

**General Notes - Door Schedule**

A. See finish schedule on sheet A-502 for finish details.
B. All historic fabric and materials (1865 and earlier) which are designated to remain shall be protected and preserved by the S.D.C. not remove any historic material from the church premises without authorization by the C.O.

---

**Door Types**

- Wood
- Metal
- Gold Wood
- Hollow Core

---

**Access Door Schedule**

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<td>Vest 203, 204, 205</td>
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<td>26&quot; x 36&quot;</td>
<td>Office Tower</td>
<td>2 HR</td>
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<td>Accessor B6S (ceiling only)</td>
<td>24&quot; x 24&quot;</td>
<td>Organ Chamber</td>
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1. Contractor to verify field dimensions prior to purchase.
2. See S-105 for installation details of all.

---

**Appendix 130**

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**Note:** All historic fabric and materials (1865 and earlier) which are designated to remain shall be protected and preserved by the S.D.C. not remove any historic material from the church premises without authorization by the C.O.
ELEVATION AT BALCONY BALUSTRADE

PARTIAL INTERIOR ELEV. AT BALUSTRADE

SECTION AT BALCONY BALUSTRADE

SECTION AT STAIR TOWER HANDRAIL

PARTIAL INTERIOR ELEV. AT TOWER HANDRAIL

MATERIAL KEYNOTES

GENERAL NOTES

SHEET SPECIFIC NOTES

1. NEW PAINTED 1/2" O.D. STEEL HANDRAIL TO 2. SEE SHEET 1/98 FOR REQUIRED STRUCTURAL.
   BE ADJACENT TO EXISTING 18" RAIL / RAILING. MODIFICATIONS TO EXISTING BALUSTRADE.
2. SEAL BOARD GLAZING AT INTERIOR OF
   EXISTING BALUSTRADE TO BE CAREFULLY
   REMOVED FOR THE COMPLETION OF
   STRUCTURAL, REPAIRS CAP AND FACE PANELS
   AT BALUSTRADE TO REMAIN IN PLACE.
3. NEW PAINTED 1/2" O.D. STEEL GLAZORAL TO BE
   INSTALLED AT EXISTING 18" BALUSTRADE.
4. NEW GLAZORAL TO BE ANCHORED AT INTERIOR
   18" BALUSTRADE.
1. INSTALL 6" DIAMETER 16 GA. LEAD COATED COPPER GUTTERS WITH ADJUSTABLE LEAD COATED COPPER HOUSING SMOOTH SHAFT HARDWARE. SPACER HANGERS AT 2'-0" O.C. TO MATCH EXTERIOR EAVE - TRIM.
2. INSTALL ALL 16 GA. LEAD COATED COPPER DOWNSPOUTS 16" AT 6'-0" O.C. TO MATCH EXTERIOR EAVE - TRIM.
3. INSTALL SHANK EXTENSION AS NECESSARY.
4. INSTALL 4" DIAMETER 16 GA. LEAD COATED COPPER DOWNSPOUT FROM EXISTING TOWER SCUPPER. INSTALL NEW LEADER AT EXISTING SCUPPER.
**APPENDICES 161**

**GENERAL NOTES**

1. SEE ARCHITECTURAL DRAWINGS FOR ANY ELEVATIONS, DIMENSIONS OR SLOPES NOT SHOWN.
2. ALL DIMENSIONS TO BE FIELD VERIFIED PRIOR TO DEMOLITION AND REPAIRS. SEE STRUCTURAL GENERAL NOTE 2 E ON SHEET 15 FOR DEMOLITION INSTRUCTIONS.
3. Significant former post beetle damage this area.
4. Existing termites damaged joist.
5. Severe termite damaged joist.

**SHEET SPECIFIC NOTES**

7. Remove existing joists at beam bearing for review by structural engineer and design and framing of reinforcement as needed. See details 4 and 5 on sheet 17 for proposed preliminary details.
8. Add 3/4 blocking between joists 3 and 30 in.
10. See detail 1 on sheet 17 for framing reinforcing at antraphonal damage.
11. Reinforce damaged joists the same as typical joists. See 5/20.

**SCALING**

- Scale of Feet
- 4" = 1' 0"

**PLAN VIEW EXISTING BALCONY FRAMING**

**PLAN VIEW PROPOSED BALCONY FRAMING**
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### MATRICAL KEYNOTES

- **GENERAL NOTES:**
  - **A:** Existing fixtures, equipment and apparatus which are removed and not replaced in the new work shall be turned over to the contractor's disposal.
  - **A:** Existing light fixtures which have been removed and not accepted by the contractor, apparatus shall be the property of the contractor and shall be removed from the site.

- **SHEET SPECIFIC NOTES:**
  - **A:** Existing fixtures, equipment and apparatus which are removed and not replaced in the new work shall be turned over to the contractor's disposal.

### BLOWER ROOM NOTES:

1. Verify operation of the existing blower motor prior to礁吹送機吹送室工作
2. Replace existing 10x10 cfs from the blower room to the control area.
3. Determine exact location with the original blower motor connection.
4. Replace the existing panelboard disconnect switch for the blower motor.
5. The existing panelboard shall be abandoned in place.
GENERAL NOTES:
1. RELOCATE LIGHT FIXTURES UNDER LANDINGS, CENTER ON STAIRS.
2. REMOVE MISCELLANEOUS ELECTRICAL.

GENERAL NOTE
ALL HISTORIC FABRIC AND MATERIALS (1968 AND EARLIER), WHICH
ARE DESIGNATED TO REMAIN, SHALL BE PROTECTED AND PRESERVED
BY THE C.O. DO NOT REMOVE ANY HISTORIC MATERIAL FROM THE
CHURCH PREMISES WITHOUT AUTHORIZATION BY THE C.O.
TYPICAL SECTION OF RAMP

END ELEVATION
DO NOT ATTACH
ANY RAILS TO
BUILDING. RAMP
SHALL BE FREE
STANDING.

6'-4"

1/2" GAP

4'-0"

3'-0"

1'-0"

INSTALL PAINTED METAL HANDRAILS.
MATCH EXISTING EXIT STAIR
RAILING AT REAR OF SANCTUARY
IN COLOR AND QUALITY.

GENERAL NOTE
ALL HISTORIC FABRIC AND MATERIALS (1968 AND EARLIER), WHICH
ARE DESIGNATED TO REMAIN, SHALL BE PROTECTED AND PRESERVED
BY THE C.C. DO NOT REMOVE ANY HISTORIC MATERIAL FROM THE
CHURCH PREMISES WITHOUT AUTHORIZATION BY THE C.O.

FELLOWSHIP HALL LEVEL
STAIR AND ELEVATOR
PLAN

EBENEZER BAPTIST CHURCH
MLK JR. NATIONAL HISTORIC SITE
APPENDICES 186

SOUTH END OF COURTYARD

NOTE 1
NOTE 2
NOTE 3
NOTE 4
NOTE 5
NOTE 6
NOTE 7
NOTE 8
NOTE 9

DOWNSPOUT AT SOUTH END

VIEW NORTH IN COURTYARD

EXISTING DRAINAGE DITCH

EXISTING WINDOW & CURB CONDITION

EXISTING WINDOW & CURB CONDITION

EXISTING INVERT FOR DRAINAGE

DRAINAGE FLUME AT NORTHERN PLANTER

DRAINAGE FLUME AT NORTHERN PLANTER

NORTH SIDE OF PLANTER

EXISTING GAS METER

SHEET SPECIFIC NOTES
1. REMOVE EXISTING DRAINAGE FLUME.
2. REMOVE MASONRY ENCLOSURES AT WINDOWS.
3. PROTECT EXISTING GAS METER.
4. TIE IN EXISTING DOWNSPOUTS (TYPE.
5. REMOVE EXISTING CURB AND CONCRETE SEE PLAN ON A2 FOR LIMITS OF REMOVAL.
6. REMOVE EXISTING DRAINAGE STRUCTURE.
7. REMOVE PORTION OF BRICK PLANTER.
8. PROTECT EXISTING BRICK PLANTER.
9. PROTECT EXISTING STUCCO.
10. REMOVE PROJECTING BRICKS AROUND EXISTING DRAINAGE PIPE.

SEE SHEET A2 FOR PHOTOGRAPH LOCATIONS

EXISTING CONDITION
PHOTOGRAPHS
EBENEZER BAPTIST CHURCH
M.L.K. JR. NATIONAL HISTORIC SITE
APPENDICES 191

PROPOSED SUBDRAINAGE SYSTEMS

SCALE 1

SHEET SPECIFIC NOTES
1. PLACE EXPANSION JOINT AT PLANTER BOX. SEE ARCHITECTURAL PLANS FOR DETAILS.
2. MATCH GRADES FOR NEW CONCRETE JOINT WITH GRADES IN THE EXISTING CONCRETE COURTYARD.
3. INSTALL NEW CONCRETE PLANTER SECTION ON COMPACTED SUBGRADE.
4. INSTALL PROTECTING PLANTER BOX (4"") TO UPPER TRENCH DRAIN SYSTEM USING DOWNSPOUT EXTENSION BOOTS (4""). SEE DETAILS SHEET C2.
5. INSTALL TIES TO EXISTING DOWNSPOUTS TO UPPER TRENCH DRAIN SYSTEM USING DOWNSPOUT EXTENSION BOOTS (4""). SEE DETAILS SHEET C2.
6. INSTALL CONCRETE PAVING ABOVE UPPER TRENCH DRAIN (Type 1). INSTALL CONCRETE DRAINAGE SYSTEM (Type 5). INSTALL GRASS WALL FOR PLANTER BOX WALL.

PLACE 12"X12" YARD INLET WITH 4" E.A. EAST IRON PIPE (2.5% SLOPE)
MIXING WITH DUMP BASH TO ALLOW AREA DRAIN IN REAL OF COURTYARD.

ZOELLER M-98 DUAL-SERIES PUMP (OR APPROVED EQUAL)
SYSTEM OR DUMP WITH GRIT SEPARATOR
SEPARATE DRAIN SYSTEM
DUMP DIMENSIONS: 3.2' x 3.2' x 3.0' DEEP
INSTALL GRASS WALL FOR PLANTER BOX WALL.

DRAINAGE STRUCTURES AROUND STEPS AND PLANTER BOX SCALE 1/2

DRAINAGE SYSTEMS AT STEPS SCALE 1/2

SCALE OF FEET

PROPOSED SUBDRAINAGE SYSTEM PLAN
BRENZER BAPTIST CHURCH
MC-UR NATIONAL HISTORIC SITE
APPENDICES 196

GENERAL NOTES
ALL HISTORIC FABRIC AND MATERIALS
(1968 AND EARLIER), WHICH ARE
DESIGNATED TO REMAIN, SHALL BE
PROTECTED AND PRESERVED BY THE
C.O. DO NOT REMOVE ANY HISTORIC
MATERIAL FROM THE CHURCH PREMISES
WITHOUT AUTHORIZATION BY THE C.O.

SHEET SPECIFIC NOTES
1. REMOVE DOOR, DISCONNECT CLOSER FROM FRAME, TURN DOOR UPSTAGE DOWN, REINSTALL USING FULL SURFACE CONTINUOUS HINGE ON RIGHT SIDE OF FRAME.
   INSTALL ELECTRIC SERVICE ON LEFT HAND SIDE, REINSTALL CLOSER INSTALL HINGE/FILLER PLATES TO UNION AND FRAME TO HINGE.
   EXISTING HINGE/COORDINATE INSTALLATION OF ELECTRIC SERVICE, POWER AND SUPPLY.
   AND REMOVE RELEASE BUTTONS TO SWING OUT AS SHOWN.
2. INSTALL CP100 LAM-CL/ACCESS SENTRY DOOR ENTRY SYSTEM OR EQUIVALENT AT 42" A.F.F. OF RAMP. COORDINATE DOOR RELEASE SYSTEM WITH NPS.
3. INSTALL PAINTED METAL HARDWARE.
4. PLACE NEW HANDCUT RAMP WITH CONCRETE MAX SLOPE SHALL BE 1:12. PROVIDE SEPARATION SHEET BETWEEN CONCRETE AND SIDEWALK.
5. DO NOT ATTACH ANY TAILS TO BUILDING. RAMP SHALL BE FREE STANDING.
6. NEW CHANGES SEE SPECIFICATIONS SECTION 08700
ALL HISTORIC FABRIC AND MATERIALS (FLOOR AND CEILING) WHICH ARE DESIGNATED TO REMAIN SHALL BE PROTECTED AND PRESERVED BY THE C.O. DO NOT REMOVE ANY HISTORIC MATERIAL FROM THE CHURCH PREMISES WITHOUT AUTHORIZATION BY THE C.O.


2. FASTEN ALL RUSTIC HOLLOW METAL DOOR AND METAL FRAME WITH LST PER SPECIFICATION SECTION SRHD.

3. USE OLD WOOD FRAME P.1 AND WOOD FRAME TO MATCH SURROUNDING ROOM.

4. FASTEN EXISTING RUSTIC HOLLOW WOOD FRAME P.1 AND WOOD FRAME TO MATCH SURROUNDING ROOM.

5. FASTEN EXISTING AND NEW STRUCTURE WITH INTERMITTENT PAINT PER SECTION 09940.

6. FASTEN EXISTING AND NEW STRUCTURE WITH INTERMITTENT PAINT PER SECTION 09940.
APPENDICES 203

SECTION
NEW STRINGER CONNECTION AT EXISTING MASONRY WALL

SEE 2/53 FOR NEW STRINGER CONNECTION AT EXISTING EDGE CHANNEL.

NOTE 1
STAIR DESIGNER/MANUFACTURER TO PROVIDE 2" SQUARE TUBES AS VERTICALS (32" TALL) AT EACH END OF STRINGER AND AT 4'-0" MAX BETWEEN FOR GUARDRAIL/WALL SUPPORT.

SECTION
NEW STRINGER CONNECTION AT EXISTING MASONRY WALL

STAIR STRINGER BY OTHERS
STAIR TO BE DESIGNED FOR 100 PSF LIVE LOAD (MINIMUM)

SECTION
NEW STRINGER CONNECTION AT EXISTING MASONRY WALL

ADDITIONAL FRAME BETWEEN EXISTING BEAMS MAY BE REQUIRED – SEE NOTE 2

NOTES:
1. STAIR DESIGNER/MANUFACTURER TO PROVIDE 2" SQUARE TUBES AS VERTICALS (32" TALL) AT EACH END OF STRINGER AND AT 4'-0" MAX BETWEEN FOR GUARDRAIL/WALL SUPPORT.
2. REINFORCING OF EXISTING FLOOR MAY BE REQUIRED UNDER NEW STRINGERS. CONTACT STRUCTURAL ENGINEER FOR DETAIL IF REQUIRED.

SECTION
NEW STRINGER CONNECTION AT EXISTING MASONRY WALL

LIFT ALTERATIONS PLANS & DETAILS
EBENEZER BAPTIST CHURCH
MLK JR NATIONAL HISTORIC SITE

SCALE: 1" = 4' 0"
1. GENERAL
A. All construction shall conform to the 2000 International Building Code with Georgia Amendments. Reference to other standards specifications or codes shall be made from the latest standard or code adopted and published.
B. These notes shall apply except where indicated otherwise by drawings or specifications. A detail shown for the condition shall apply for all use of similar conditions even though not specifically indicated on the drawings.
C. The contractor is solely responsible for the design, accuracy and safety of temporary supports and the use of all supports, bracing, ties, braces, stabilizers and procedures of construction.
D. Manufactured rites shall not be used where masonry construction is specified. Rites for supporting false work shall be provided in strict conformance with manufacturers specifications and installed in conformance with all manufacturers requirements.

2. DESIGN AND STRUCTURAL STABILIZATION
A. The nature of structural stabilization is primarily evolutionary, The exact condition and capacity of each structural element cannot be known prior to the commencement of work. As a result, it is imperative to report any discrepancies between the contract documents and actual field conditions, as well as any elements of questionable structural integrity immediately to the contracting officer for review.
B. No attempt has been made to quote each specific structural element that may be removed, reinforced, or replaced. It is the responsibility of the contractor to remove the condition of individual elements, particularly floor joists, ceiling joists, beam, and structural deck elements, to determine which price can be salvaged, which must be replaced, and which elements are questionable. The contractor should consult with the contracting officer to determine the appropriate procedure for handling elements in questionable condition.
C. Certain critical conditions of the existing structure along with necessary repairs and reinforcement cannot be confirmed until the construction phase designs and corresponding permit can be finalized or a final report for elimination of the existing structure.
D. All structural components are to be removed of existing functional and components, whether to be salvaged, reinforced or replaced. It shall be the responsibility of the whole building and its components.

3. EXISTING CONDITIONS
A. Removal of existing structure requires thorough coordination of contract drawings with existing conditions. The contractor must verify all relevant existing conditions, dimensions, and details prior to beginning construction. Any deviations from these conditions or dimensions shown on the drawings must be reported to the contracting officer for review of the design and possible revision of the contract drawings.
B. Verify all existing conditions, dimensions, and elevations before starting work. Notify contracting officer in writing of any discrepancy.

4. STRUCTURAL SUPERVISION
A. All asbestos, not indicated on plans and details shall be in accordance with 220A-4.1 of the 2000 International Building Code.

5. FOUNDATION
A. Foundation design is based on a prescriptive, not allowable soil bearing capacity of 2000 psi.
B. Bearing capacity shall be verified at the time of excavation. If the condition of the soil indicates a safe bearing capacity of less than 2000 psi, the contractor shall notify the office of the foundation design. The contractor shall be notified if necessary.
C. Wall footing shall be sized proportionally with adjacent footings at the same elevations.
D. All footings shall be on original undisturbed soil. Where possible, all fill shall be compacted to 95% standard prospective. Minimum uncontacted lift is 4".

6. DESIGN LOADS
A. Use loads 300 psi.
B. No modifications are being made to the existing lateral system.

7. TRUSSWORK
A. Concrete masonry design and construction shall conform to ACI 500-02 and ACI 526.1-94. All loads, bracing and support shall be in accordance with the contract drawings.
B. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
C. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
D. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
E. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
F. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
G. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
H. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
I. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
J. Concrete masonry units shall be of the size listed in ACI 500-02. All sizes shall be in accordance with the contract drawings.
ELECTRICAL LEGEND

 Abbreviations:

 AK/AF/AT Above finished floor/attic/finished floor
 C Can
 CB Circuit breaker
 CT Circuit
 CLS Ceiling
 COL Column
 F Fixed
 MF Movable

 Wires and Cables:
 2 wires #14 and in each of 6 circuits, excluding lighting conductors.
 Not: Number of wires (not cables) + number of wires (not cables) = number of wires + circuits.
 Not: A cross-hatched indicates #12 and excluding dumbbell conductor to cables (not cables).

 JOINT BOXES, JUNCTION BOXES

 Junction box, wall-mounted, mount 18" off, unless otherwise noted.
 S Single-pole, single-throw mount 48" off, unless otherwise noted.
 W Sash window

 SCONCES

 "CE0/2/10/00" Designated switch, set for electrical enclosure type, if other than shell.
 Volume 44, 24", unless otherwise noted.

 GENERAL NOTES:

 1. Shift one, existing luminaire on the landing between entry level and sanctuary level, east of its current location to coordinate with new light fixture.
 2. Relocate one existing receptacle connected to circuit FT-12 located on the stair landing between entry level and sanctuary levels, to same location on new stairs.

 Material Key:

 - General Notes

 Sheet Specific Notes:

 Electrical Legend, Abbreviations, Notes, and Details.
 Engineer: Baptist Church
 1604 N. National Historic Site

規模 0:05

SCALE:

1. Coordinate door drains using access to control schedule.
2. Coordinate with division 8 for safety lighting using electric.
3. Location of door sash is in an accessible location, where the door is adjacent to the door to the door is accessible.
4. Location of breakaway box in an accessible location, where the door is adjacent to the door to the door is accessible.