ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

May 31, 2009

MORAVIAN THEOLOGICAL SEMINARY

60 West Locust Street  Bethlehem, Pennsylvania 18018
Acknowledgements

This document is the result of a collaboration of the administration, faculty, staff, and students of Moravian Theological Seminary and all efforts during this audit are greatly appreciated. A special thank you to the following:

Moravian Theological Seminary
Moravian Theological Building Committee
With special thanks to:
Frank Crouch, Dean of Moravian Theological Seminary
Kimberly Sherr, Moravian College, Facilities, Project Manager

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The Moravian Theological Seminary Academic Program/Space Utilization & Bahnson Center Facility Audit was restricted to one specific program as it exists on the Moravian College campus.

The draft report dated 5.18.09 was provided to Ayers Saint Gross Architects to provide information relating to the ongoing Campus Land Use Master Plan currently being completed by ASG. MKSD met with ASG and the Moravian College Project Manager to discuss issues at the center relevant to both studies and to gain understanding of the factors which influence each study.

Both studies acknowledge the importance of the Seminary to the existing campus layout and its effect on the future growth of Moravian College. The topics discussed included way finding on campus relating to the existing Seminary location, “front door” issues of the Seminary as it relates to the surrounding college campus, appropriate building signage and general discussions of the conceptual Bahnson Center expansion opportunities.

Conclusions were drawn substantiating information gathered for both studies compliment each study respectively, and recommendations to both The Moravian Theological Seminary and Moravian campus could be implemented harmoniously in the future.

Information Gathering

Recommendations are based on both visual data collected by the Project Team for the Facility Audit and operational data provided by The Moravian Theological Seminary. The building data was compiled without the use of destructive testing, thus existing underlying conditions are not represented that could alter any future projects related to the program facilities.

All recommendations for the Academic Program Audit are based on data provided by the Seminary and are only as good as the specific information provided to the Project Team. Incomplete information or information not provided to the reviewers could impact future decisions relating to future program changes.
Sustainability

Sustainable design respects nature and the community. In an attempt to meet the goals of this project and the present needs of the Seminary, without adding to the environmental and economic burden of future generations, the committee set out to minimize the environmental impact of this study in the following ways:

Reduce Paper Consumption by
Posting relevant information on a community website maintained by Moravian College
Provide project information, meeting minutes, schedules and report updates on compact storage media for distribution.
Scan and provide consultants and Moravian College with "compact" copies of archived data and documents which can easily be reproduced.
Track and report "reimbursable" printing avoided by the use of electronic media and email.

Reduce Gas Consumption by
Carpooling & Micro-scheduling multiple meetings in succession to limit the number of car trips to the Seminary.

Review and Incorporate historical utility costs during the building audit reviewing mechanical, electrical and plumbing impacts on the options as presented in the study.

As Architects we strive to design well thought-out spaces to limit unnecessary construction, encourage the re-use of the existing built environment where appropriate, the use of recycled /green materials and environmentally conscious strategies during renovation and expansion projects.

During the completion of this project the net effect of the reduced paper consumption equates to a savings of 6,428 sheets of paper. Based on EPA calculations the Eco-Savings is comparable to 0.37 Trees; 157.3 gal of Wastewater; 17.43 lbs of Solid Waste; 34.25 lbs of CO2; and 262K BTUs of Energy.
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Moravian Theological Seminary  
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT  

MKSD architects
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Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
Chapter 1

SCOPE AND SERVICES

Scope of Services
On January 31, 2009 MKSD architects contracted with the Moravian Theological Seminary to perform a dual-review of the Moravian Theological Seminary academic space utilization and facility audit. The team of MKSD architects, HB Engineers, Inc. and Cowan Associates Inc. reviewed architectural, mechanical, electric, plumbing site and structural issues respectively. The reviews consisted of an Academic Program/Space Utilization and the Bahnson Center Facility Building Audit.

This report contains the results of the Academic Program/Space Utilization and the Bahnson Center Facility Building Audit and after understanding of the goals and obstacles inherent in the programming and physical buildings, MKSD architects includes in this report proposed enhancements, reconfigurations, utilization alternatives and reconstruction/renovation options which could be implemented in order to achieve the Seminary Strategic Initiatives as set forth by the Seminary.

The Center currently consists of two (2) separate buildings; the Bahnson Building and the Lenox House, both located at 60 Locust Street, Bethlehem Pennsylvania, perimeter to Moravian College. Each of these studies required MKSD architects and the project team to collaborate with the Seminary Administration, Faculty, Students and Moravian College, to gain an understanding of the daily operations of the Seminary. On February 9, 2009 MKSD provided an overview of the Project initiatives to the Committee which consisted of Frank Crouch, Deborah Appler, Glenn Asquith, Verdana Quinn, John Williams, Jeffrey Lawson, Mark Reed, Judith Sheriff and Kimberly Sherr. A schedule of tasks was reviewed with the committee, including “user” meetings to be scheduled with all stakeholders of the Seminary. All meetings were documented and posted for the committee using the AMOS system.
SCOPE AND SERVICES

Methodology and Assumptions

Academic Program/Space Utilization Course and enrollment data from 2005 through 2010 was obtained from the Registrar of the Moravian Theological Seminary. Only courses with an activity type of lecture or recitation were included in the study. The Seminary Strategic Initiatives and Projects approved by the Trustees in April 2008 include the implementation of a credit-bearing certificate in formative spirituality; sustain steady enrollment growth toward a target of 75 FTE in 2015; maintain at least 40% full-time students; enroll and retain a minimum of 20% of the student body from diverse racial-ethnic backgrounds. *

Bahnson Center Facility Building Audit

The facilities data for the Bahnson Building and the Lenox House was obtained from varied sources including the Moravian Seminary Administration, the Moravian College Facilities Project Manager, the Moravian College Facilities and CIT departments. The MKSD team reviewed the original construction documents, additions documentation, maintenance records and utility archives as well as performing a visual and hands-on facility conditions audit of the interior and exterior of the Bahnson Building, to gain the knowledge to establish a baseline of information necessary to evaluate the future possibilities for expansion and renovation of the facility. Although the study is based on the needs identified at this specific time, it is designed to be a dynamic tool that will be reviewed, refined and updated over time.

*All recommendations for the Academic Program Audit are based on data provided by the Seminary and are only as good as the specific information provided to the Project Team. Incomplete information or information not provided to the reviewers could impact future decisions relating to future program changes.
Chapter 2

PROGRAM SUMMARY AND CLASSROOM UTILIZATION

Goals

• Determine the current classroom utilization rate.
• Improve space utilization of the Seminary.
• Utilize this data to assist in future planning and investment decisions.

PROGRAM SUMMARY – See Appendix

DATA TABLES – See Appendix

CLASSROOM UTILIZATION – Fall, Spring, January, and Summer Semesters
PROGRAM SUMMARY AND CLASSROOM UTILIZATION

PROGRAM SUMMARY
Course and enrollment data from 2005 through 2010 was obtained from the Registrar of the Moravian Theological Seminary. Only courses with an activity type of lecture or recitation were included in the study. The Seminary Strategic Initiatives and Projects approved by the Trustees in April 2008 include the implementation of a credit-bearing certificate in formative spirituality; sustain steady growth toward a target of 75 FTE in 2015; maintain at least 40% full-time students; enroll and retain a minimum of 20% of the student body from diverse racial-ethnic backgrounds.

All recommendations for the Academic Program are based on data provided by the Seminary and are only as good as the specific information provided to the Project Team. Incomplete information or information not provided to the reviewers could impact future decisions relating to future program changes.

Academic Disciplines/Majors/Courses
The Seminary program offerings, the personnel listings (faculty and administration), and the student enrollment have been summarized to allow for an in depth review which is essential in understanding the workings of the Seminary.

The Moravian Theological Seminary offers five (5) academic majors:
• Masters of Divinity
• Masters of Arts in Pastoral Counseling
• Masters of Arts in Theological Studies
• Masters in Divinity – Masters in Social Work
• Masters in Pastoral Care – Masters in Social Work (FT and PT)
• Certificate in Theological Studies may also be obtained through full-time or part time studies.

Projected majors include Non Degree and a Certificate of Formative Spirituality programs.

The projected enrollment is forecasted to increase and thus the number of projected graduates will ultimately also increase. See Attachment 2-A. However, the number of faculty remains current with only a forecasted increase of adjunct faculty. See Attachment 2-B.

Current Administration and Faculty
The current administration and faculty and their office locations have been summarized in Attachment 2-C & D to determine the existing personnel of the Seminary. There is a total of 25 administrative positions and a total of 26 faculty positions, which includes six (6) Emeritus faculty.

Course and Classroom Parameters
• Calculations based on a Monday through Friday week; Monday through Saturday course information is also included in the report.
• Classes scheduled on the half hour are included in the full hour for calculations.
• Inconsistencies were present in the information from MTS*:
  o Different courses are scheduled for the same classroom.
  o Semester course offerings were revised.
  o Course classroom location or time information was not available.
  o Information incomplete for upcoming semesters.

* Based on these inconsistencies anomalies may be present in the calculations.
Course Schedule tables illustrate the courses taught in each of the semesters at the weekly times they were scheduled, the number of students enrolled in the section, the location of the class, the faculty teaching the course, as well as the number of course credits. The fall and spring semesters have courses scheduled during daytime and evening hours consistently throughout the week. January and summer semesters have fewer course offerings with the majority of the summer classes in the evening. See Attachment 2-E.

Weekly Scheduled Course Hours table and graphs illustrate hours of scheduled courses for both a Monday to Friday week and a Monday to Saturday week for both daytime and evening hours. The week scheduled course hours from greatest to least is fall, spring, January, and least is the summer semester. The summer schedule is the only semester where the evening courses out number the daytime courses. The graphs also display that the M-F week is similar to the M-Saturday week and the utilization of this information is sufficient for this report. In general the Saturday courses are typically offered before noon and may not be held in the five classrooms noted in this report. See Attachment 2-H.

Classroom Use by Day and Hour tables and graphs illustrate the classroom use % at a particular time of day. The Bahnson Center classrooms that are included in this study are Herrnhut, Kunwald, Wittenberg, Aldersgate, and the Distance Learning Center (DLC). These five classrooms account for a total 100% of the educational time. In addition, the total daytime and evening hours are calculated for each day of the week as well as a weekly average for the semester. The graphs show the maximum classroom use % for each day of the week and for each hour of the day. The maximum classroom use % is 60% which translates into only three out of the five classrooms utilized. See Attachment 2-F.

Course Cancellation Summary table notes the cancelled courses for each semester but have not been included in the calculations. The maximum number of courses is critical in reviewing whether there are sufficient spaces to accommodate the courses being offered by the Seminary. The semester in which the greatest number of courses are being cancelled are during the Spring semesters. See Attachment 2-G.

Classroom Use in Hours and Student Occupancy tables summarizes the (average) hours that the classroom is in use (contact hours) for each classroom. The average hours and the student occupancy figures over approximately five years for each semester are then transposed into the Classroom Utilization table. The average weekly room hours in use and the average seating capacity numbers for each room in a particular semester. January, Spring and the Summer semesters are still pending. See Attachment 2-I.

Space Capacity & Occupancy table summarizes the Bahnson building classrooms’ square footage, and capacity of each space. Capacity or number of occupants for each classroom is noted as the design capacity, code capacity, and the MTS scheduling capacity. There is an inconsistency between the design/code capacity and the MTS scheduling capacity. The DLC is the only room where the numbers are consistent due to fixed seating. See Attachment 2-J.
CLASSROOM UTILIZATION

High classroom utilization and faculty productivity are not ends in themselves. The underlying goal is to make sure resources are used in the most effective way possible to provide a quality, educational experience to the students.

Scheduling inefficiency factors:
• under utilization of particular rooms
• lack of classrooms of a particular size
• overbooking small courses into large classrooms
• particular technology available in classrooms

Although the Seminary does not have target enrollment utilization goal, it is understood by the committee optimal utilization for the scheduled classes are expected. These expectations are used to calculate the overall utilizations and to understand the correlation between actual courses taught and to make certain that the available classrooms and learning spaces are not being over or under filled.

The Classroom Utilization chart summarizes the room use, the student seating occupancy/station utilization, and the square foot per student/station for each of the four (4) semesters. The chart also categorizes this information for each of the available classrooms:

• Wittenberg
• Aldersgate
• Kunwald
• Distance Learning Center (DLC)
• Herrnhut.

Weekly Room Use  =  Hours that classroom is in use (contact hours)

(Room Utilization) %  =  Hours that classroom is available

• Classroom availability is calculated on a weekly basis that includes Monday through Friday.
• Weekly room hours are calculated for both daytime and evening hours.
• Daytime refers to the time period of 9am–4:59pm (8 hours) per week.
• Evening refers to the time period of 5pm–9pm (4 hours) per week.

Seating Occupancy (Station Utilization) %  =  \( \frac{\text{Seating Occupancy}}{\text{Seating Capacity}} \)

Square Feet per Seat (Station)  =  \( \frac{\text{Actual SF per Seat}}{\text{Design SF per Seat}} \)

Refer to Classroom Utilization charts/graphs for each of the four (4) semesters on the following pages.
CLASSROOM UTILIZATION – FALL

Room Use, Seating Occupancy, and SF per Student/Seat

<table>
<thead>
<tr>
<th>Room Capacity</th>
<th>Classroom</th>
<th>Weekly Room Hours Available</th>
<th>Average Weekly Room Hours in Use</th>
<th>% of Weekly Room Hours in Use</th>
<th>Seating Capacity</th>
<th>Average Seating Occupancy</th>
<th>% Seating Occupancy</th>
<th>Area in SF</th>
<th>Design SF per Seat</th>
<th>Actual SF per Seat</th>
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<tr>
<td>&lt;5</td>
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<td>41</td>
<td>141 141</td>
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</tbody>
</table>

Fall Semester - % of Weekly Room Hours In Use

Fall Semester - % Seating Occupancy

Fall Semester - SF per Seat

Targeted Room Utilization

Targeted Seating Occupancy

Average
### Classroom Utilization – Spring

#### Room Use, Seating Occupancy, and SF per Student/Seat

<table>
<thead>
<tr>
<th>Room Capacity</th>
<th>Classroom</th>
<th>Weekly Room Hours Available</th>
<th>Average Weekly Room Hours in Use</th>
<th>% of Weekly Room Hours Available</th>
<th>Seating Capacity</th>
<th>Average Seating Occupancy</th>
<th>% Seating Occupancy</th>
<th>Area in SF</th>
<th>Design SF per Seat</th>
<th>Actual SF per Seat</th>
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<td>25-29</td>
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<td><strong>TOTALS</strong></td>
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</table>

Daytime: refers to the time period of 9am - 4:59pm  
Evening: refers to the time period of 5pm - 9pm
### CLASSROOM UTILIZATION – JANUARY

Room Use, Seating Occupancy, and SF per Student/Seat

<table>
<thead>
<tr>
<th>January Semester</th>
<th>Bahnsen Building - Department Scheduled</th>
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<tbody>
<tr>
<td>Room Capacity</td>
<td>Classroom</td>
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<td></td>
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<td>&lt;5</td>
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<td>11-14</td>
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<td><strong>TOTALS</strong></td>
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</tbody>
</table>

Daytime: refers to the time period of 9am - 4:59pm
Evening: refers to the time period of 5pm - 9pm

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**Targeted Seating Occupancy**

- **Wittenberg**: 60%
- **Aldersgate**: 60%
- **Kunwald**: 60%
- **DLC**: 60%
- **Herrnhut**: 60%

**Targeted Room Utilization**

- **Wittenberg**: 100%
- **Aldersgate**: 100%
- **Kunwald**: 100%
- **DLC**: 100%
- **Herrnhut**: 100%

**Average SF per Seat**

- **Wittenberg**: 14.8
- **Aldersgate**: 17.0
- **Kunwald**: 14.4
- **DLC**: 107.8
- **Herrnhut**: 130.7

---

Moravian Theological Seminary

ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
CLASSROOM UTILIZATION – SUMMER

<table>
<thead>
<tr>
<th>Summer Semester</th>
<th>Bahnsen Building - Department Scheduled</th>
</tr>
</thead>
<tbody>
<tr>
<td>Room Capacity</td>
<td>Classroom</td>
</tr>
<tr>
<td></td>
<td>Weekly Room Hours Available Day</td>
</tr>
<tr>
<td>&lt;5</td>
<td>None</td>
</tr>
<tr>
<td>5-10</td>
<td>None</td>
</tr>
<tr>
<td>11-14</td>
<td>Wittenberg</td>
</tr>
<tr>
<td>15-19</td>
<td>None</td>
</tr>
<tr>
<td>20-24</td>
<td>Aldersgate</td>
</tr>
<tr>
<td>25-29</td>
<td>Kunwald</td>
</tr>
<tr>
<td>30-34</td>
<td>None</td>
</tr>
<tr>
<td>35-39</td>
<td>DLC</td>
</tr>
<tr>
<td>40-44</td>
<td>Herrnhut</td>
</tr>
<tr>
<td>45-49</td>
<td>None</td>
</tr>
<tr>
<td>50-54</td>
<td>None</td>
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<tr>
<td>55-59</td>
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<td>200</td>
</tr>
<tr>
<td></td>
<td>100</td>
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<td></td>
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<td></td>
<td>12</td>
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<tr>
<td></td>
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<td></td>
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<td></td>
<td>8%</td>
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<td>12%</td>
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<td>6%</td>
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<tr>
<td></td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>118</td>
</tr>
</tbody>
</table>

Daytime: refers to the time period of 9am - 4:59pm
Evening: refers to the time period of 5pm - 9pm
DATA REVIEW

• Moravian Theological Seminary course offerings do not resemble the rest of the Moravian College course schedule. For this exercise, Classroom Utilization has been separated into four semesters – FALL, JANUARY, SPRING, SUMMER as they are educationally distinctive and cannot be categorized as a typical college semester. However, Fall and Spring semester data will only be highlighted in this review.

• Utilization percentages shown are for scheduled classes as noted on the program summary. The actual utilization percentage may be lower depending on the number of classes cancelled for the semester. The maximum numbers/percentages are critical when evaluating the need for expansion of the facility to accommodate targeted student enrollment.

• A total of five (5) classrooms have been included in the following study with the first three being the most popular - Herrnhut, Kunwald, DLC (Distance Learning Center), Wittenberg, and Aldersgate. The Saal has not been included in this study as it is not a typical classroom and is classified as a multi-purpose space used by both the Seminary and the College.

• Typical course scheduling times:
  Daytime - 9am –12pm; noon break; 1pm – 4:59 pm
  Evening - 5pm – 6pm; dinner break; 6pm – 9pm

• Weekly Room Use % (Room utilization):
  o Average Fall and Spring daytime total room utilization is 25%
  o Average Fall and Spring evening total room utilization is 21.5%
  o Kunwald has the greatest average daytime room utilization of 54%
  o The DLC and Herrnhut both have an average evening room utilization of 35%
  o Wittenberg has the lowest % for both daytime and evening utilization.
  o Majority of courses are scheduled in Kunwald, Herrnhut, and the DLC.
  o Wittenberg and Aldersgate have the fewest courses scheduled in these two classrooms.

• Seating Occupancy % (Station Utilization):
  o Average Fall and Spring daytime total is 28.5%.
  o Average Fall and Spring evening total is 31%.
  o Aldersgate and DLC have an average daytime total of 33%
  o Kunwald and Herrnhut have an average daytime total of 26.5%
  o The DLC and Herrnhut have an average evening total of 39.5%
  o Wittenberg has the lowest evening total of 0%

• SF per Seat/Station:
  o Average Design SF per Seat is 18.
  o Average Actual SF per Seat is 36.5.
  o All five classrooms exceed the Design SF per Seat by two to three times.
STATEMENT
For the purpose of calculating student use of the Bahnson Center each student will be equated as a full time student. The term used for this conversion is “full-time equivalent” or FTE.

DEFINITION OF TERMS
• **Contact Hours:** A student contact hour is one hour of student attendance in a class for which the student is in membership. Sixty minutes shall constitute one hour.

• **Reporting Periods:** There are a total of four reporting periods for Moravian Theological Seminary: spring semester, summer term, fall semester, and January term. However, for this evaluation the FTE is calculated for the spring and fall semesters only.
  - Fall 2008: Aug. 24- Dec. 19 = 18 weeks
  - Spring 2009: Jan. 19- May 9 = 16 weeks

• **Student Membership/Programs:** The Moravian Theological Seminary offers five programs of study. (see pg. 2-2) However, this FTE study shall only review the Master of Divinity program:
  - 91 Total Credits (3 year full-time)
  - 15 Contact Hours

• **Reporting Periods Equated to Student Contact Hours:** The hours and weeks listed below are based on a ‘typical’ full-time student.
  - Fall 2008: 15 contact hours x 18 weeks = 270 hours
  - Spring 2009: 15 contact hours x 16 weeks = 240 hours

• **FTE Formula Base (Divisor):** This study calculated the FTE per semester. The total student contact hours serves as the divisor for each:
  - Fall Semesters: 270
  - Spring Semester: 240

EXAMPLE CALCULATION
The example calculation will use a 3 credit course from the Fall 2008 Semester with 26 registered students. See Attachment 2-E
  - SEPF 723 Spiritual Formation

**Step 1:** Calculate Total Students Hours per Class

Credit Hours x Student Membership

\[ 3 \times 26 = 78 \]

**Step 2:** Calculate Sum of all Membership Hours

Fall 2008 = 705 total hours

**Step 3:** Calculate FTE

\[
\frac{\text{Total Membership Hours/Fall Divisor}}{\text{Fall Semester Divisor}} = \frac{705}{270} = 2.61
\]

FTE Analysis*

*FTE calculations are to show enrolment trends only during the time period for which the data was obtained.
Chapter 3

Bahnsen Center Facility Audit

Introduction

FACILITY ASSESSMENT PROCESS
The assessment of existing facilities is an important first step in the process of developing a Facility Plan for future development. In order to understand the future needs represented by a Facility Plan, you must first assess the physical, intellectual and social environment established by the existing conditions. The elements of particular importance are primarily related to the Site Analysis and the Existing Building Analysis.

Site Analysis
In analyzing the site it is important to study the primary elements of site design. These elements include the following:
- Land Use and Zoning Requirements
- Vehicular Access
- Parking Access
- Pedestrian Access
- Landscaping
- Site Lighting
- Signage
- Utility Distribution
- Storm Water Management
- Noise Management

The analysis will compare these existing elements against established design principals which enhance the ease of access for both the Staff and Faculty and most importantly for the Students of the Seminary.

Land use and zoning requirements are incorporated into the design schemes. The maximum building coverage, maximum impervious coverage, building set backs, and maximum building height are just a few such requirements that are addressed. The combination of vehicular, parking and pedestrian access to the facility must enhance user perception of accessibility, way finding, and safety. Vehicular and pedestrian access should provide clear and intuitive direction for visitors to locate the building entrance. Vehicular access should also provide separation between the public and the facility's personnel. Parking areas must provide convenient accessibility to the facility while maintaining a landscape that is not a complete paved surface. Pedestrian access should connect all destinations with direct routes. Pedestrian paths should be well landscaped and intersect various sizes of which are defined with hard and soft landscape and lighting. Landscaping and lighting should be designed to enhance the green concept while not creating secluded or hidden areas, which are security risks, or without being intrusive to the surrounding neighborhood. Site lighting should be designed to reinforce vehicular and pedestrian paths as well as highlight building entrances and signage. Signage should provide simple directive information for both vehicular and pedestrian circulation. Utility distribution should be designed to create logical and straightforward distribution throughout the facility.
Bahnson Center Site Data

**Municipality**  City of Bethlehem, County of Northampton

**Tax Parcel**  Site is considered property bounded to the north by Elizabeth Avenue, south by West Locust Street, east by Guetter Street, and on the west by Main Street. Site is comprised of five (5) separate tax parcels:

- Tax Parcel N6SE4A 14 1 0204E (PIN No. 4862-15-1459-5853)

**Owner**  Moravian College, Main Street/Elizabeth Avenue, Bethlehem, PA 18018

**Zoning District and Data**
Site is located in I-P – Private Institutional District
Minimum Lot Size: 5 acres (Existing non-conforming lot)

Setback Requirements:
- Front Yard – 20 feet
- Side Yard – 20 feet
- Rear Yard – 20 feet

Building Height: Height of buildings may equal the right-of-way of an adjacent street. Buildings may exceed this height if the building is setback in addition to the required setback 1 foot for each 3 feet or fraction thereof by which the building exceeds, in height, the width of the street.

Parking Requirements: 1 parking space for every 2 persons regularly employed at the institution, plus 1 space for each 10 classroom seats, plus 1 additional space as required by the parking schedule because of any supplementary parking generating activities at the institution.

Maximum Building Coverage: 40%

Utilities:
- Sanitary Sewer: Public
- Water Service: Public
- Gas Service: Info not forwarded
- Electrical: Info not forwarded
Site Review

Site inspection was conducted on Monday, March 23, 2009. Weather was generally clear, 45° F.

Resource Protected Areas:

- 100 Year Flood Plain: None
- Lakes and Ponds: None
- Wetlands: None
- Stream and Watercourses: None
- Steep Slopes: None
- Woodlands: None
- Agricultural Soils: None
- Carbon Geology: Yes
- Rock Outcroppings: None observed
- Sinkholes: None observed
- Springs: None observed

Inspection Findings: Site is in generally good condition. Site improvements such as paving, curbing, and concrete all appear in fair condition. There exists evidence of poor drainage conditions on the southern and western sides of the Bahnson Center. While there are inlets and piping in this location, the original design had drainage discharging into a dry well with an overflow. It is possible that this dry well is clogged and not functioning as designed, and it appears that the overflow has been plugged. Underground condition of stormwater piping was not observable, but may be contributing to the problem. There are some minor deficiencies with regard to ADA access, such as truncated domes not present. A small existing concrete retaining wall between the Bahnson Building and Lenox House is in poor condition, with several areas of failure. Other site features appear to be in adequate and functional condition.
Bahnson Center Facility Audit

Existing Building Analysis

In analyzing the existing building it is important to study both the current physical condition of the building and the functional design of existing spaces. In studying the current physical condition of each building the following criteria is evaluated:

- Date of original construction
- Date(s) of subsequent renovations
- Building size
- Number of floor levels
- Construction type
- Occupancy type
- Structural system
- Exterior envelope construction
- Exterior window construction
- Roof construction and warranty
- Interior wall construction and finishes
- Flooring materials
- Ceiling finishes
- Doors and hardware
- Mechanical Systems
- Electrical Systems
- Plumbing Systems
- Fire Protection Systems


Note: Actual Toilet Room upgrade requirements dictated by International Existing Building Code 2006 Classification of Work

Moravian Theological Seminary

ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
Bahnson Center Facility Audit

Bahnson Building - Existing Floor Plan

Moravian College - Main Street Campus Partial Map

Adjacent Buildings

1 - Colonial Hall
2 - Alumni House
3 - Lenox House
4 - Bahnson Building
6 - Sigma Sigma Sigma
7 - Zeta Tau Alpha

41 - Koinonia House
42 - Student Development Center
43 - Student Affairs
44 - Seminary Student Residence

Moravian Theological Seminary

ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
Bahnson Center Facility Audit

The following chart lists the existing square footage for the Seminary located in the Bahnson Building, Lenox House, and Reeves Library. Additional Campus resources include: Writing Center, Concert / Lecture Halls, Food Courts, and Fitness Center.

Program of Existing Conditions – Bahnson Building

<table>
<thead>
<tr>
<th>SPACE DESCRIPTION</th>
<th>UNIT NSF</th>
<th>NO. OF UNITS</th>
<th>TOTAL N.S.F.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BAHNSON BUILDING</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLASSROOMS</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>DLC</td>
<td>1060</td>
<td>1</td>
<td>1060</td>
</tr>
<tr>
<td>HERRNHUT</td>
<td>589</td>
<td>1</td>
<td>589</td>
</tr>
<tr>
<td>KUNSWALD</td>
<td>430</td>
<td>1</td>
<td>430</td>
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<tr>
<td>WITTENBERG</td>
<td>178</td>
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<td>178</td>
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<tr>
<td>ALDERSGATE</td>
<td>339</td>
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<td>339</td>
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<td>2,596</td>
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<td><strong>OFFICES</strong></td>
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<tr>
<td>FACULTY OFFICES</td>
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<td>ADJUNCT OFFICE</td>
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<td>96</td>
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<td>WORK ROOM</td>
<td>137</td>
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<td>1,213</td>
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<td><strong>ADMINISTRATION</strong></td>
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<td>DIR. OF VOCATIONAL</td>
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<td>DEAN’S OFFICE</td>
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<tr>
<td>LOUNGE</td>
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<td>STUDENT REC ROOM</td>
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<td>STUDENT COMPUTER</td>
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<td>COAT STORAGE</td>
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<td>FILE STORAGE</td>
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<td>KITCHEN</td>
<td>103</td>
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<td>WOMEN’S RESTROOM</td>
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<td>MEN’S RESTROOM</td>
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<tr>
<td>JANITOR CLOSET</td>
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<tr>
<td>CIRCULATION</td>
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<tr>
<td>(25% OF TOTAL SF)</td>
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<td>3,963</td>
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<tr>
<td><strong>TOTAL:</strong></td>
<td></td>
<td></td>
<td><strong>11,827</strong></td>
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</tbody>
</table>
Bahnson Center Facility Audit

Bahnson Building

Building Size: 12,072 square feet
Number of Floors: 1 story, no basement
Building Code Classification (IBC 2006):
  Type VB for 1976 portion
Building Code Classification (IBC 2006):
  Type IIB for North Addition
Occupation Type: IBC Use Group B (Business)

Construction Dates
1976  Date of Original Construction
1986  Renovation of Dean's Room and Dean's Secretary Area
1990  New EDPM flat roof over mechanical area, HVAC renovation, & new gutter/downspouts
1995  South entry and restroom renovation
       miscellaneous façade repairs
1999  Classroom addition on north side of building

Construction 1976 Building
Roof:
  Structure: Wood trusses/TJI joists/plywood sheathing
  Flat Roof: 0.06 EDPM roofing over ½" protection board (original built-up roof remains under old HVAC unit)

Construction North Addition
Roof:
  Structure: Steel joists, metal deck, 2-1/2" insulation with 5/8" OSB
  Flat Roof: Steel shingles on roof felt

Walls:
  Combination of masonry/wood stud walls with drywall interior finish/stucco exterior finish

Floors:
  4" concrete slab-on-grade

Ceilings:
  Combination of suspended acoustical tile and drywall

Windows:
  Original wood framed awning-style windows, fixed glass windows with PVC exterior cladding, double-pane insulated glazing

Doors:
  Interior: Unrated solid wood doors/frames
  Exterior: Glazed Steel doors/frames, panic hardware

Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
**Bahnson Center Facility Audit**

**Windows** The windows around the flat area of the roof are in poor condition. PVC cladding on the outside the windows is faded and numerous areas of separated cladding and open joints were observed. Several glazing pane seals are also broken. These windows would best be replaced. Consideration should be given to an all-aluminum window frame due to the harsh environment to which these windows are exposed.

**Doors** The south entrance door is in good condition but has a large gap between the vertical edges of the double doors. Weather-stripping should be added to minimize air infiltration.

The north Saal door and the east entrance door are in poor condition. The Saal door is damaged, has an old panic bar system, and the weather-stripping and sill are deteriorated. It is recommended to replace these doors.

The north entrance door of the original building is in good condition.

The north exit door in the addition hallway is in very good condition.

Interior wood doors in the original building are in fair condition. Some chipping of the wood, particularly around the base, was observed on several doors. These doors and frames are not fire-rated and do not have ADA compliant door handles.

Interior doors in the north addition are solid wood doors with steel frames and are in good condition. These doors and frames are fire-rated.

**Roof Structure** The roof structure of the original building, which consists of wood trusses and TJI joists on masonry and wood stud bearing walls, is in good condition. Access to view the entire area of the roof was limited, but the areas viewed were in good condition and there were no signs of roof structure deficiencies.

The addition roof consists of steel joists and metal deck which all appear to be in good condition. No deficiencies were observed in this roof structure.

**Interior Walls** Interior walls are wood stud walls finished with drywall. No structural deficiencies were observed. Numerous drywall cracks were observed at wall/ceiling corners, wall corners, duct chases, etc. These were all indicative of cracks from shrinkage or thermal movements and are not indicative of structural deficiencies. Cracks can be repaired by conventional methods. Cracks between ceiling and walls at vaulted ceilings are best repaired with a flexible sealant or covered with molding anchored to the wall only.

**Exterior Walls** The original building exterior walls are masonry with drywall interior finish, and stone or stucco exterior finish. These walls are in generally good condition, but the stucco finish does exhibit numerous cracks. The cracks in the stucco appear to be the result of thermal movements and are not structural. Cracks can be repaired via routing, and patching and painting.

Some small cracks were also observed in the E.I.F.S. finish on the north addition.
Bahnson Center Facility Audit

Floor Structure  The first floor is a concrete slab-on-grade. Some cracking of the slab was observed in the unfinished north side of the Saal storage room. These appear to be shrinkage cracks and are not a structural concern, and do not warrant repair.

Floor framing of the Saal balcony could not be viewed, but no signs of structural deficiencies were observed.

Mechanical Systems

HVAC System

The existing building is mechanical cooled by a packaged air cooled chiller, packaged rooftop DX-cooling, packaged rooftop heat pumps, and DX-split systems. The building is heated via electric resistance heat, gas-fired duct furnaces, gas-fired rooftop unit, and gas-fired furnaces.

Portions of the existing building are currently mechanically cooled via a nominal 30 ton, packaged rooftop air cooled chiller. The chiller is located on the flat roof area in the center of the building located directly above the mechanical room. An in-line pump delivers approximately 37 gpm of 44°F of an ethylene glycol (35%) solution to the Saal Room rooftop air handling unit, office fan coil units, and unit ventilators serving the Lounge and Recreation Room. The chiller has provided almost 35 years of service and is need of replacement. The chiller has far exceeded its life expectancy and should be replaced. A new chiller will provide better chilled water control as well as be more efficient than the existing chiller.

Chilled water is distributed to the Saal Room rooftop air conditioning unit located adjacent to the packaged air cooled chiller. This unit is also approaching 35 years of service and consideration should be given to unit replacement. Ventilation air and mechanically cooled air is derived at the rooftop unit while heat is generated within the duct distribution system via an electric duct heater to provide Saal Room temperature control. The existing unit does not have the heating and cooling capacity available to provide the code required amount of ventilation air for the large quantity of people that this room can accommodate.

Originally the building consisted of numerous classroom unit ventilators used for space conditioning. Over time, the majority of the classroom unit ventilators were replaced by ducted systems. However, a classroom unit ventilator is still used for conditioning of the Lounge and Recreation rooms. The classroom unit ventilators consist of fresh air intakes, chilled water coil, and electric resistance heat. These unit ventilators are original to the building construction and considerations should be given to replacing the units and eliminating the electric heat source for space heating.

All of the office spaces are conditioned by floor mounted fan coil units. All of the fan coil units are original to the building and have well exceeded their life expectancy. The fan coils units do not provide any means of ventilation air to the spaces. The fan coil units consist of a chilled water coil for cooling and electric resistance heat. Consideration of replacing the fan coil units with new, eliminating the electric heat source for space heating, and providing a means of code required ventilation air.
Bahnson Center Facility Audit

The Herrnhut Room is conditioned via a packaged rooftop heat pump. This unit is located directly above the mechanical room. The heat pump provides heating and cooling of this space only. The heat pump is a single zone, constant volume unit with ventilation air introduced at the rooftop unit. The existing heat pump does not have the cooling and heating capacity to deliver the code required ventilation air required for the space.

As discussed above, the classroom unit ventilators serving the remaining areas of the original building were removed in 1990 and were replaced by a new rooftop air handling unit. The rooftop air handling unit consists of a chilled water coil for cooling, with associated outside air intakes for ventilation air. A supply and return air duct distribution system was added to provide the required airflow to each space. Each space consists of a supply air electric duct coil that is used as zone control and as means for providing space heating of the space. Consideration should be given to the replacement of the electric heat source for space heating.

With the addition in 1999, an additional gas fired rooftop unit was added to condition the Student Computer Room and Study Room. The rooftop unit consists of a gas-fired duct furnace and a means of introducing ventilation air. The supply air duct distribution system consists of a common duct mounted DX-cooling cooling with associated rooftop mounted condensing unit. Currently there is no means of zone control between these two spaces.

The Distance Learning Center consists of two floor mounted, gas-fired furnaces with associated DX-cooling coil. The condensing units are located on grade adjacent to the furnace. This system appears to function very well for the space. There appears to be ample outside air capacity for the expected occupancy.

Electrical System

The existing building is currently being served by an underground feed from Colonial Hall with a 400A, 208/120V, 3-phase service. The main building distribution is an 800A, 208/120V, 42,000 AIC rated distribution panel with a main 800A frame breaker fitted with 400A plugs, located in the main electrical/telecom room. A majority of the branch panels serving the facility are located within the electrical room with a few panels located throughout the space. Branch panels have predominantly been divided to have dedicated panels to serve lighting, receptacle, and HVAC loads.

The existing normal lighting throughout the building is predominantly recessed and surface mounted linear and compact fluorescent light fixtures controlled via local switching with (2) small lighting control dimming systems located in the large instructional areas. The life safety egress lighting was updated between 2001-2002 is currently being provided by dedicated emergency battery wall packs, remote heads, and exit signs located within the corridors and the main paths of egress.
**Bahnson Center Facility Audit**

The existing telephone demarc and data rack are located in the main telecom/electrical room and are fed from the main campus distribution from Comenius building. The existing data and telephone horizontal cabling is Cat 5 wiring and is distributed throughout the building from the main data rack and telephone punchblocks that are located in the telecom/electrical room. Wireless drops are located above the ceiling throughout the building to provide wireless capability. CATV is currently only in a few areas and will need to contact the existing service provider (Service Electric) to verify how this building is currently being fed from. The technology distribution and equipment has been updated by the University recently and is currently to the standards of the College. Additional requirements would be to provide CATV and video conferencing in all classrooms, ability to access distance learning with audio/video, and to have any future telecom upgrades to be based off Cat 6 wiring and equipment.

The existing fire alarm system is a Simplex 4004, zone system comprised of horn/strobe notification devices and photoelectric smoke detectors for detection with manual pull stations, and has been updated a few years back. It currently is serving 6-zones and appears to be expandable to a total of 8-zones, will have to coordinate with local Simplex representative for the expandability of the existing system.

**Plumbing System**

The existing 2" water service is derived from West Locust Street. The water piping continues underground the building and enters the mechanical room. The water service includes backflow prevention and metering per City of Bethlehem requirements. The 2" water service is adequate for the current building domestic water load, which includes water closets and urinals with flush valves, sinks, lavatories, and hose bibbs. Domestic hot water for the building is generated by an 80 gallon, 90 kw electric storage water heater.

The sanitary waste for the building also exits the building at the south end and connects to a sanitary main in Locust Street. The 4" sanitary waste service appears to include a house trap and vent. The 4" service is adequately sized to handle the current building sanitary flow requirements.
### Bahnson Center Facility Audit

#### Bahnson Building Utility Costs Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Electric</th>
<th>Gas</th>
<th>All Utilities</th>
</tr>
</thead>
<tbody>
<tr>
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<td>$13,834</td>
<td>$842</td>
<td>$15,934</td>
</tr>
<tr>
<td>2003</td>
<td>$19,631</td>
<td>$862</td>
<td>$21,727</td>
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<tr>
<td>2004</td>
<td>$21,016</td>
<td>$665</td>
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<tr>
<td>2005</td>
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<tr>
<td>2006</td>
<td>$24,321</td>
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<tr>
<td>2007</td>
<td>$25,936</td>
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<tr>
<td>2008</td>
<td>$25,228</td>
<td>$868</td>
<td>$27,608</td>
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#### Lenox House Utility Costs Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>All Utilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
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<tr>
<td>2003</td>
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<td>2004</td>
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<td>2005</td>
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<td>2006</td>
<td>$2,689</td>
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<tr>
<td>2007</td>
<td>$3,171</td>
</tr>
<tr>
<td>2008</td>
<td>$3,830</td>
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</table>
**Sustainability**

**MEP Systems**
As the College/Seminary contemplates major renovations and additions for the Bahnson Center, there are sustainability goals that should be considered the mechanical, electrical, and plumbing systems associated with the building. These areas include the following.

**Water Consumption**
Consideration should be given to water reduction use whether it is the water that is consumed within the building for domestic use or outside the building for landscape irrigation systems. Domestic water reduction strategies shall include the incorporation of low consuming plumbing fixtures, with the potential of no flow urinals. The replacement of the existing plumbing fixtures with new low flow fixtures can provide a water consumption savings of 20% to 30%.

**Energy**
The existing building currently uses gas and electric for heating and cooling. Several strategies for energy savings as it relates to the mechanical, electrical, and plumbing systems shall be considered. These strategies include the optimization of Energy Performance. Potential reductions in energy include conversion of electric heat to alternative energy source, HVAC systems heat recovery, and the use of occupancy sensors for HVAC and lighting operation during occupied periods only.
With the incorporation of new controls and a properly commissioned building, a significant energy savings can be realized.

**Indoor Air Quality**
It has been proven that productivity among building tenants will greatly increase with increased building Indoor Environmental Quality. HVAC systems that provide adequate ventilation air and increased ventilation effectiveness is crucial to the success of a well designed HVAC systems. Also, HVAC systems that provide adequate thermal comfort is just as important. HVAC Control systems must provide flexibility of control to provide the temperature and humidity levels within the comfort zone. Day lighting and views also provide an indoor environment that will offer a high level of productivity. Consideration of daylight of offices and classrooms must be considered. Consideration must also be given to all the materials that are to be used within the building. Low emitting materials shall be used throughout the project to minimize indoor pollutants.
The Lenox House is a supplementary building to the Bahnson Building.

### Program of Existing Conditions – Lenox House

<table>
<thead>
<tr>
<th>SPACE DESCRIPTION</th>
<th>UNIT NSF</th>
<th>NO. OF UNITS</th>
<th>TOTAL NSF</th>
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<td><strong>OFFICES</strong></td>
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<td>MARKETING OFFICE</td>
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<td>250</td>
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<tr>
<td>OFFICE A204</td>
<td>135</td>
<td>1</td>
<td>135</td>
</tr>
<tr>
<td>OFFICE E202</td>
<td>150</td>
<td>1</td>
<td>150</td>
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<tr>
<td>OFFICE E203</td>
<td>135</td>
<td>1</td>
<td>135</td>
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<tr>
<td><strong>TOTAL</strong></td>
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<td><strong>670</strong></td>
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</tr>
<tr>
<td>PORCH</td>
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<td>145</td>
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<tr>
<td>PRAYER ROOM</td>
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<td>215</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
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<td><strong>SUPPORT</strong></td>
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<tr>
<td>STORAGE</td>
<td>25</td>
<td>1</td>
<td>25</td>
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<tr>
<td>VESTIBULE</td>
<td>25</td>
<td>2</td>
<td>50</td>
</tr>
<tr>
<td>KITCHEN</td>
<td>25</td>
<td>1</td>
<td>25</td>
</tr>
<tr>
<td>ATTIC</td>
<td>25</td>
<td>1</td>
<td>25</td>
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<tr>
<td>TOILET ROOM</td>
<td>25</td>
<td>1</td>
<td>25</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>150</strong></td>
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<td><strong>LENOX HOUSE TOTAL:</strong></td>
<td></td>
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<td><strong>1,180</strong></td>
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</table>

### Program of Existing Conditions Totals

- Bahnson Building: 11,827 NSF
- Lenox House: 1,180 NSF
- Total NSF: 13,007 NSF
Bahnson Center Facility Audit

Lenox House

Construction Dates:
Date of Original Construction: Unknown
Building Size: 750 square feet per floor, not including porches
Number of Floors: 2 plus basement and attic
Building Code Classification (IBC 2006): Type VB
Occupation Type: IBC Use Group B (Business)

Construction:
Roof: Timber rafters with wood sheathing and asphalt shingles
Walls: Upper Floors - Interior Wood framed stud walls with plaster Exterior – Brick with plaster interior finish
Foundation Wall: Concrete
Floor: Basement - Concrete slab-on-grade
First and second floors: Dimensional wood joists at 16” o.c. supported by center wood beam and steel pipe columns
Ceilings:
   Basement: Suspended acoustical tile
   Upper Floors: Plaster
Windows:
   Original double-hung windows with wood frames, counterweights, single pane glass and storm windows
Doors:
   Exterior: Wood, glazed panels, no fire-rating or panic hardware, handles not ADA compliant
   Interior: Wood, no fire-rating, handles not ADA compliant

Structural Observations

Field inspection of the building was conducted on March 6, 2009. The inspection included visual observations of the following: Roofing, Windows, Doors, Roof structure (where visible), Interior and exterior walls, Floor structure, Foundation walls.

The structural elements of the building were found to be in generally good condition, and no significant structural deficiencies were observed. Photographs of all minor deficiencies observed were taken and are included as part of this report. Key plans are also included which graphically illustrate the locations of the deficiencies.

Inspection Findings

Roofing: The shingle roofing is in fair to good condition. Water stains on the ceiling on the second floor around the chimney indicate leakage along the fireplace chimney. The source of the leak could not be determined, but flashing between the roofing and chimney is a likely cause. Water penetration into the brick may also be a factor.

Windows: The windows are very old and wood-framed, single pane double-hung windows with counterweights in the frame. Most of the windows have aluminum windows on the exterior. The windows are in fair to poor condition. Most of windows could not be opened. The two windows on the south wall of the prayer room do not close all the way. One window pane in one of the attic windows is cracked.
Bahnsen Center Facility Audit

The wood frame of the picture window on the west wall of the prayer room appears to sag at the bottom of the north corner of the window indicating possible water damage. Replacement of the windows with new thermal pane windows should be considered.

Doors: Exterior doors are wood doors with glass panels. The doors do not have panic hardware or ADA handles. There are steps to both doors, thus the building is not accessible. Interior doors are wood doors and are not fire-rated nor do they have ADA compliant handles.

Roof Structure: The roof structure could not be viewed as the attic ceiling is roughly finished with panels. No sagging or excessive deflections that would indicate structural deficiency were observed.

Interior Walls: Interior walls are wood studs with plaster finish. Numerous hairline cracks in the plaster were observed but all appear to be the result of shrinkage or thermal movements. Number of cracks observed does not seem excessive for a structure of this age.

The interior walls of the rear porch appear to be a thin panel with insulation, and all of the walls are severely cracked. This material should be removed and replaced with a moisture resistant panel and insulation if desired.

Exterior Walls: Exterior walls are brick which is generally in good condition. Some minor cracking was observed but is not structurally significant.

Parapet walls along both sides of the west entrance steps are both cracked and out of alignment. The tie rods and anchor plates holding these walls together are corroded. If the steps are not replaced with an entrance ramp, the parapet walls should be removed and rebuilt with proper reinforcement.

Floor Structure: The floor is constructed of dimensional wood joists which span from the front to the back of the building and are supported by a central wood beam in the basement and a stud wall above. The first floor framing was able to be viewed from the basement and is in good condition. It should be noted that the framing capacity of the first floor is that of a single family residence of the time of original construction. The second floor framing could not be viewed, but no signs of structural problems were observed.

It was observed that three small tiles are loose on the fireplace hearth pad.

Foundation Walls: The foundation walls are constructed of concrete. Some of the walls could not be viewed due to interior finishes in the basement. The exposed west wall in what appears to be an old coal bin under the porch exhibits vertical cracks. Vertical cracks were also observed on the other foundation walls above grade as viewed from the exterior. As the cracks are vertical they do not diminish the structural integrity of the wall, nor do they appear to be allowing water infiltration. As such, no repairs are recommended at this time.

Miscellaneous: Railing to the second floor does not meet code and should be replaced and/or new railing added on the wall side.
Bahnsen Center Facility Audit

Reeves Library is located on the Moravian Campus and has dedicated space which supports the Seminary’s educational mission.

Program of Existing Conditions – Reeves Library

<table>
<thead>
<tr>
<th>SPACE DESCRIPTION</th>
<th>UNIT NSF</th>
<th>NO. OF UNITS</th>
<th>TOTAL N.S.F.</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>REEVES LIBRARY</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FACULTY STUDY OFFICES</td>
<td>36</td>
<td>4</td>
<td>144</td>
<td>Moravian Scholar space</td>
</tr>
<tr>
<td>GROENFELDT COLLECTION</td>
<td>1500</td>
<td>1</td>
<td>1500</td>
<td>Moravian Scholar space</td>
</tr>
<tr>
<td>BOOK STACKS</td>
<td>600</td>
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<td>600</td>
<td>49,553 items (B classification)</td>
</tr>
<tr>
<td>ARCHIVES</td>
<td>353</td>
<td>1</td>
<td>353</td>
<td>1/3 of compact shelving - MTS</td>
</tr>
<tr>
<td>RARE BOOKS COLLECTION</td>
<td>365</td>
<td>1</td>
<td>365</td>
<td>13 ranges of materials</td>
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<tr>
<td></td>
<td></td>
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<td></td>
<td>2,962</td>
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Program of Existing Conditions Totals

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<tr>
<th></th>
<th>UNIT NSF</th>
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</thead>
<tbody>
<tr>
<td>Bahnson Building</td>
<td>11,827 NSF</td>
</tr>
<tr>
<td>Lenox House</td>
<td>1,180 NSF</td>
</tr>
<tr>
<td>Reeves Library</td>
<td>2,962 NSF</td>
</tr>
<tr>
<td></td>
<td>15,969 NSF</td>
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Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT
MKSD architects
Chapter 4

Proposed Floor Plan Options & Estimates

This section investigates modifications and additions to the existing Bahnson Center, including the Bahnson Building and Lenox House, to create a more efficient use of space. All plans are only proposed options.

Total Square Footage
Lenox House 1780 GSF
Bahnson Building 12,039 GSF

All floor plan options are conceptual

Key Legend: All plans are noted by color relating to their function. See below for delineations.

Renovations
- Administration / Staff Area
- Faculty Space
- Classroom / Instruction Space
- Large Group Space

Additions
- New Faculty Space
- New Classroom Space

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ALL FLOOR PLAN OPTIONS ARE CONCEPTUAL

PROPOSED OPTION 1

Overall Concept
- No additions required
- Lenox House remains in use (without change)
- (1) Distance Learning Classroom
- (2) Medium size classrooms
- (1) Large classroom
- (3) Additional unisex toilet rooms

Plan Efficiencies
- Plan reorganization creates functional adjacencies & appropriate sized spaces.
- Increases mechanical space
- Minimizes amount of lounge spaces
- Exterior signage & canopies at entrances
- Creates new welcoming area
- Eliminates the ADA issue in Aldersgate Classroom
- Copy room private for / near faculty

Plan Deficiencies
- Lack of connection to Lenox House
- Data area located in mechanical room
- Lack of Storage area in Bahnson

Additions
- New Classroom Space
- New Faculty Space

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ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

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### Minor Renovations Estimate

<table>
<thead>
<tr>
<th>Description</th>
<th>SF</th>
<th>Rate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
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#### Mechanical and Electric System Improvements

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<tbody>
<tr>
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#### Building Exterior Repairs and Maintenance

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<tr>
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### Construction Subtotal

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<td>Construction / Design Contingency @ 10%</td>
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<td><strong>ESTIMATED CONSTRUCTION COST</strong></td>
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### Major Renovation

<table>
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</tr>
</thead>
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<td>$146,625.00</td>
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#### Site Work

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</tr>
</thead>
<tbody>
<tr>
<td>Misc site (earthwork, striping, landscaping E&amp;S, stormwater, etc.)</td>
<td>$300.00</td>
<td>$0.00</td>
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### CONSTRUCTION SUBTOTAL

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td><strong>ESTIMATED CONSTRUCTION COST</strong></td>
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### SOFT COST @ 18% (Fees, Furniture, Equipment, etc.)

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<thead>
<tr>
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<tbody>
<tr>
<td>SOFT COST</td>
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### ESTIMATED PROJECT COST

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<tbody>
<tr>
<td><strong>ESTIMATED PROJECT COST</strong></td>
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<td>$1,776,020.95</td>
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**Minor Renovations** includes the replacement of Wall Paint/Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

**Major Renovations** include the complete removal and replacement of existing building systems including exterior improvements and windows; relocation of existing interior wall partitions including doors and finishes associated with overall changes to the existing building.

All budgetary costs are based on *R.S. Means 2009 Building Construction Cost Data, 67th Annual Edition* and assumptions made by the project team related to the probable materials and labor required to install median quality products into the renovations of the building project as depicted in the conceptual design options. These costs do not include project cost contingencies, contractor mark-ups, design or local jurisdiction fees, furniture, fixtures, equipment or inflationary escalation percentages based on future project bid dates.

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ALL FLOOR PLAN OPTIONS ARE CONCEPTUAL

PROPOSED OPTION 2

Overall Concept
• (2) Additions required
  • Lenox House offline
  • (1) Distance Learning Classroom
• (2) Medium size classrooms
• (1) Large classroom
• (3) Additional unisex toilet rooms

Plan Efficiencies
• Plan reorganization creates functional adjacencies & appropriate sized spaces
• Increases mechanical space
• Minimizes amount of lounge spaces
• Exterior signage /canopies at entrances
• Creates new welcoming area
• Eliminates the ADA issue in Aldersgate Classroom
• Incorporates small conference room spaces
• Addition of separate data closet
• Copy room private for /near faculty
• Proposes kitchen to be relocated adjacent to large meeting room (Saal)

Plan Deficiencies
• Lack of storage space

Renovations
- Administration / Staff Area
- Faculty Space
- Classroom / Instruction Space
- Large Group Space

Additions
- New Faculty Space
- New Classroom Space

Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

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## OPTION 2 ESTIMATE

### Minor Renovations

<table>
<thead>
<tr>
<th>Description</th>
<th>Square Feet</th>
<th>Cost per SF</th>
<th>Total Cost</th>
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</thead>
<tbody>
<tr>
<td>Additions</td>
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<td>Lump Sum</td>
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<td></td>
<td>$825,000.00</td>
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<tr>
<td>Building Exterior Repairs and Maintenance</td>
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<td>$50,000.00</td>
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<tr>
<td>Lump Sum</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
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<tr>
<td>Construction / Design Contingency @ 10%</td>
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### Major Renovation

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<th>Square Feet</th>
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<th>Total Cost</th>
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<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
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<td></td>
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</tr>
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<td><strong>ESTIMATED CONSTRUCTION COST</strong></td>
<td></td>
<td></td>
<td><strong>$430,980.00</strong></td>
</tr>
</tbody>
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### Site Work

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Misc site (earthwork, striping, landscaping E&amp;S, stormwater, etc.)</td>
<td>$100,000.00</td>
</tr>
<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
<td><strong>$100,000.00</strong></td>
</tr>
<tr>
<td>Construction / Design Contingency @ 10%</td>
<td><strong>$10,000.00</strong></td>
</tr>
<tr>
<td><strong>ESTIMATED CONSTRUCTION SUBTOTAL</strong></td>
<td><strong>$110,000.00</strong></td>
</tr>
<tr>
<td>SOFT COST @ 18% (Fees, Furnishings, Equipment, etc.)</td>
<td><strong>$391,421.25</strong></td>
</tr>
<tr>
<td><strong>ESTIMATED PROJECT COST</strong></td>
<td><strong>$2,565,983.75</strong></td>
</tr>
</tbody>
</table>

**Minor Renovations** includes the replacement of Wall Paint/Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

**Major Renovations** include the complete removal and replacement of existing building systems including exterior improvements and windows; relocation of existing interior wall partitions including doors and finishes associated with overall changes to the existing building.

All budgetary costs are based on **R.S. Means 2009 Building Construction Cost Data, 67th Annual Edition** and assumptions made by the project team related to the probable materials and labor required to install median quality products into the renovations of the building project as depicted in the conceptual design options. These costs do not include project cost contingencies, contractor mark-ups, design or local jurisdiction fees, furniture, fixtures, equipment or inflationary escalation percentages based on future project bid dates.

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**Moravian Theological Seminary**  
**ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT**

**MKSD** architects
ALL FLOOR PLAN OPTIONS ARE CONCEPTUAL

PROPOSED OPTION 3

Overall Concept
• (1) Addition required to the north
• Lenox House remains in use with additions
• (1) Distance Learning Classroom
• (3) Medium size classrooms
• (1) Large classroom
• New Women’s & Men’s toilet rooms

Plan Efficiencies
• Plan reorganization creates functional adjacencies & appropriate sized spaces.
• Increases mechanical space
• Minimizes amount of lounge spaces
• Exterior signage & canopies at entrances
• Creates new welcoming area
• Eliminates the ADA issue in Aldersgate Classroom
• Proposes kitchen to be relocated adjacent to large meeting room (Saal)
• Addition of separate data closet
• Copy room private for / near faculty
• Creates connection either exterior or interior between Lenox House & Bahnson Center

Plan Deficiencies
• Lack of storage space in Bahnson Building

Renovations
- Administration / Staff Area
- Faculty Space
- Classroom / Instruction Space
- Large Group Space

Additions
- New Faculty Space
- New Classroom Space

Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

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**OPTION 3 ESTIMATE**

### Minor Renovations

- **Minor Renovations**
  - 9,235 sf x $25.00 /sf = $230,875.00

- **Mechanical and Electric System Improvements**
  - Lump Sum = $825,000.00

- **Building Exterior Repairs and Maintenance**
  - Lump Sum = $50,000.00

**CONSTRUCTION SUBTOTAL** = $1,105,875.00

- Construction / Design Contingency @ 10% = $110,587.50

**ESTIMATED CONSTRUCTION COST** = $1,216,462.50

### Major Renovation

- **Major Renovations**
  - 2,804 sf x $125.00 /sf = $350,500.00

**CONSTRUCTION SUBTOTAL** = $350,500.00

- Construction / Design Contingency @ 10% = $35,050.00

**ESTIMATED CONSTRUCTION COST** = $385,550.00

### Additions

- **New Construction**
  - 1,437 sf x $300.00 /sf = $431,100.00

**CONSTRUCTION SUBTOTAL** = $431,100.00

- Construction / Design Contingency @ 10% = $43,110.00

**ESTIMATED CONSTRUCTION COST** = $474,210.00

### Site Work

- Misc site (earthwork, striping, landscaping E&S, stormwater, etc.)
  - Lump Sum = $150,000.00

**CONSTRUCTION SUBTOTAL** = $150,000.00

- Construction / Design Contingency @ 10% = $15,000.00

**ESTIMATED CONSTRUCTION COST** = $165,000.00

**ESTIMATED CONSTRUCTION SUBTOTAL** = $2,241,222.50

**SOFT COST @ 18% (Fees, Furntitrue, Equipment, etc.)** = $403,420.05

**ESTIMATED PROJECT COST** = $2,644,642.55

---

**Minor Renovations** includes the replacement of Wall Paint/Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

**Major Renovations** include the complete removal and replacement of existing building systems including exterior improvements and windows; relocation of existing interior wall partitions including doors and finishes associated with overall changes to the existing building.

All budgetary costs are based on R.S. Means 2009 Building Construction Cost Data, 67th Annual Edition and assumptions made by the project team related to the probable materials and labor required to install median quality products into the renovations of the building project as depicted in the conceptual design options. These costs do not include project cost contingencies, contractor mark-ups, design or local jurisdiction fees, furniture, fixtures, equipment or inflationary escalation percentages based on future project bid dates.

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**Moravian Theological Seminary**  
**ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT**  
**MKSD architects**
ALL FLOOR PLAN OPTIONS ARE CONCEPTUAL

PROPOSED OPTION 4

Overall Concept
• (2) Addition required to the north
• Lenox House offline
• (1) Distance Learning Classroom
• (2) Medium size classrooms
• (1) Large classroom
• New Women’s & Men’s toilet rooms

Plan Efficiencies
• Plan reorganization creates functional adjacencies & appropriate sized spaces.
• Increases mechanical space
• Minimizes amount of lounge spaces
• Exterior signage & canopies at entrances
• Creates new welcoming area
• Eliminates the ADA issue in Aldersgate Classroom
• Proposes kitchen to be relocated adjacent to large meeting room (Saal)
• Addition of separate data closet
• Copy room private for faculty & adjacent to offices
• Proposed Prayer Room
• Incorporates all offices into one building
• Creates new storage area

Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
**OPTION 4 ESTIMATE**

<table>
<thead>
<tr>
<th>Minor Renovations</th>
<th>Additions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Minor Renovations</strong></td>
<td><strong>Additions</strong></td>
</tr>
<tr>
<td><strong>Minor Renovations</strong></td>
<td><strong>New Construction</strong></td>
</tr>
<tr>
<td>$8,965 sf x $25.00 = $224,125.00</td>
<td>$1,379 sf x $300.00 = $413,700.00</td>
</tr>
<tr>
<td><strong>Mechanical and Electric System Improvements</strong></td>
<td></td>
</tr>
<tr>
<td>Lump Sum = $825,000.00</td>
<td></td>
</tr>
<tr>
<td><strong>Building Exterior Repairs and Maintenance</strong></td>
<td></td>
</tr>
<tr>
<td>Lump Sum = $50,000.00</td>
<td></td>
</tr>
<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
<td></td>
</tr>
<tr>
<td>Construction / Design Contingency @ 10%</td>
<td></td>
</tr>
<tr>
<td>ESTIMATED CONSTRUCTION COST</td>
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</tr>
<tr>
<td><strong>Major Renovation</strong></td>
<td></td>
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<tr>
<td><strong>Major Renovation</strong></td>
<td></td>
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<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
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</tr>
<tr>
<td>Construction / Design Contingency @ 10%</td>
<td></td>
</tr>
<tr>
<td>ESTIMATED CONSTRUCTION COST</td>
<td></td>
</tr>
</tbody>
</table>

**CONSTRUCTION SUBTOTAL** = $1,099,125.00

**CONSTRUCTION SUBTOTAL** = $384,250.00

**CONSTRUCTION SUBTOTAL** = $1,000,000.00

**CONSTRUCTION SUBTOTAL** = $2,196,782.50

**SOFT COST @ 18% (Fees, Furniture, Equipment, etc.)** = $395,420.85

**ESTIMATED PROJECT COST** = $2,592,203.35

---

Minor Renovations includes the replacement of Wall Paint/Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

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Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT
MKSD architects
ALL ENTRANCE OPTIONS ARE CONCEPTUAL

LOCUST STREET ENTRANCE MODIFICATIONS

Proposed Goals:
• Create canopies at entrances to protect visitors from the elements
• Increase Moravian Theological Seminary visibility, Increase signage
• Highlight the “front door”
• Refinish stucco, darken color to hide environmental damages
• Increase landscaping to direct visitors
• Remove wood panel replace with more durable material
• Manage existing water issues for user comfort
ALL ENTRANCE OPTIONS ARE CONCEPTUAL

ELIZABETH AVENUE ENTRANCE MODIFICATIONS

Proposed Goals:
• Create canopies at entrances to protect visitors from the elements
• Increase signage
• Refinish stucco, darken color to hide environmental damages
• Increase landscaping to direct visitors

Proposed refinish existing stucco w/ darker color (typical)
Proposed metal letter signage
Proposed canopy
Proposed signage directory

Existing trees to remain
Existing sidewalk
New canopy & signage

Moravian Theological Seminary
Academic Program/Space Utilization & Bahnson Center Facility Audit
MKSD architects
## Entrance Modifications

### Estimate of Construction Cost

<table>
<thead>
<tr>
<th>Exterior Option</th>
<th>Locust Street Entrance</th>
<th>Elizabeth Avenue Entrance</th>
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<tbody>
<tr>
<td>Proposed Canopy</td>
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<td>Proposed Canopy</td>
</tr>
<tr>
<td>Lump Sum</td>
<td>$25,000.00</td>
<td>$30,000.00</td>
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<tr>
<td>Signage</td>
<td></td>
<td></td>
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<tr>
<td>Lump Sum</td>
<td>$2,500.00</td>
<td></td>
</tr>
<tr>
<td>Entry Finishes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stucco Color, Remove Wood siding &amp; replace w/ new material</td>
<td></td>
<td>$50,000.00</td>
</tr>
<tr>
<td>Lump Sum</td>
<td>$8,500.00</td>
<td></td>
</tr>
<tr>
<td>Retaining Wall</td>
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<td></td>
</tr>
<tr>
<td>Lump Sum</td>
<td>$4,500.00</td>
<td></td>
</tr>
<tr>
<td>Landscape Improvements</td>
<td></td>
<td></td>
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<tr>
<td>Lump Sum</td>
<td>$10,000.00</td>
<td></td>
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<tr>
<td><strong>CONSTRUCTION SUBTOTAL</strong></td>
<td>$50,500.00</td>
<td>$94,500.00</td>
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<tr>
<td>Construction / Design Contingency @ 10%</td>
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<td>$9,450.00</td>
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<tr>
<td><strong>ESTIMATED CONSTRUCTION COST</strong></td>
<td></td>
<td>$103,950.00</td>
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</tbody>
</table>

### Major Renovations

- Includes the complete removal and replacement of existing building systems including exterior improvements and windows; relocation of existing interior wall partitions including doors and finishes associated with overall changes to the existing building.

### Minor Renovations

- Includes the replacement of Wall Paint/Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

### Construction / Design Contingency @ 10%

- $5,050.00

### Estimated Construction Subtotal

- $159,500.00

### Soft Cost @ 18% (F F & E, etc.)

- $188,210.00

### Estimated Project Cost

- $347,710.00

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**Minor Renovations** includes the replacement of Wall Paint/ Vinyl Wall Covering; Painting of all previously painted items; Carpet/Vinyl Floor Tile; Wood/Vinyl floor base; Acoustic Panel Ceilings and the repair and refinishing of gypsum wall board surfaces where required by changes to building systems.

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**Moravian Theological Seminary**

**ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT**

**MKSD architects**

4.12
Chapter 5

OBSERVATIONS and RECOMMENDATIONS

Future Capital Projects – Bahnson Building

• Complete site work to alleviate current site drainage issues at the Bahnson site and review operation of existing dry well system

• Provide additional site identification signage

• Provide specific entrance signage on

• Reevaluate existing security access system for usability

• Reevaluate locked building hours to align with class schedules

• Schedule replacement of membrane roofing

• Replace all windows around flat roof area

• Replace north and east entrance doors

• Weatherize all exterior doors

• Replace/repair exterior stucco finish

• Replace all hardware with ADA compliant hardware

• Install ADA compliant interior signage

• Provide ADA access to the Aldersgate classroom

• Replace the 35 year old Saal rooftop AC unit

• Replace the 35 year old chiller

• Floor mounted fan coil units have exceed their life expectancy

• Provide a means of code required ventilation air

• Replace Herrnhut packaged rooftop unit

• Provide HVAC zone controls on 1999 gas-fired rooftop unit

• Provide code compliant toilet facilities

• Provide appropriate number of toilet fixtures

• Provide appropriately sized mechanical room

• Consider providing an alternate fuel source

• Consider sustainability goals for mechanical, electrical & plumbing systems

Moravian Theological Seminary
ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT

MKSD architects
OBSERVATIONS and RECOMMENDATIONS

Future Capital Projects – Bahnson Building
• Provide natural light to all classrooms
• Provide weather protection at entry locations with canopies
• Install vestibule at North entry door
• Replace carpet
• Upgrade window treatments
• Provide a coffee/microwave cooking area in Student Lounge
• Replace corridor lighting to eliminate dark areas
• Remove old unused furniture

Future Capital Projects – Lenox House
• Provide ADA access to Lenox house
• Provide additional site identification signage
• Reevaluate existing security access system for usability
• Repair flashing on Lenox House chimney
• Replace Lenox House windows
• Weatherize all exterior doors
• Repair/Rebuild structurally unsound porch wall on Lenox House
• Replace all hardware with ADA compliant hardware
• Provide Panic exit hardware on Lenox house egress doors
• Install ADA compliant railings in Lenox house
• Provide code compliant toilet facilities
OBSERVATIONS and RECOMMENDATIONS

Program & Building Utilization – Bahnson Building

- Centralize Seminary program into one location
- Reorganize Administrative areas for optimal usage
- There are sufficient classrooms to support the current academic program as well as the intended FTE increase of 75 by 2015
- Schedule courses in every classroom a minimum of 3 times a day 5 days a week to make use of under-utilized classrooms
- Schedule course into classrooms by enrollment to maximize classroom utilization
- Standardize core teaching hours to effectively use classrooms
- Based on current scheduling and FTE load the MTS program of study could be accommodated in a less than five day a week classroom schedule
- Use appropriate furniture layouts to maximize design capacity seating
- There are sufficient Faculty spaces: Institute a standard relationship between number of faculty teaching hours and office hierarchy
- Trading File Storage with Copy Room for security concerns
- Reorganize storage for efficiency
- Consider long-term storage in unused areas of Lenox house
**OBSERVATIONS and RECOMMENDATIONS**

**Costs**
- Centralize Seminary program into one location

**Note:**
*High recommendations should be completed by August 2010*

<table>
<thead>
<tr>
<th>Priority</th>
<th>Recommendation</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Complete site work to alleviate current site drainage issues at the Bahnson site and review operation of existing dry well system</td>
<td>$75,000.00</td>
</tr>
<tr>
<td>High</td>
<td>Replace all hardware with ADA compliant hardware</td>
<td>$20,150.00</td>
</tr>
<tr>
<td>High</td>
<td>Install ADA compliant interior signage</td>
<td>$8,000.00</td>
</tr>
<tr>
<td>High</td>
<td>Provide ADA access to the Aldersgate classroom</td>
<td>$6,500.00</td>
</tr>
<tr>
<td>High</td>
<td>Replace the 35 year old Saal rooftop AC unit</td>
<td>currency missing</td>
</tr>
<tr>
<td>High</td>
<td>Provide a means of code required ventilation air</td>
<td>currency missing</td>
</tr>
<tr>
<td>High</td>
<td>Replace Herminuell packaged rooftop unit</td>
<td>$25,000.00</td>
</tr>
<tr>
<td>High</td>
<td>Provide code compliant toilet facilities</td>
<td>currency missing</td>
</tr>
<tr>
<td>High</td>
<td>Provide appropriate number of toilet fixtures</td>
<td>$30,000.00</td>
</tr>
<tr>
<td>High</td>
<td>Provide appropriately sized mechanical room</td>
<td>$75,000.00</td>
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<tr>
<td>High</td>
<td>Provide ADA access to Lenox house</td>
<td>$15,000.00</td>
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<tr>
<td>High</td>
<td>Repair/Rebuild structurally unsound porch wall on Lenox House</td>
<td>$6,000.00</td>
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<tr>
<td>High</td>
<td>Replace all hardware with ADA compliant hardware</td>
<td>$11,050.00</td>
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<tr>
<td>High</td>
<td>Provide Panic exit hardware on Lenox house egress doors</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>High</td>
<td>Install ADA compliant railings in Lenox house</td>
<td>$1,200.00</td>
</tr>
<tr>
<td>High</td>
<td>Provide code compliant toilet facilities</td>
<td>$4,000.00</td>
</tr>
</tbody>
</table>

**Total Cost** $473,900.00
**OBSERVATIONS and RECOMMENDATIONS**

**Costs**

- Centralize Seminary program into one location

**Note:**

*Medium recommendations should be completed within 2-3 years.*

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**MORAVIAN THEOLOGICAL SEMINARY**

**ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT**

**MKSD PROJECT NO. 09.102**

**Recommendations by Priority**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Recommendation</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medium</td>
<td>Provide additional site identification signage</td>
<td>$6,000.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Provide specific entrance signage on</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Schedule replacement of membrane roofing</td>
<td>$25,500.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Replace all windows around flat roof area</td>
<td>$9,500.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Replace north and east entrance doors</td>
<td>$7,500.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Weatherize all exterior doors</td>
<td>$2,450.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Replace/repair exterior stucco finish</td>
<td>$28,800.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Consider sustainability goals for mechanical, electrical &amp; plumbing systems</td>
<td>$0.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Provide natural light to all classrooms</td>
<td>$2,000.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Provide weather protection at entry locations with canopies</td>
<td>$65,000.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Replace corridor lighting to eliminate dark areas</td>
<td>$26,700.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Repair flashing on Lenox House chimney</td>
<td>$800.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Replace Lenox House windows</td>
<td>$12,760.00</td>
</tr>
<tr>
<td>Medium</td>
<td>Weatherize all exterior doors</td>
<td>$700.00</td>
</tr>
</tbody>
</table>

**Total Cost** $185,210.00
OBSERVATIONS and RECOMMENDATIONS

Costs

- Centralize Seminary program into one location

Note:
Low recommendations should be completed within 5 years.

### MORAVIAN THEOLOGICAL SEMINARY

**ACADEMIC PROGRAM/SPACE UTILIZATION & BAHNSON CENTER FACILITY AUDIT**

**MKSD PROJECT NO. 09.102**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Recommendation and Cost Implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Reevaluate existing security access system for usability, $10,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Revaluate locked building hours to align with class schedules, $0.00</td>
</tr>
<tr>
<td>Low</td>
<td>Consider providing an alternate fuel source, $0.00</td>
</tr>
<tr>
<td>Low</td>
<td>Install vestibule at North entry door, $6,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Replace carpet, $28,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Upgrade window treatments, $6,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Provide a coffee/microwave cooking area in Student Lounge, $2,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Remove old unused furniture, $500.00</td>
</tr>
<tr>
<td>Low</td>
<td>Provide additional site identification signage, $2,000.00</td>
</tr>
<tr>
<td>Low</td>
<td>Reevaluate existing security access system for usability, $0.00</td>
</tr>
</tbody>
</table>

**Total Cost** $54,500.00

**Total Cost for All Recommended Work** $713,610.00