Columbia – St. Mary’s Campus
Feasibility Study

University of Wisconsin – Milwaukee
Project Number 03H2M

EXECUTIVE SUMMARY
PROJECT OVERVIEW

This study was commissioned on behalf of the UWM campus to determine the feasibility of acquiring the Columbia Hospital Campus (Columbia), which is currently owned by the Columbia – St. Mary’s Hospital organization (CSM). CSM operates two facilities on Milwaukee’s East Side and is involved in a multi-year plan to consolidate all in-patient and clinical functions in its location near the intersection of North Avenue and Lake Drive. This consolidation is scheduled to be complete by 2008-2009 and at that time the Columbia Campus will be vacated and available for purchase.

Columbia Hospital is a unique property due to its size, proximity to UW-Milwaukee and its institutionally oriented buildings. The questions posed in this feasibility study include the degree of usefulness of the buildings on the site, the quality of the match between available spaces and campus needs, and the cost of converting the buildings for use by UW-Milwaukee.

The study concludes that at the right purchase price, Columbia would be a valuable addition to UW-Milwaukee’s campus.

Columbia Facts:
- 10.9 Acres
- 828,000 GSF
- Parking structure with 788 spaces, additional 174-space surface parking
- Cost to renovate for use by UWM estimated at $81.7M (2004 dollars)
Critical Space Concerns at UWM

- **Lack of Available Real Estate**
  The UW-Milwaukee Campus has utilized all sizeable building sites within its existing boundaries and now finds itself at a crossroads where further development is needed and desired. Due to the urban nature of the UW-Milwaukee campus, residential development has occurred along each of the campus’s borders with the exception of the CSM Complex. Obtaining a sizeable piece of real estate for future development from individual homeowners could prove to be a difficult and costly process.

- **Lack of Available Space**
  Current space requests by over 50 departments total over 475,000 ASF of academic and student support space. The campus lacks space for any kind of expansion by current departments, as well as, swing space for temporary locations of departments that need to be renovated.

- **Multiple Departmental Venues and Overcrowding**
  Student Services are crowded into multiple locations. Consolidating Student Services would provide a “one stop shopping” experience for students and would allow sharing of resources among these administrative departments.

- **Lack of Parking**
  Only 2,500 parking spaces are currently available for over 28,000 students and employees. The “Partnership for Change” study recommended in 2003 that the campus should add at least 1,000 additional parking spaces to satisfy its current traffic volume. These new spaces are recommended in addition to the innovative alternative parking and transit partnerships that the campus continues to use and develop.

- **Lack of Student Housing**
  There were over 4,100 unfilled housing applications for 2004-2005. These applications represent students who would like to live on campus but cannot be accommodated. Such students often choose to live close to campus in private rental housing.

Benefits of Acquiring Columbia-St. Mary’s Campus

- Currently this is the only opportunity to significantly expand the physical boundary of the campus.
- Allows UW-Milwaukee to develop adjacent to the existing campus.
- Opportunity to reduce future capital costs for renovating, replacing, and finding surge space for the existing UW-Milwaukee campus.
- Allows for consolidation of Departments such as Student Services.
- Opportunity to increase the parking capacity with existing facilities and lessen the burden on neighborhood streets.
- Allows UW-Milwaukee to expand its housing facilities in a cost-effective manner and establish them adjacent to their existing Student Housing.
Project Overview

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1. **Project Goals**

The intent of this project is to study and evaluate the possible benefits and implications of an acquisition of the Columbia Hospital Campus. The study is to include determining the highest and best use of the Columbia facilities for UWM, providing appraisals for such uses, and planning level cost estimates and timeframes for a possible future construction and remodeling projects. This pre-design planning study will potentially allow UWM to move forward with a funding request for the 2005-2007 University of Wisconsin System Capital Budget to proceed with design and construction bidding documents. Funding would be requested in the 2007-2009 Capital Budget and the subsequent biennia for the acquisition and remodeling of the facilities.
Project Process and Team Members

The consultant team incorporated and analyzed the following information to assess the feasibility of acquiring the Columbia Campus:

- Existing Conditions Assessment
- University’s Program Needs list
- Interviews with leaders of departments on the Program Needs list and tours of their current spaces on campus
- Visioning sessions with Steering Committee made up of Campus, UW System and Division of State Facilities representatives
- Neighborhood listening session
- Independent Property Appraisals

The Project Management Team for the State was made up of Campus, UW System Administration, and Division of State Facilities representatives.

The consultant team was made up of representatives from several segments of the design and construction industry: architects, landscape designers, structural, civil, mechanical and electrical engineers, contractors, and developers.

Architect/Team Leader:
Hammel, Green and Abrahamson, Inc.

Structural, Mechanical and Electrical Engineer:
Graef, Anhalt, Schloemer & Assoc., Inc.

Plumbing and Fire Protection Engineer:
PSJ Engineering, Inc.

Landscape Architect:
JJR, LLC

Cost Estimating:
Hunzinger Construction Co.

Development Consultant:
Prism Development Company
Existing Conditions Assessment

Process
The consultant team performed an assessment to develop a general overview of the existing conditions present at the CSM Columbia Hospital campus. The assessment is based on walkthroughs of the existing campus and reviews of documents received from CSM staff. The assessment covered architectural systems such as structure, exterior enclosure, conveying and interior finishes; mechanical, electrical and fire protection systems; utility infrastructure; and site elements such as surface parking, grading and walks. A Facilities Condition Report (FCR) that details these findings is attached as Appendix B.1.

Testing for the presence of asbestos and other hazardous materials on campus was performed independent of the assessment by Graef, Anhalt and Schloemer Engineers, See Appendix B.4.

Background Information
The campus is located at the intersection of Hartford and Maryland Avenues in Milwaukee, Wisconsin. It is bordered on the south and east sides by the campus of the University of Wisconsin – Milwaukee and on the north and west sides by an established residential neighborhood. The land area of the CSM campus is 10.9 acres. The campus is made up of structures built between 1919 and 1993, which range in height from one to eight stories. The oldest buildings are along Maryland Avenue, while the newer buildings were primarily developed in sequence to the west. The seven campus buildings include in-patient areas, out-patient clinics, administrative and support areas, a 100-bed dormitory, a central steam plant and a 700+ space parking structure. The total area of the buildings (not including the parking structure) is approximately 828,000 gross square feet.
Existing Conditions Findings

The buildings are generally in good condition for their respective ages due to the Hospital's ongoing maintenance program.

Following are descriptions of several locations or systems requiring special note:

a. Parking Structure

Originally built in 1973, the parking structure was given a major overhaul in the early 1990s to repair deteriorated structural elements. These repairs significantly extended the useful life of the structure. The Facility Condition Report outlines maintenance items that need to be undertaken to continue to extend the life of the structure. Costs for these maintenance items have been included in the project estimates.

b. Fire Protection System

The existing complex is not fully sprinklered. A fire suppression system would need to be extended to all renovated areas. Costs for this extension of service are included in the project estimates.

c. Air Handling and Distribution

The existing hospital functions in the complex are run on 100% outdoor air, meaning that all air circulated must be heated from its outdoor temperature and then exhausted after one use. The University’s program functions do not require 100% outdoor air. The consultant team studied the operating costs of maintaining such a system versus the renovation costs to change to a more suitable system and recommended the latter. Costs for this renovation are included in the project estimates.

d. Steam and Chilled Water

Although the CSM Energy Center boilers provide adequate steam for the complex and could continue to be used, the consultant team studied options for linking the CSM campus with the University’s central steam and chilled water system. The University’s Central Plant has excess capacity to serve the CSM campus complex with both utilities. Because the University’s tunnel system crosses through the intersection of Maryland and Hartford, costs to link the two systems are reasonable. Therefore, the recommended scheme eliminates the CSM Energy Center in favor of a combined system powered by the University’s Central Plant. This solution avoids the staffing duplication necessary to run two plants.
University Program Needs

The University prepared an initial program document for use in the study. This Program was based on the nearly 475,000 ASF of academic and student support space that is currently being requested by over 50 departments. Also included in the program was a Residence Life Component in response to the large number of requests for housing that the University is unable to accommodate (4,100 applications were unfilled in 2004-2005).

The University’s program needs fall into five major categories:

- Create a consolidated and recognizable home for academic programs in the Health Sciences.
- Create a Student Services “Main Street” by consolidating these administrative functions.
- Create a Residential Life community with its own recognizable, secure entrance.
- Create additional classrooms to respond to overcrowding and heavy scheduling in the campus’ current classroom resources.
- Other academic and research space. This category is made up of departments that are somewhat smaller than Health Sciences, lack adequate expansion room in their current location and/or are located next to a department on campus that also needs to expand.

Priorities

The Program list was divided by the University into A, B and C categories reflecting a descending order of priority. Priorities were assigned based on the relative needs of each department.

The following spreadsheet lists each of the programmatic elements identified along with their funding sources and the range of square footage required.
# UWM Space Use Program Summary

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**Total** | 620,000 | 783,000 | 1,239,100 | 1,576,500

### ABBREVIATIONS
- **PR** Program Revenue
- **GPR** General Purposes Revenue
- **ASF** Assignable Square Feet
- **BGSF** Building Gross Square Feet
Community Input

The University sponsored a Community Information and Input session at the Lake Park Pavilion on May 27, 2004. The intent of the meeting was to link ongoing discussions between the University and the Neighborhood Associations to a specific process of involvement for the potential purchase of the Columbia Hospital site. The University intends to continue meeting with representatives of the Neighborhood Association as the project proceeds.
At this meeting, participants identified the following as important issues:

1. Neighborhood involvement in the process
2. Buffers between existing residential areas and CSM property and support for owner-occupied housing
3. Off street parking with noise and light control
4. Acknowledged that purchase of the site by the University would have different impacts on each Neighborhood Association
5. Compare effect of purchase to current status on Noise, Parking, Traffic and Security – above all, do no harm
6. Urged University to be innovative, consider approaches such as a health or physical therapy clinic for the community on the site
7. Additional on-campus student housing perceived as a drawback to the purchase, asked that faculty or graduate housing be considered in lieu of student housing
8. Supported improvements in the academic facilities on campus
9. Asked that the University communicate plans and options for growth/no-growth of the campus
Criteria for a Successful Plan

Criteria for evaluation of the Space Use Options were developed during a Visioning Session with representatives from the Campus, UW System Administration, and the Division of State Facilities. The criteria are:

- **Flexibility**
  The plan must be flexible over time.

- **Balanced Funding**
  Program should balance use between Program Revenue funded elements (housing and parking) and General Revenue funded elements (classrooms, academic departments) so that Program Revenue is the primary funding source for the project for both initial purchase and renovations/repairs leading to initial use.

- **Minimal Neighborhood Impact**
  Attributes identified to minimize impact include keeping new development away from the perimeter of campus facing the neighborhood, maintaining the height/volume of the existing College of Nursing Building, and increasing availability of on-campus housing.

- **Programmatic Fit**
  The plan must meet the minimum program requirements of:
  - Provide Student Housing.
  - Provide at least the same number of parking spaces currently at CSM.
  - Satisfy the needs of the Student Services and Health Science portions of the program.

- **Fluid Circulation**
  Facilitate pedestrian/auto traffic movement, minimize traffic conflicts and accommodate natural student pathways by integrating CSM into the UWM campus with easy and direct access paths.
Space Use Options

Space Use Strategies

The Space Use planning process was based on analysis of two information streams: the University program and the condition and nature of the existing facility. Space use planning began by creating a “Space/Building Fit Matrix” on which the team evaluated the suitability of each physical area of the CSM campus for use by each of the University’s program spaces. The fit criteria were established as follows:

1. Location within complex meets level of public or private access required.
2. Existing configuration of space can be readily converted to intended use.
3. Floor plate configuration allows efficient placement of program area.
4. Available space is large enough to accommodate desired program.
5. Existing infrastructure supports intended use.

Each “Space/Building Fit” combination was ranked from “Excellent” to “Poor” based on the number of criteria points that were met. The resulting matrix (below) focused attention on excellent fits for certain functions in certain areas of the CSM campus and clearly eliminated consideration of others. The matrix also illuminated certain buildings on the CSM campus that offer a great range of uses and others with more limited potential. This information provided a road map for the team in generating initial space use concepts.

See Appendix C.1 for Full Matrix
A range of initial space use concepts was developed to illustrate low, medium and high levels of intensity of investment in the property. The “low” approach was to maximize reuse of the existing buildings, “medium” included some demolition and replacement of the less functional or flexible CSM structures, and “high” included more extensive demolition and replacement of less functional or flexible structures. Two variations of each of these approaches were investigated: one to maximize the number of dormitory beds provided and the other to maximize the amount of University administrative and academic programs accommodated.

Under the established criteria, Scheme A.1 was selected for further review. Elements of Scheme A.1 are:

- Reuse of nearly all of the existing structures
- Addition of new entry points on the east and south for better linkage to UWM campus
- Reconfiguration of the surface parking areas and removal of the Energy Center to create a green link to Maryland Avenue and Sandburg Towers to the east
- Creation of a new entrance for the Health Sciences at the southwest corner
A.1 MAXIMIZE RE-USE:
MAXIMIZE BEDS
(coordinates with Site Concept Diagram A)

- STUDENT LIFE
  - 993 beds, 364,759 GSF
    (goal 600 beds, 270-363,000 GSF)

- MAIN STREET
  (Student Services/Classrooms)
  - 202,850 GSF
    (need 182-254,000 GSF)

- HEALTH
  - 194,384 GSF
    (need 186-228,000 GSF)

- SUPPORT SPACE
  - 74,785 GSF
    (need 42-62,000 GSF)

- PARKING
  - 750 structure spaces, 252,500 GSF

- "B" LIST
  - Accommodated on existing campus
    (need 250,000-320,000 GSF)

- "C" LIST
  - Accommodated on existing campus
    (need 256,000-312,000 GSF)
Financial Analysis

Process for Approvals and Purchase
The 2005-07 University of Wisconsin Biennial Capital Budget will request authority to plan and to purchase the Columbia-St. Mary’s Complex. Funding for the purchase of the property would be made available in the 2007-09 Biennial Capital Budget.

Property Appraisals
The consultant team solicited two independent property appraisals. The appraisal reports are not attached to this Feasibility Study and will be held in confidence pending purchase negotiations between the State and Columbia-St. Mary’s.

Benchmark comparison of value
In order to determine the maximum price which could be paid to acquire the property without the cost of acquisition plus the cost of renovation exceeding the cost of developing buildings of equivalent utility to a renovated Property (the “Benchmark”), the cost of developing the Benchmark was estimated. The difference between the cost of the Benchmark and the cost of purchase and renovation of the Property is the price at which the State is indifferent to purchasing the Property and developing the Benchmark. The result of this analysis will be held in confidence pending purchase negotiations between the State and Columbia-St. Mary’s.

Costs of renovation and construction
The overall project costs of renovation and construction are estimated to be $81.7 million, in 2004 dollars. This estimate includes:

- Renovation Costs
- Construction Costs
- Professional Service Fees

The cost of acquiring the property is not included in this estimate. The budget estimate summary is attached as Appendix D-1.

Funding Sources
The costs of renovation and construction were determined by funding source, with housing and parking considered program revenue (“PR”) uses, and health services and student services/classrooms considered general purposes revenue (“GPR”) uses. As certain costs benefit both PR and GPR uses, such costs can be allocated by using a ratio of PR and GPR floor area in the single use areas. If common costs are allocated according to floor area, the costs of PR uses and GPR uses are 52% and 48% respectively. If it is assumed that the GPR uses are added after the PR uses are completed, then approximately 62% of the costs are for PR uses and 38% for GPR uses.
Concluding Statements

Based on the research conducted for this study, the acquisition of the Columbia-St. Mary’s Hospital Complex is a unique opportunity for UW-Milwaukee to expand at its present location. As the project progresses, listening and dialogue sessions with Neighborhood representatives will continue to ensure that this project respects and benefits the surrounding community as well.
EXISTING CONDITIONS

The purpose of the Facilities Condition Report is to provide a general overview of the existing conditions present at the current hospital complex, forming the basis for a Feasibility Study examining the potential benefits and implications of a future acquisition by UW-Milwaukee.

The conclusions in this Facilities Condition Report are based on walkthroughs of the existing campus and reviews of documents received from Columbia-St. Mary's (CSM) staff. CSM provided various construction documents, a 1997 Facility Report prepared by Space Diagnostics, the Hospital's 1996 JCAHO Statement of Condition, as well as, various maintenance logs and reports. Information was also gathered from discussions with CSM staff including the Manager of Architecture & Construction Services and the Lead Maintenance/HVAC/Grounds for Plant Engineering.

Testing for the presence of asbestos and other hazardous materials within the CSM complex was conducted. The results can be found under Appendix B.4.

Buildings will be referenced according to Diagram 1a below.

Diagram 1a
Columbia-St. Mary’s Campus
1. Existing Buildings and Site

The Columbia St. Mary’s campus under study for this report is located at the northwest intersection of Hartford and Maryland Avenues in Milwaukee, Wisconsin. It is bordered on the south and east sides by the University of Wisconsin-Milwaukee, and on the north and west sides by an established residential neighborhood.

The campus consists of structures built between 1919 and 1993, and range in height from one to eight stories. Each building has a red brick masonry exterior, except for a partially stone-clad addition to the School of Nursing. Architectural styles include federal revival, international, post-modern, and modern.

The buildings are generally in good condition, due to an extensive and ongoing maintenance program implemented to provide the fullest use and longest possible life of the buildings. The Columbia Hospital Roofing Survey issued by FJA Christiansen Roofing Company, Inc., and referenced in Appendix F, is evidence of such maintenance.

All of the structures on the south half of the campus are physically connected and linked by a common corridor running the length of the complex from east to west. This complex of buildings serves as the main hospital and is linked by skywalk to the parking structure. The first Columbia Hospital building stands at the southeast corner of campus. Subsequent additions were made to the west. The hospital operates an emergency room, clinics, medical labs, physicians’ & administrative offices, and a pharmacy. Other functions include a nursing school, kitchen & cafeteria, and an auditorium. A 700+ car parking structure and surface parking lots service the complex.

2. Summary of Site Characteristics

The site generally slopes down from east to west, informing a first floor of the main hospital complex accessed at grade at the east with a ground floor below, and grade access to the ground floor at the west with a basement floor below.

Site work within the CSM campus is comprised of paved areas for circulation, site walls and stairs that provide access and delineate spaces, storm water management structures that drain the site, and plant material and amenities that add to the site’s aesthetic character. In general, most site work present on the CSM campus has been well maintained and the site presents a high-quality image to neighbors and visitors. Notable exceptions to this are some instances of failing retaining walls and pavement cracking in some vehicular and pedestrian areas. Specific locations and descriptions of these examples, along with representative photos are described and illustrated in Section Two.
3. Summary of Architectural Elements

Architecture

Columbia-St. Mary’s Campus originated with a single 40’ wide by 120’ long, 5-story building at the corner of E. Hartford Avenue and N. Maryland Avenue. Subsequent additions to the hospital were made in like fashion with narrow patient room buildings stretching toward Hartford Avenue, parallel to the original hospital. Service functions such as the laundry and kitchen were added to the rear.

In need of space and support, the hospital grew to the west with the addition of the “West Wing”, a “T” shaped bed tower rising over lower levels of service and support. Specialty hospital functions grew into a new Clinical Building, further to the west. Office demand filled a medical office tower north of the Clinical Building. The complex is balanced with a 700+ space parking structure in the northwest corner of campus; the College of Nursing at the northeast corner of Newport Avenue and Maryland Avenue; and the Energy Center nestled between the College of Nursing and the East Wing, fronting Maryland Avenue.
4. Summary of Structural Systems

The exterior walls of the complex are typically constructed of brick masonry with decorative elements of brick and limestone. The exterior walls of Building One - East Wing, Building Two - West Wing, Three - Clinical Building, Building Four - Medical Arts Tower, and Building Seven - Energy Center are generally in good to fair structural condition. The exterior walls of Building Five - Parking Garage and Building Six - College of Nursing are generally in fair to poor structural condition. Areas of the Building One - East Wing, Building Two - West Wing, Building Five - Parking Garage, Building Six - College of Nursing and Building Seven - Energy Center are in poor structural condition. Poor structural conditions are detailed in the body of this report.

Good structural conditions are average to above-average for the materials or systems evaluated, with consideration of its age, design, and geographical location. Generally, no work is recommended or required other than normal maintenance common for brick masonry walls, such as the repointing of mortar, and the sealing of control joints and window/door perimeters.

Fair structural conditions are average for the materials or systems evaluated. Some work is required or recommended, primarily due to the normal aging and wear of the building system, to return the material or system to a good structural condition. This would include the small-scale replacement of cracked masonry or spalled bricks. Please note that routine maintenance appears to have completely closed or sealed masonry joints at locations of embedded steel angles over windows (lintels) and steel angles along floor lines (relief angles). As such, without provisions for the drainage of internal water, the corrosion (rusting) of these concealed steel elements is not detectable by the exterior visual examination employed unless gross visible distress is present. The replacement of lintels would be considered a fair structural condition, while the replacement of relief angles would be considered a poor structural condition as noted below.

Poor structural conditions are below average for the materials or systems evaluated. Significant work is anticipated to return the materials or systems to an acceptable structural condition.

5. Summary of HVAC Systems

Due to the multiple additions, several remodeling projects and specialized occupancies the HVAC systems are widely diverse in sizing, arrangement, design and operation. The systems appear to be code compliant with codes in effect at the time of the construction and appear to have ample capacity to satisfy the proposed occupancy.

Overall the HVAC systems appear to be in good condition due to the ongoing maintenance program of the current Owner.

Due to the specialized occupancies encountered in hospitals some of the systems are arranged with 100% outside air supply air with 100%
exhaust and no return air. Educational and residence occupancies do not require this quantity of outside air. In light of energy efficiency it is not recommended to reuse these systems for the proposed occupancies.

The major components of these systems have varying median service life expectancies of 23 years for water chillers, 25 years for centrifugal fans, 20 years for water and steam coils, 20 years for cooling towers and air cooled condensers, 20 years for air terminal units and 25 years for boilers. Once operating equipment reaches its median service life the Owner should anticipate lower operating efficiency and increasing maintenance/repair costs.

6. Summary of Electrical Systems

The electrical installation for the buildings on the campus was in compliance with the electrical code at the time of construction and again during the updating of several of the buildings. Current use could be continued for all of the buildings on the campus, remodeling of buildings would require various changes to be made to meet current codes.

Because the distribution voltage within the campus was changed from 3810 volts to 4160 volts in 1985, none of the 4160-volt transformers is older than that.

The criteria used in the sizing and selection of the equipment components allows for considerable expansion and long life. For example, with the exception of transformer L-1, one of the West Wing (Building Two) feeds which is operating at near capacity; the power transformers observed were carrying a very small load current, typically 25-50% of transformer capacity, which would allow the transformers to operate with a very low winding temperature thus extending transformer life. Transformers are designed for a 20-30 year life at rated temperature (130°C for oil filled and 220°C for dry type transformers) and their life can be doubled for each 10°C that the operating temperature is reduced.

The security system is new and updated regularly. It consists of card readers located at entries and cameras located at the loading docks, parking lots, birthing area and emergency admissions. They are all tied into the computer system, are monitored at the security station, and can be used for ID and after hours locking and admittance.

7. Summary of Plumbing Systems

Domestic water service for the buildings on the campus was in compliance with the plumbing code at the time of construction. Due to the nature of the facility, the size of the incoming pipes have adequate capacity to serve the current building use. The domestic water is distributed throughout each building to accommodate the various needs of the facility. The domestic water service consists of cold water (CW), hot water (HW) and hot water return (HWR) to a varying degree in each building. Density of the service is high in the hospital and dormitory portions of the campus. In the office and general areas of the campus the coverage would be considered satisfactory.
Sanitary service for the buildings on campus was designed to meet the plumbing code at the time of construction. Due to the nature of the facility, the size of the pipes servicing the facility have adequate capacity to serve the current building use. Once again due to the existing nature of some buildings on the campus, sanitary coverage for individual floors is dense. These areas include patient rooms and the dormitory areas. While in other areas, such as the offices and general usage areas, the coverage is considered acceptable.

Storm water service for the buildings on campus was designed to meet the plumbing code at the time of construction. Roof drainage is carried down to the lower level of the buildings, then out of the buildings into the City of Milwaukee combined sewer system.

Medical gas services for the buildings on campus were designed to meet the State of Wisconsin code at the time of construction. Medical gases flow throughout the facility where required. Due to the nature of the service, the density of the piping is high in patient areas.

8. Summary of Fire Protection Systems

The existing building consists of a series of additions, wings or phases that were constructed over a period of time. The result is a building that consists of areas that vary in degree of fire protection. In general, the fire protection system consists of a wet sprinkler system with standpipes, fire pumps and pre-action systems for select areas.

The existing fire protection has been well maintained. Its history consists of mainly minor maintenance items with little or no major repairs. The water service and fire pump is adequately sized. The mains and risers are all in good condition and are sized correctly.

There is concern of the pressure rating of the fittings and couplings especially at the lower levels when the fire pump is tested at 150% load at churn (no flow). Based on the observed pressure readings in the basement, the 150% test would exceed 225 psi, which is beyond the design capability of the Victaulic 75 lightweight coupling. Although, in the interview with the maintenance engineers, they indicated there have been no problems to date. A modified fire pump testing procedure could eliminate this issue.

Because the existing sprinkler system is incomplete (not a fully sprinklered building) complete renovation of the existing zone piping would be recommended. The existing suspended sprinkler mains and branches would interfere with the demolition and construction of new architectural layouts, mechanical and electrical systems. The connection of the new sprinkler zones could easily be made to the existing risers and standpipes.

The Class II fire hose cabinets and piping should be abandoned.
9. Summary of Voice and Data Systems

From an operational perspective, all voice and data topology is sufficient for present needs. Network cabling is Category 5. Network backbone is protected by stand-alone UPS units and is comprised of fairly recent hardware. Cabling for voice is plentiful for the existing campus size and points of cross-connect are very accessible. Fiber has been provided to each building with proper interduct and termination units.

In terms of deficiencies, network cabling throughout the Columbia/St. Mary's campus is incomplete and does not follow standard or good practice design and installation. There exists no centralized UPS backup for network backbones. Network riser/patch closets are cluttered and disorganized. Network cables are often not properly strain-reliefed. Network horizontal cabling is minimal Category 5 and is nonexistent in several rooms, floors or areas. Voice cabling is primarily Category 3 and its distribution does not flow adjacent to network riser closets. Future tenants will need to expand network horizontal cabling extensively and reorganize network riser closets. Future tenants may also require consolidation of data and voice riser closets. Primary service entrance for SBC/Ameritech lines/demark is located along with existing PBX equipment in the basement of Building One (East Wing, "1917"). Although sufficient infrastructure for voice cross connects exists here and throughout the CSM campus, future service entrance upgrades may be required.

Presently, the Columbia/St. Mary's campus server room is located in the ancillary basement between Buildings One and Two (East and West Wings, "1917" and "1966"). There is a raised floor, but space is somewhat limited. Future tenant may require the expansion of this room.
The intent of this project is to study and evaluate the possible benefits and implications of an acquisition of the Columbia Hospital Campus. The study is to include determining the highest and best use of the Columbia facilities for UWM, providing appraisals for such uses, and planning level cost estimates and timeframes for a possible future construction and remodeling projects. This pre-design planning study will potentially allow UWM to move forward with a funding request for the 2005-2007 University of Wisconsin System Capital Budget to proceed with design and construction bidding documents. Funding would be requested in the 2007-2009 Capital Budget and the subsequent biennia for the acquisition and remodeling of the facilities.

1. **Description of Design Strategy**

   The Scheme selected for further development was chosen because it demonstrated the maximum degree of re-use and the greatest capacity at a low financial commitment level. In addition, this scheme met many of the major design criteria that were identified at the beginning of the process, such as:

   - **Reuse**
     Reuse the existing buildings and their existing interior elements to the greatest extent possible
   - **Fit**
     The programmatic elements identified by the University must fit the available area and volume of the existing buildings within the complex.
   - **Financial Commitment Level**
     The design must be cost effective such that it makes sense to reuse the buildings already available within the complex.
   - **Consolidation of Programmatic Elements**
     Consolidate like uses, services, and departments into one general area for ease of function by staff and use by the campus community.
   - **Identity of Elements**
     Provide a unifying identity for the College of Health Sciences, a high priority program element.
   - **Hierarchy of Entrances**
     Provide a clear Main Entrance to the complex on the east side facing Maryland
     Provide a separate and securable residential entrance
• **Main Street**
  Provide a clear “Main Street” for Student Services functions

• **Connectivity**
  Create linkages between the CSM complex and the rest of the UWM campus, especially Student Housing.

• **Parking**
  Provide the same number of structured and surface parking spaces as in the existing CSM campus

• **Green Space**
  Create a significant area of green space on this quadrant of the campus.
The recommended Scheme meets these design criteria by implementing the following:

- Creation of a more prominent entrance to the western end of the facility, located on the Ground Floor facing Hartford Avenue. This entrance is in the location of the former ambulance drop-off. This entrance will be a primary identifier for the Health Sciences.

- Creation of a residential entrance on the south side of the complex, facing Hartford Avenue. This entrance will be augmented by a one-story addition housing lobby and support functions. This entrance will create a needed entrance on the side of the buildings facing Hartford, which currently is the “back” of the CSM complex.

- Removal of the one and two-story structures on the north side of the East Wing, and replacing them with a new two-story entrance element. This entrance piece will also house a cluster of modern classrooms.

- Reuse of the existing College of Nursing dormitory in its current form with the addition of a new stair and elevator tower. Rooms that are now occupied would be maintained.

- Removal of the Energy Center and linkage of the CSM campus to the UWM steam and chilled water systems via a tunnel extension.

- Reconfiguration of the surface parking lot at the current north entrance to allow greater pedestrian access from the UWM campus.
• Creation of a 12’ wide east-west corridor throughout the complex on the Ground and First Floors. This corridor will be the “Main Street” of the complex and will organize all of the Student Services functions and entrances to the academic and residential functions.

• Required renovation and addition to the College of Nursing Dormitory to re-open upper level dormitory rooms that are not currently in use due to the needed repairs and required code improvements.
• Reuse of the majority of the in-patient hospital rooms as dormitory housing. These rooms will convert with minor renovation to be serviceable two-person rooms with bathrooms. The West Wing Patient rooms shown below are an example of this.

![Diagram showing reuse of West Wing inpatient beds as Student Housing](image1)

• Creation of suite-style housing in areas where more than minor renovations would be required. These suites would be created in the current Labor/Delivery/Recovery suites on the third floor of the Clinical Building, as well as, in the current patient rooms on the second through fifth floors of the East Wing.

![Diagram showing reuse of the Clinical Building for Student Housing](image2)
2. Recommendations for Implementation

A. Site Work

In order to transition from a hospital campus to an active part of the UWM campus, several areas of the site are recommended for modification. These modifications are intended to improve internal pedestrian and vehicular circulation, to respond to proposed interior uses and entry/exit points, to add green space to this area of the campus and to provide logical connections to other parts of the UWM campus. Recommendations for site improvements are listed as follows:

1. Vehicular Area Paving - Several paved areas of the site are recommended to be reconfigured to allow for improved circulation and parking based upon the expected uses by UWM and to allow for the creation of green spaces and building entry plazas. While these recommended changes reconfigure several existing parking areas, the total surface parking capacity is planned to exceed the current parking capacity of 174 spaces by three spaces.

   • The Upper Parking Area - It is recommended that the upper parking area that is accessed from Newport Avenue be reconfigured to eliminate the existing large drop-off area as a means of creating a pedestrian corridor. The driveway currently located between the energy center and the College of Nursing would be eliminated and converted to green space or a paved plaza area.

   • The Lower Parking Area – It is recommended that the parking and entry area along E. Hartford Ave. be reconfigured to respond to the enclosure of the ambulance drop-off and parking access control fixtures be removed.

   • All Existing Parking Areas - Existing paved vehicular areas that are to remain are recommended for maintenance due to degradation that is described in the Facility Conditions Report (Appendix B.1)
2. Walks and Special Exterior Paved Areas - As the UWM campus is primarily a pedestrian-oriented campus, walks and special exterior paved areas that tie into existing pedestrian patterns are of great importance. Recommended improvements to pedestrian circulation areas include:

- By removing the Energy Center and reconfiguring the parking and drop-off area along Newport Ave. a linear green space or plaza will be created that serves as the primary circulation spine connecting pedestrians to the parking garage, major building entries, Maryland Ave. and the Sandburg Residence Hall complex.
- Upgrades to the courtyard areas between the East and West wings are recommended so that an improved north-south pedestrian linkage can be created.
- Improvements to major building entries are recommended and should respond to the proposed interior uses of each building. These entrances should include special paving and site furniture that distinguishes each area as a featured entry.

3. Site Walls and Stairs - Several site walls and staircases require repair or replacement as noted in the Facility Conditions Report. One significant wall replacement that should be noted is the need to replace the retaining wall separating the upper parking area along Newport Avenue from the parking garage entry drive.

4. Site Surface Drainage - Site surface drainage is currently collected by surface inlets that form several drainage zones within the CSM complex and is carried to the City of Milwaukee combined sewer system. While the reconfiguration of parking areas, pedestrian circulation areas and minor building footprint changes will require some modification to this system, no major changes are recommended.

5. Landscaping – Currently, the CSM campus is appropriately landscaped and well maintained. It is recommended that as this study is implemented, the landscaping be redesigned as needed to buffer neighborhood views, enhance primary pedestrian routes, building entries, and gathering spaces. Along with shade and ornamental trees, flowering shrubs and perennial beds are recommended at building entries and primary pedestrian areas. Elements such as site furniture (benches, trash receptacles, light fixtures, bike racks, etc.) should be chosen so as to complement those currently being used on the UWM campus.
B UWM Campus Infrastructure

1. **UWM Campus Steam and Chilled Water System** - The existing powerhouse is in good operating condition as are the existing chillers in the building. Facilities engineers from UWM have indicated that there is sufficient steam and chilled water via the campus system to serve this complex. If the powerhouse and multiple chillers are used additional staffing requirements must be included in projected operating costs. There are also concerns with the age of some of the chiller components.

   Scheme A.1 proposes the removal of the power plant and existing chillers, new chilled water and steam lines would be connected from the campus system to points of connection on site into the existing system.

2. **UWM Fire Service** – The type and condition of the Fire Service systems vary from one building to another, however, all are in relatively good condition and were designed to a light hazard classification. Many areas of the complex have been upgraded as renovation projects have been implemented. The recommended scheme would require that all areas be brought up to current code standards for light hazard occupancies.

3. **UWM Electrical**

   The electrical installation for the buildings on the campus was in compliance with the electrical code at the time of construction and again during the updating of several of the buildings. Current use could be continued for all of the buildings on the campus, remodeling of buildings would require various changes to be made to meet current codes.

   The distribution voltage within the campus was changed from 3810 volts to 4160 volts in 1985, therefore, all transformers date from that year.

   The criteria used in sizing and selection of the equipment components allows for considerable expansion and long life.
C. Architectural Elements

1. **Exterior Enclosure** – The existing buildings scheduled for re-use will require some renovation work to improve or restore the integrity of the building envelope.
   - **Brick Envelope** – As noted in the Facility Condition Report, the brick building envelopes will require a continuation of routine maintenance practices along with some patching/replacement of brick at small-scale locations.
   - **Roofing Assembly** conditions vary from one building or phase to another, however, repairs or full replacement will take place throughout.
   - **Window and Door unit replacements** will be essential to restoring the thermal integrity of the building envelope. Again, the age/condition of the units varies widely from one building area to another.

   The cost of these items has been included in the full construction cost estimate found in the Appendix.

2. **Interior Construction** – In changing the use of this building complex, many of the existing interior wall configurations will want to change in order to achieve larger volumes and simplified circulation patterns, therefore, many of the existing interior walls will be removed. Exceptions to this can be found in areas where patient rooms are being converted to student housing.

   It is recommended that new interior walls are constructed of drywall on metal studs with a variety of durable finishes suitable to high traffic academic environments.

3. **Accessibility Updates** - Accessibility updates are of the utmost importance in public academic institutions, who strive to create open and diverse environments to generate greater learning opportunities. Much of the CSM campus is accessible due to the nature of their work, however, there are still many updates that could be completed.
   - Several Building Entrances will have to be modified, most notably, those within the older buildings of the complex.
   - Several Toilet rooms will need to be renovated to meet ADA space, height, and equipment requirements.
• Existing elevators will be renovated as needed and additional elevators will be constructed.

4. **New Construction** - As previously shown, several areas of new construction will assist the University in reusing the existing building complex. Most importantly, the stair and elevator tower to be constructed at the South end of the College of Nursing, as shown at right. These elements of new construction would be clad in red brick to match the other parts of existing CSM Complex and the existing UW-Wisconsin Campus.

D. **Structural Systems**

1. **New Construction** - New framing systems will be required at several additions to the campus. Specific choices of framing materials have not been analyzed for the purpose of this study.

E. **HVAC Systems**

1. **Air Handling and Heat Recovery** - Existing air handling systems currently serving patient rooms and operating suites use 100% outside air supplied to the spaces. The air is filtered using pre-filters and high efficiency filters. It is directly exhausted after the spaces are ventilated. Heat recovery is not used and a return duct system is not installed.

These units and filtration systems are designed to meet hospital air quality standards, which far exceed the proposed use as office, dorm and study centers. The maintenance and operating costs due to the over ventilation and over filtration would be considered excessive for the intended use. Based on preliminary operating cost estimates if the system is updated to meet the proposed use. The new operating costs will be 41% less than current costs. Under Scheme A.1, these updates are made.

2. **Controls** - The existing control system is comprised of both electronic and pneumatic devices. Under Scheme A.1, it is reasonable to have the controls and control logic updated and integrated with the campus building automation system.
F Electrical Systems – Currently, electrical service originates from the Energy Center Building with 4160 volt lines to four remote substations. The recommended scheme calls for the demolition of the Energy Center Facility and reconfiguration / relocation of the utilities that it houses.

At a smaller scale, the electrical installation within the buildings complies with the electrical code required at the time of construction and again during the updating of several building areas. The extent of remodeling called for in the recommended scheme would dictate that all areas be brought up to meet current code requirements.

G Plumbing and Fire Protection Systems

1. Domestic Water Distribution
   - The domestic water piping may require changes in the Student Services/Classroom designated areas by the addition of larger restrooms based on student loads.
   - The Student Life areas to be used for dormitory spaces are now existing hospital rooms. Some cosmetic and/or code changes may be required to these areas.
   - The areas designated for Health Sciences may also require some cosmetic and/or code changes.
   - The Support Space should require the least alterations.

2. Sanitary Piping
   - The sanitary piping may require changes to the Student Services/Classroom designated areas from the addition of larger restrooms.
   - The Student Life areas to be used for dormitory space are now existing hospital rooms. Most of these already have restrooms but some cosmetic and/or code changes may be required to these areas.
   - The areas designated for Health Sciences may also require some cosmetic and/or code changes.
   - The Support Space should require the least alterations.

3. Storm Water Piping
   - No changes are anticipated to the storm water system at this time. Future architectural plans may require altering conductor paths.
4. **Medical Gases**

- Medical gases will no longer be required in college dormitory rooms. However, the medical gases may be applicable in certain classrooms. To comply with codes, selective demolition will be required to remove oxygen pipes, vacuum pipes, valve stations and other medical gases.

5. **Fire Pumps And Standpipes** - The fire protection system and fire pumps are supplied by two exterior water services. One is an eight inch (8") dedicated fire service that is connected to the fire pump. Another service is a combined domestic water service with a four-inch (4") branch that includes a double detector check valve and a connection to the jockey pump. The main fire pump is rated at 75 horsepower, 1500 gpm and includes a transfer switch that is connected to the emergency generator. The water service and fire pump is adequately sized, maintained to a high level and has been tested on a regular basis.

The standpipes are divided into Class I, 2-1/2"valve cabinets in the fire rated stair enclosures with 1-1/2” Class II first aid fire hose cabinets in the corridors. The valve cabinets and hoses are in excellent condition. Changeover to 2-1/2” interior hose valves may be a modification to the system that the Local Authority Having Jurisdiction may require as departments are adopting the policy of evacuating people rather than having hospital personnel attempt to fight fires with fire hoses.

6. **Fire Protection Distribution Piping** - The system is designed to a light hazard classification. The mains and risers are all in good condition and are sized correctly. The pipe system consists of steel pipe, fittings and couplings rated at 175 psi. It was observed that the basement pressure was approximately 170 psi and the seventh floor standpipe pressure exceeded 100 psi.

The sprinklers vary in design from semi-recessed pendant to concealed type. Because of the age of the sprinklers it is questionable if all the sprinklers are of the quick response type that is mandatory today for light hazard occupancies.
There is concern of the pressure rating of the fittings and couplings especially at the lower levels when the fire pump is tested at 150% load at churn (no flow). Based on the observed pressure readings in the basement, the 150% test would exceed 225 psi, which is beyond the design capability of the Victaulic 75 lightweight coupling. Although, in the interview with the maintenance engineers they indicated there have been no problems to date.

Based on the preceding observations, under Scheme A.1 the fire protection system is proposed to use the existing fire pump, standpipes and mains. The project can be rezoned, adding additional flow switches and pressure reducing valves as necessary with replacement of the distribution piping and heads.

**H Voice and Data Systems** – The existing voice and data systems within the CSM complex are sufficient for current needs and fairly complete, however the continuity and organization of these systems is lacking.

Implementing the recommended scheme would provide the opportunity to consolidate, update, and reconfigure portions of these systems.
3. Budget Issues

A. Process for Approvals and Purchase

The 2005-07 University of Wisconsin Biennial Capital Budget will request authority to plan and to purchase the Columbia-St. Mary’s Complex. Funding for the purchase of the property would be made available in the 2007-09 Biennial Capital Budget.

B. Property Appraisals

The consultant team solicited two independent property appraisals. The appraisal reports are not attached to this Feasibility Study and will be held in confidence pending purchase negotiations between the State and Columbia-St. Mary’s.

C. Benchmark Comparison of Value

In order to determine the maximum price which could be paid to acquire the property without the cost of acquisition plus the cost of renovation exceeding the cost of developing buildings of equivalent utility to a renovated Property (the “Benchmark”), the cost of developing the Benchmark was estimated. The difference between the cost of the Benchmark and the cost of purchase and renovation of the Property is the price at which the State is indifferent to purchasing the Property and developing the Benchmark. The result of this analysis will be held in confidence pending purchase negotiations between the State and Columbia-St. Mary’s.

D. Costs of Renovation and Construction

The overall project costs of renovation and construction are estimated to be $81.7 million, in 2004 dollars. This estimate includes:

- Renovation Costs
- Construction Costs
- Professional Service Fees

The cost of acquiring the property is not included in this estimate. The budget estimate summary is attached as Appendix D-1.
E. Funding Sources

The costs of renovation and construction were determined by funding source, with housing and parking considered program revenue ("PR") uses, and health services and student services/classrooms considered general purposes revenue ("GPR") uses. As certain costs benefit both PR and GPR uses, such costs can be allocated by using a ratio of PR and GPR floor area in the single use areas. Alternatively, such costs can be analyzed as incremental costs, e.g., the cost of adding the GPR uses after the PR uses have been completed. If common costs are allocated according to floor area, the costs of PR uses and GPR uses are 52% and 48% respectively. If it is assumed that the GPR uses are added after the PR uses are completed, then approximately 62% of the costs are for PR uses and 38% for GPR uses.

The breakdown of such costs, with common costs allocated by floor area, is:

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<th>Housing</th>
<th>Classrooms/Student Services</th>
<th>Health</th>
<th>Parking</th>
<th>Total</th>
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<td>$14,941,291</td>
<td>$5,767,583</td>
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<td>As % of Total</td>
<td>45%</td>
<td>28%</td>
<td>19%</td>
<td>8%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The breakdown of such costs, assuming that PR space is built first, is:

<table>
<thead>
<tr>
<th></th>
<th>Housing</th>
<th>Classrooms/Student Services</th>
<th>Health</th>
<th>Parking</th>
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<tr>
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<td>55%</td>
<td>22%</td>
<td>16%</td>
<td>7%</td>
<td>100%</td>
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</tbody>
</table>

C. Funding Timelines

In their recommendations for a Columbia Campus Acquisition and Remodeling project for the 2005-07 Capital Budget, in December 2004 the UW System Board of Regents recommended implementation of the project as follows:

- 2005-07: Negotiation of acquisition and preliminary planning to complete a Design Report.
- 2007-09: Purchase of the property and completion of planning for remodeling.
4. Conclusions

At a superficial level it would seem that the acquisition of the Columbia-St. Mary’s Hospital Complex would be an excellent opportunity to gain a significant amount of adjacent real estate in the simplest manner possible due to the residential land lock that the campus finds itself in. However, an acquisition of this size warrants further examination.

As demonstrated in this report, the feasibility study considered many aspects and implications such as programmatic fit, physical condition, logistics, and financial commitment. This study finds that the acquisition of the CSM Complex could be an asset for the UWM Campus on many levels. The acquisition would alleviate the critical space needs that the University Departments are experiencing, consolidate departments into a single venue, create “one stop shopping” for Student Services users, introduce additional on-campus parking to relieve the pressure placed on neighborhood streets, and help fulfill the demand for on-campus student housing.

The selected design strategy achieves the project criteria with the highest degree of re-use of existing resources and minimal new construction, thus making it a cost-effective strategy as well.

Should the project be given the opportunity to progress, the Neighborhood listening and dialogue sessions established during this study would continue to ensure that the project respects and benefits the entire community.
APPENDIX A
EXISTING CONDITION DRAWINGS

Site Plan
3-D Massing Diagram
Basement Level Plan
Ground Level Plan
   First Floor Plan
Second Floor Plan
   Third Floor Plan
Fourth Floor Plan
   Fifth Floor Plan
Sixth and Seventh Floor Plan
University of Wisconsin - Milwaukee Feasibility Study
Columbia-St. Mary's Campus
Existing Spaces Diagram
first level - existing conditions

Columbia St. Mary's
second level - existing conditions

Columbia St. Mary's
fourth level - existing conditions

Columbia St. Mary's
seventh level - existing conditions
APPENDIX B.1
Facility Condition Report
(Under Separate Cover)
APPENDIX B.2
ROOFING REPORT
Columbia Hospital - Roofing Survey

Power House Roof (A, B & C)
- Installed: 1982
- System: BUR
- Condition: Good
- Recommendations: Paint the metal panel roof surfaces, which are rusting as outlined in last 2 years report. Reseal open pipe flanges and recap low pitch pans.

1919 Building (R & M)
- Installed: 1995
- System: EPDM Overlay
- Condition: Fair
- Recommendations: Perform general maintenance. Reseal open corners.

1957 Building (Q)
- Installed: 1995
- System: EPDM Overlay
- Condition: Fair
- Recommendations: Perform general maintenance.

1923 Penthouse & Upper (N, P, Q)
- Installed: 1995
- System: EPDM Overlay
- Condition: Good
- Recommendations: Perform general maintenance.

1923 Lower (S, U, T, V & X)
- Installed: Unknown
- System: Slate shingles and BUR
- Condition: Poor
- Recommendations: Reattach loose slate tile found. Clean debris off of roofs and out of gutters and drains. Repair open corners found on curbs and perimeter flashings.

1931 & 1969 Building (H&L)
- Installed 1997
- System: EPDM Overlay
- Condition: Good
1941 Building (D)
- Installed: 1986 & 1997
- System: BUR & EPDM
- Condition: Fair
- Recommendations: Reseal around open pipes. Replace old patches with new 60 mills EPDM. Three coarse NE open corner. Seal metal cover plate on penthouse. Recap low pitch pans. Perform general maintenance.

1941 Penthouse (E, F & G, I)
- Installed: Unknown
- System BUR & EPDM
- Condition: Fair
- Recommendations: Check for open flashing seams. Perform general maintenance.

1951 Building Upper (J)
- Installed: 1987
- System: BUR over perlite insulation
- Condition: Good
- Recommendations: Perform general maintenance to the upper. Clean off roof of debris. Tuck-pointing required.

1951 Lower North (A)
- Installed: 2000
- System BUR
- Condition: Good
- Recommendations: Clean out drains. Check drain bolts for tightness.
- Tuck-pointing required.

1965 Upper (C)
- Installed: Late 1980's
- System BUR
- Condition: Fair
- Recommendations: Perform general maintenance.
- Tuck-pointing required.

1965 Lower (B)
- Installed: Late 1980's
- System BUR
- Condition: Fair
- Recommendations: General Maintenance.
Columbia Hospital
November 5, 2003
Page 3

1966 North Building Upper & Lower (B, C, D & E)
-Installed: 1985
-System: BUR over Slope to drain Dri-Pac
-Condition: Fair
-Tuck pointing required.

1966 South Building Lower & Penthouse
-Installed: 1985
-System: BUR over Slope to drain Dri-Pac
-Condition: fair

South Canopies
-Installed: Unknown
-System: BUR
-Condition: Good
-Recommendations: Perform general inspection and maintenance to all canopies.

1966 Court Yard (C & D)
Installed: 1990
-System: Mastic coating
-Condition: Fair/Blisters Occurring.
-Recommendations: General Maintenance.
-Replace over next several years budget provided.

1966 South of Court Yard (F, G & H)
-Installed: 1980's
-System: BUR
-Condition: Fair Poor
-Recommendations: Perform general maintenance.

1966 North of Court Yard (A)
-Installed: 1980's
-System: BUR
-Condition: Fair Poor
-Recommendations: Perform general maintenance.
Columbia Hospital
November 5, 2003
Page 4

1966 South Helicopter Roof/Penthouses (E)
- Installed: 1982/1990's
- System: BUR & EPDM
- Condition: BUR under pad; Fair EPDM on penthouse; Good
- Recommendations: Reseal open pipe flashings. Perform general Maintenance.

Please note: See 2001 recommendations. Re-rooﬁng of area under helicopter pad will be impossible without removal of the pad. We recommend you enclose the pad and roof over it. Concrete surface of the pad has numerous cracks in it. This pad should be resurfaced.

1982 – West Main (B)
- Installed: 1994
- System: Ballast EPDM
- Condition: Good
- Recommendations: Perform general maintenance.
- Recoat the ductwork at exit door. Contact your HVAC contractor for this work.

1982 – South & North, East (C, D, E,)
- Installed: 1994
- System: Ballast EPDM
- Condition: Good
- Recommendations: Perform general maintenance.

1982 – West Lower (A)
- Installed: 1994
- System: Ballast EPDM
- Condition: Good
- Recommendations: Inspect all ﬂashing seams for deﬁciencies. Perform general PM.

1982 - Admitting Room South Corridor Between G & F
- Installed: Unknown
- System: BUR
- Condition: Fair
- Recommendations: Clean debris on roof. Perform GM.

1982 - Admitting Room Upper (G)
- Installed: 2000
- System: BUR
- Condition: Good
- Recommendations: None
1978 Building Lower (A)
-Installed: Unknown
-System: Ballast Paver EPDM
-Condition: Poor (Area south of penthouse replaced in 1999)
-Recommendations: Budget for paver replacement. Perform general PM to all seams. Replace broken drain basket cover.

1978 Building Penthouse (B)
-Installed: Unknown
-System: Fully Adhered EPDM
-Condition: Fair
-Recommendations: Reseal open corners and pitch pans. Monitor this roof for flashing shrinkage.

1956 College & Nursing (A, B, C, E & F)
-Installed: Unknown
-System: BUR
-Condition: Fair
-Recommendations: Perform GM.

1956 Lower Canopy (C)
-Installed: Unknown
-System: Modified Bitumen & BUR
-Condition: Good
-Recommendations: Perform GM.

Parking Structure Stairwell Roofs (A, B, C & D)
-Installed: Unknown
-System: BUR
-Condition: Fair –Recommendations: None

Bayview Clinic
-Installed: Unknown
-System: EPDM
APPENDIX B.3
ELEVATOR REPORT
Elevator Condition Survey and Analysis
For:
Columbia - St. Mary's Hospital
Campus Planning Study
Milwaukee, WI

PREPARED FOR:
d’ANDRE WILLIS
PROJECT ARCHITECT
HAMMEL, GREEN AND ABRAHAMSON, INC.
135 W. WELLS, 8TH FLOOR
MILWAUKEE, WI 53203
PHONE (414) 278-3384
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CHICAGO, IL 60603
PHONE (312) 332-5444
FAX (312) 332-5442

BPHOENIX, AZ
BLOS ANGELES, CA
BDENVER, CO
BNORCROSS, GA
BBOSTON, MA
BNEW YORK, NY
BSOUTH CENTRAL, TX
BMADISON, WI
BEDMONTON/ALBERTA,
BMANCHESTER, ENGLAND
BGLASGOW, SCOTLAND
BMWINNEAPOLIS, MN

BCAMPBELL, CA
BSAN JUAN CAPISTRANO, CA
BLAKELAND, FL
BCHICAGO, IL
BBALTIMORE/WASHINGTON,
BPHILADELPHIA, PA
BSEATTLE, WA
BCALGARY, CANADA
BLONDON, ENGLAND
BSEDBERGH, ENGLAND
BPARIS, FRANCE

JUNE 9, 2004
LBA PROJECT NO. 201580
HGA COMMISSION NO. 1190-011-00
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SECTION I - SUMMARY

A. SCOPE

This report was commissioned by Ms. d’Andre Willis, Project Manager, AIA of Hammel, Green and Abrahamson, Inc. (HGA). A site survey was conducted by Tony Tovsen, Senior Project Manager of Lerch Bates & Associates, of twenty four (24) elevators located at the Columbia – St. Mary’s Hospital Campus for the purpose of providing a survey and analysis of the building’s elevator equipment. All elevator equipment was operational for this report.

Otis Elevator Company has been contracted to maintain all vertical transportation equipment located in the building. The current Otis Maintenance Agreement was not available for review. Reportedly the Maintenance Agreement was initiated approximately thirteen (13) years ago and is in effect for an additional seven (7) years with annual price adjustments. This full Maintenance Agreement includes unlimited regular hour call back services.

B. THE PROJECT

EQUIPMENT

Hospital Passenger Elevators
Cars 1-2, Blue

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westinghouse Elevator</td>
<td>Geared Traction</td>
<td>200</td>
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</tr>
</tbody>
</table>

EQUIPMENT

Hospital Passenger Elevators
Cars 3-4, White

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westinghouse Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, 1-5</td>
<td>3500</td>
</tr>
</tbody>
</table>

EQUIPMENT

Hospital Passenger Elevators
Cars 5-6-7, Orange

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-7</td>
<td>4500</td>
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</tbody>
</table>
### EQUIPMENT

**Hospital Passenger Elevators**  
**Cars 8-9-10, Yellow**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
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</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-7</td>
<td>4500</td>
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</table>

### EQUIPMENT

**Hospital Passenger Elevator**  
**Car 11, Black**

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
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<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-5</td>
<td>4500</td>
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</table>

### EQUIPMENT

**Hospital Passenger Elevators**  
**Cars 12-13-14, Red**

<table>
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<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>350</td>
<td>B, G, 1-8</td>
<td>5500</td>
</tr>
</tbody>
</table>

### EQUIPMENT

**Hospital Passenger Elevators**  
**Cars 15-16, Brown**

<table>
<thead>
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<th>Capacity (lbs)</th>
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<td>Otis Elevator</td>
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<td>B, G, 1-3</td>
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</table>

### EQUIPMENT

**Hospital Passenger Elevator**  
**Car 17, Patient Care**

<table>
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<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Hydraulic</td>
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<td>B, G, 1</td>
<td>4500</td>
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</tbody>
</table>
## EQUIPMENT

### Hospital Passenger Elevators

**Cars 18-19-20, Green**

<table>
<thead>
<tr>
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<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dover Elevator</td>
<td>Geared Traction</td>
<td>350</td>
<td>B, G, 1-8</td>
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</tbody>
</table>

### Hospital Passenger Elevator

**Car 21, Parking Ramp**

<table>
<thead>
<tr>
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<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
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<tbody>
<tr>
<td>Dover Elevator</td>
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<td>B, G, 1-3</td>
<td>2500</td>
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### Hospital Passenger Elevator

**Car 22, Nurses Residence**

<table>
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<th>Manufacturer</th>
<th>Type</th>
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<th>Capacity (lbs)</th>
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<td>Geared Traction</td>
<td>100</td>
<td>B, 1-4</td>
<td>1200</td>
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### Hospital Freight Elevator

**Car 24, Loading Dock**

<table>
<thead>
<tr>
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<th>Capacity (lbs)</th>
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<tbody>
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<td>Otis Elevator</td>
<td>Hydraulic</td>
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### Hospital Passenger Elevator

**Car 25, Kitchen Service**

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<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
</table>
C. SUMMARY

All equipment was operational and adequate access was available for the preparation of this report. A copy of the Hospital’s Maintenance Agreement was not available for review. Otis Elevator Representative’s indicated the contract is a full maintenance agreement in effect for a total of twenty years with seven years remaining. The building appears to be properly elevatored based on our observations of peak traffic conditions due to the fact the hospital was quite busy at the time the survey was conducted. Our assessment of Otis Elevator Company’s maintenance program indicated Otis is meeting their obligations under the current maintenance agreement. Due to the number and variety of the equipment, all assessments are contained further in this report.

END OF SECTION
SECTION II – GENERAL CONDITIONS

A. GENERAL

As part of the report, the equipment was reviewed for general condition, state of repair, general appearance, compliance with prevailing codes and ADA requirements, remaining service life with potential upgrades and modernization recommendations including opinions of probable costs. This information is included in this section.

EQUIPMENT

Hospital Passenger Elevators
Cars 1-2, Blue

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westinghouse Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>1-5</td>
<td>3000</td>
</tr>
</tbody>
</table>

General Condition:

The Blue elevator group cars 1 and 2 are original to the construction of the building and were modernized in 1973. While well maintained, the equipment is obsolete and due for a complete modernization. The elevators were modernized in 1973 with Westinghouse REL relay logic controls, AC/DC motor generators, door operators and operating fixtures. The existing electromechanical relay logic control system is worn and inefficient. Both geared machines will require rebuilding or replacement.

State of repair:

The Blue elevator group has been well maintained but the equipment is old and heavily worn. Most routine control parts are still available and are supplied as part of the Otis Maintenance agreement. The elevator machine room is poorly ventilated and summertime heat build up is high, which effects the operation of the elevators. Door operation is poor as compared to today’s standards and expectations.

General appearance:

The elevator cab enclosures are outdated and should be replaced as part of a full modernization project.

Code and ADA compliance:

The Blue elevator group met prevailing codes at time of the last modernization. Both elevators do not comply with prevailing codes for fireman’s service or meet ADA requirements for signaling and fixture location or operation.
Remaining service life:

A complete modernization program is recommended within the next five (5) years. Probable cost is $360,000.00 for both elevators plus associated building costs.

Possible ADA upgrades including new fixtures, infrared door screens and hands free emergency communication intercoms may be installed for a probable cost of $28,000.00 for both elevators.

EQUIPMENT

Hospital Passenger Elevators
Cars 3-4, White

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Westinghouse Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, 1-5</td>
<td>3500</td>
</tr>
</tbody>
</table>

General Condition:

The White elevator group cars 3 and 4 are original to the construction of the building and were modernized in 1975. While well maintained, the equipment is obsolete and due for a complete modernization. The elevators were modernized in 1975 with Westinghouse REL relay logic controls, AC/DC motor generators, door operators and operating fixtures. The existing electromechanical relay logic control system is worn and inefficient. Both geared machines will require rebuilding or replacement.

State of repair:

The White elevator group has been well maintained but the equipment is old and heavily worn. Most routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is poorly ventilated and summertime heat build up is high, which effects the operation of the elevators. Door operation is poor as compared to today’s standards and expectations.

General appearance:

The elevator cab enclosures are outdated and should be replaced as part of a full modernization project.
Code and ADA compliance:

The White elevator group met prevailing codes at time of the last modernization. Both elevators do not comply with prevailing codes for fireman’s service or meet ADA requirements for signaling and fixture location or operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

A complete modernization program is recommended within the next five (5) years. Probable cost is $360,000.00 for both elevators plus associated building costs.

Possible ADA upgrades including new fixtures and hands free emergency communication intercoms may be installed for a probable cost of $28,000.00 for both elevators.

EQUIPMENT

Hospital Passenger Elevators
Cars 5-6-7, Orange

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-7</td>
<td>4500</td>
</tr>
</tbody>
</table>

General Condition:

The Orange elevator group cars 5 and 6 are original to the construction of the building. Cars 5 and 6 were installed in 1964. As part of an expansion project in 1971, cars 5 and 6 were raised two floors and car 7 was added. Cars 5 and 6 use 21AUL relay logic controls. Car 7 controls are 21UGL relay logic and all three controls operate through a group controller. The Orange elevator group is well maintained and in excellent condition. The original electromechanically relay logic controls with AC/DC motor generators are obsolete however, properly maintained, will operate sufficiently for existing building operations. The Orange elevator group shares the machine room with the Yellow elevator group.

State of repair:

The Orange elevator group has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is poorly ventilated and summertime heat build up is high, which effects the operation of the elevators. Door operation is acceptable to today’s standards and expectations.
**General appearance:**

The elevator cab enclosures are outdated and could be upgraded as part of a capital improvement project.

**Code and ADA compliance:**

The Orange elevator group met prevailing codes at the time car 7 was added. All three elevators do not comply with prevailing codes for fireman’s service or completely meet ADA requirements for signaling and fixture location or operation. New push button fixtures have been installed in the correct ADA locations; however, the type of button is not compliant. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

**Remaining service life:**

A complete modernization program is recommended within the next five to ten (5-10) years. Probable cost is $465,000.00 for all three elevators plus associated building costs.

Possible ADA upgrades including new fixtures and hands free emergency communication intercoms may be installed for a probable cost of $42,000.00 for all three elevators.

---

**EQUIPMENT**

*Hospital Passenger Elevators*  
*Cars 8-9-10, Yellow*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-7</td>
<td>4500</td>
</tr>
</tbody>
</table>

**General Condition:**

The Yellow elevator group cars 8 and 9 are original to the construction of the building. Cars 8 and 9 were installed in 1964. As part of an expansion project in 1971, cars 8 and 9 were raised two floors and car 10 was added. Cars 8 and 9 use 21AUL relay logic controls. Car 10 controls are 21UGL relay logic and all three controls operate through a group controller. The Yellow elevator group is well maintained and in excellent condition. The original electromechanically relay logic controls with AC/DC motor generators are obsolete however, properly maintained, will operate sufficiently for existing building operations. The Yellow elevator group shares the machine room with the Orange elevator group.
State of repair:

The Yellow elevator group has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is poorly ventilated and summertime heat build up is high, which effects the operation of the elevators. Door operation is acceptable to today’s standards and expectations.

General appearance:

The elevator cab enclosures are outdated and could be upgraded as part of a capital improvement project.

Code and ADA compliance:

The Yellow elevator group met prevailing codes at the time car 10 was installed. All three elevators do not comply with prevailing codes for fireman’s service or completely meet ADA requirements for signaling and fixture location or operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

A complete modernization program is recommended within the next five to ten (5-10) years. Probable cost is $465,000.00 for all three elevators plus associated building costs.

Possible ADA upgrades including new fixtures and hands free emergency communication intercoms may be installed for a probable cost of $42,000.00 for all three elevators.

## EQUIPMENT

*Hospital Passenger Elevator*

*Car 11, Black*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
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</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>200</td>
<td>B, G, 1-5</td>
<td>4500</td>
</tr>
</tbody>
</table>

General Condition:

The Black elevator is a single car installed in 1964 and is used for the Psychiatric ward and has key operation. The Black elevator is well maintained and in excellent condition. The original 21UCL electromechanically relay logic controls with AC/DC motor generator is obsolete; however, properly maintained, will operate sufficiently for existing building operations.
State of repair:

The Black elevator has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room ventilation is adequate. Door operation is acceptable to today’s standards and expectations.

General appearance:

The elevator cab enclosure is outdated and should be replaced as part of a full modernization project.

Code and ADA compliance:

The Black elevator met prevailing codes at time of the installation. The elevator does not comply with prevailing codes for fireman’s service or meet ADA requirements for signaling and fixture location or operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

A complete modernization program is recommended within the next five (5) years. Probable cost is $145,000.00 plus associated building costs.

Possible ADA upgrades including new fixtures and hands free emergency communication intercoms may be installed for a probable cost of $16,000.00.

---

**EQUIPMENT**

_Hospital Passenger Elevators_

_Cars 12-13-14, Red_

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
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<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>350</td>
<td>B, G, 1-8</td>
<td>5500</td>
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</table>

General Condition:

The Red elevator group cars 12, 13 and 14 are original to the construction of the building. Cars 12, 13 and 14 were installed in the 1980’s. The red elevator group controls are 30AUV relay logic and all three controls operate through a group controller. The Red elevator group is well maintained and in excellent condition. The original electromechanically relay logic controls with AC/DC motor generators are obsolete; however, properly maintained, will operate sufficiently for existing building operations.
State of repair:

The Red elevator group has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is poorly ventilated and summertime heat build up is high, which effects the operation of the elevators. Door operation is acceptable to today’s standards and expectations.

General appearance:

The elevator cab enclosures are outdated and could be upgraded as part of a capital improvement project.

Code and ADA compliance:

The Red elevator group met prevailing codes at the time of the last modernization. All three elevators do not comply with prevailing codes for fireman’s service or completely meet ADA requirements for signaling and fixture location or operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

A complete modernization program is recommended within the next ten (10) years. Probable cost is $480,000.00 for all three elevators plus associated building costs.

Possible ADA upgrades including new fixtures and hands free emergency communication intercoms may be installed for a probable cost of $48,000.00 for all three elevators.

EQUIPMENT

Hospital Passenger Elevators
Cars 15-16, Brown

<table>
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<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>350</td>
<td>B, G, 1-3</td>
<td>4500</td>
</tr>
</tbody>
</table>

General Condition:

The Brown elevator group cars 15 and 16 are original to the construction of the building. Cars 15 and 16 were installed in the 1994. The brown elevator group controls are Otis 211 with SCR drives. The Brown elevator group is well maintained and in excellent condition. Properly maintained, it will operate sufficiently for existing building operations. This elevator group and the building have been prepared for the addition of a future third elevator.
State of repair:

The Brown elevator group has been well maintained and is in good condition. All routine control parts are readily available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is properly ventilated. Door operation is acceptable to today’s standards and expectations.

General appearance:

The elevator cab enclosures are in good condition.

Code and ADA compliance:

The Brown elevator group met prevailing codes at time of installation. Both elevators comply with prevailing codes for fireman’s service and meet ADA requirements for signaling and fixture location or operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

As the elevators are only ten (10) years old, the remaining service life with proper maintenance is estimated at an additional twenty (20) years.

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Hydraulic</td>
<td>125</td>
<td>B, G, 1</td>
<td>4500</td>
</tr>
</tbody>
</table>

General Condition:

Car 17 is a single Otis hydraulic elevator with LRV controls installed in the Patient Care Unit in 1973. The Patient Care elevator is well maintained and in excellent condition. Properly maintained, it will operate sufficiently for existing building operations.

State of repair:

The Patient Care elevator has been well maintained and is in good condition. All routine control parts are readily available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is properly ventilated. Door operation is acceptable to today’s standards and expectations.
General appearance:

The elevator cab enclosure is in good condition.

Code and ADA compliance:

The Patient Care elevator met prevailing codes at time of installation. The elevator complies with prevailing codes for fireman’s service and meets ADA requirements for signaling and fixture location and operation. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

As the elevators are only ten (10) years old, the remaining service life with proper maintenance is estimated at an additional twenty (20) years.

EQUIPMENT

Hospital Passenger Elevators
Cars 18-19-20, Green

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dover Elevator</td>
<td>Geared Traction</td>
<td>350</td>
<td>B, G, 1-8</td>
<td>3000</td>
</tr>
</tbody>
</table>

General Condition:

The Green elevator group cars 18 and 19 are original to the construction of the building in 1977 and car 20 was added to the group in 1991. The Green elevator controls are Dover Compumatic relay logic with AC/DC motor generators and all three controls operate through a group controller. The Green elevator group is well maintained and in excellent condition. The original electromechanically relay logic controls with AC/DC motor generators are obsolete; however, properly maintained, will operate sufficiently for existing building operations.

State of repair:

The Green elevator group has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is properly ventilated and the door operation is acceptable to today’s standards and expectations.
**General appearance:**

The elevator cab enclosures are in good condition but could be upgraded as part of a future capital improvement project.

**Code and ADA compliance:**

The Green elevator group met prevailing codes at time of installation of car 20. All three elevators do comply with prevailing codes for fireman’s service and meet ADA requirements. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

**Remaining service life:**

A complete modernization program is recommended within the next ten (10) years. Probable cost is $435,000.00 for all three elevators plus associated building costs.

### EQUIPMENT

*Hospital Passenger Elevator*

*Car 21, Parking Ramp*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dover Elevator</td>
<td>Hydraulic</td>
<td>200</td>
<td>B, G, 1-3</td>
<td>2500</td>
</tr>
</tbody>
</table>

**General Condition:**

Car 21 is a single Dover hydraulic elevator with relay logic controls installed in 1974. The hydraulic power unit has been updated with a new hydraulic control valve and the in-ground hydraulic cylinder has been reportedly been replaced providing the new code compliant “double bottom” hydraulic cylinder. The Parking facility elevator is well maintained and in excellent condition. Properly maintained, it will continue to operate sufficiently for existing building operations.

**State of repair:**

The parking facility elevator has been well maintained and is in good condition. All routine control parts are readily available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room is properly ventilated. Door operation is acceptable to today’s standards and expectations.
General appearance:

The elevator cab enclosure is in poor condition and the ceiling was incorrectly placed, blocking the emergency escape hatch and restricting the required cab enclosure ventilation.

Code and ADA compliance:

The parking facility elevator met prevailing codes at time of installation. The elevator does not comply with prevailing codes for fireman’s service or meet ADA requirements for signaling and fixture location or operation.

Remaining service life:

With the replacement of the in-ground cylinder and hydraulic control valve; with proper maintenance, the elevator will continue to operate for the next ten (10) years when a complete modernization will be needed. Probable cost is $48,000.00.

Possible upgrades include new ADA fixtures and hands free emergency communication intercom, infrared door screen in place of the mechanical safety edges, replacement of the existing ceiling and new cab interior.

Probable cost for ADA fixtures: $14,000.00.
Probable cost for door screens: $1,800.00.
Probable cost for replacement ceiling: $5,000.00.
Probable cost for new cab interior: $12,000.00.

EQUIPMENT

Hospital Passenger Elevator
Car 22, Nurses Residence

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Geared Traction</td>
<td>100</td>
<td>B, 1-4</td>
<td>1200</td>
</tr>
</tbody>
</table>

General Condition:

The nurse’s residence elevator is a single two speed AC car installed in the 1950’s and is original to the building. The nurse’s residence elevator is well maintained and in good condition. The original electromechanical relay logic controls with AC motor is obsolete; however, properly maintained, will operate sufficiently for existing building operations.
State of repair:

The nurse’s residence elevator has been well maintained and is in good condition. All routine control parts are still available and are supplied as part of the Otis Maintenance Agreement. The elevator machine room ventilation is adequate for the type of elevator. Door operation is poor as compared to today’s standards and expectations.

General appearance:

The elevator cab enclosure is outdated and should be replaced as part of a full modernization project.

Code and ADA compliance:

The nurse’s residence elevator met prevailing codes at time of the installation. The elevator does not comply with prevailing codes for fireman’s service or meet ADA requirements for signaling and fixture location or the proper floor area to accommodate wheelchair access. Infrared door screens have been installed in place of the mechanical safety edges which enhances safe operation.

Remaining service life:

A complete modernization program is recommended within the next five (5) years. Probable cost is $165,000.00 plus associated building costs.

EQUIPMENT

*Hospital Freight Elevator*

*Car 24, Loading Dock*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Hydraulic</td>
<td>36</td>
<td>BF, BR, 1F, 1R</td>
<td>3000</td>
</tr>
</tbody>
</table>

General Condition:

Car 24 is a single Otis hydraulic freight elevator with relay logic controls and powered center bi-parting freight doors installed in the 1960’s. The loading dock elevator is well maintained and in good condition. Properly maintained, it will continue to operate sufficiently for existing building operations.
**State of repair:**

The loading dock freight elevator has been well maintained and is in good condition. All routine control parts are readily available and are supplied as part of the Otis Maintenance Agreement. The elevator power unit and relay logic controller is free standing in a lower level hallway instead of a proper machine room.

**General appearance:**

The elevator cab enclosure is in good serviceable condition.

**Code and ADA compliance:**

The loading dock freight elevator is not required to meet ADA codes. Due to the age of the elevator equipment, the in-ground hydraulic cylinder does not meet the newer code requiring double bottom safety bulkhead. While it is not mandatory at this time to retroactively replace the cylinder, any future planning should include the cylinder replacement.

**Remaining service life:**

The loading dock freight elevator by it’s simplicity of design, can be updated as needed. Possible upgrades include replacement of the original hydraulic valves, in ground cylinder replacement and the installation of fencing with a lockable gate surrounding the power unit.

Probable cost for valve replacement: $8,000.00.
Probable cost for fencing around power unit: $2,500.00.
Probable cost for in ground cylinder replacement: $55,000.00

---

**EQUIPMENT**

*Hospital Passenger Elevator*

*Car 25, Kitchen Service*

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Type</th>
<th>Speed (fpm)</th>
<th>Floors Served</th>
<th>Capacity (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Otis Elevator</td>
<td>Hydraulic</td>
<td>35</td>
<td>B, 1</td>
<td>1500</td>
</tr>
</tbody>
</table>

**General Condition:**

Car 25 is a single Otis hydraulic passenger elevator with relay logic controls and manual swing doors installed in the 1940’s. The kitchen elevator is maintained as best as possible; however, it is completely out dated.
State of repair:

The kitchen elevator has been maintained as best as possible. The hydraulic valves have been replaced and the oil used in the hydraulic system has been changed to a specialized vegetable oil. All routine control parts are readily available and are supplied as part of the Otis Maintenance Agreement. The power unit and most other components other than the controller are obsolete but can be maintained through customized repairs.

General appearance:

The elevator cab enclosure is in serviceable condition.

Code and ADA compliance:

The kitchen elevator is not required to meet ADA codes. Due to the age of the elevator equipment, the in-ground hydraulic cylinder does not meet the newer code requiring double bottom safety bulkhead. While it is not mandatory at this time to retroactively replace the cylinder, any future planning should include the cylinder replacement.

Remaining service life:

The Kitchen elevator is obsolete and should be completely replaced. Keeping the elevator running in its current form should be based on the Owner’s need. Probable cost for complete elevator replacement is $85,000.00 not including additional building work.

END OF SECTION
SECTION III - MAINTENANCE

A. DISCUSSION OF MAINTENANCE AND REPAIR

Elevator maintenance can be broken into four general areas: 1) housekeeping, 2) lubrication, 3) renewal or repair of worn components, and 4) adjustments. These areas sometimes overlap but are sufficiently independent to allow separate evaluation.

1. Housekeeping:
   Housekeeping requires approximately 60% of the total time spent maintaining equipment. While at first glance, this would appear to be an excessive amount of time spent simply cleaning, it is time well spent. If a job is kept clean, the fire hazard (especially in hoistways) is lessened. Potential troubles and worn components are often detected during routine cleaning operations. Dirt is a major cause of elevator malfunctions and a clean job facilitates routine inspection and maintenance.

2. Lubrication:
   Lubrication requires approximately 15% of the total time spent maintaining equipment. As with any mechanical equipment, proper lubrication minimizes wear, assures proper operation and lengthens trouble-free life of components.

3. Replacement and Repair:
   Replacement and repair of worn components represent approximately 15% of elevator maintenance. By detecting and replacing worn components, it is often possible to prevent equipment malfunction and unscheduled shutdowns.

4. Adjustments:
   Adjustments require approximately 10% of elevator maintenance time. Proper, timely adjustment keeps the equipment working smoothly and quietly, thus assuring peak performance and maximum life.

B. SUMMARY OF MAINTENANCE RATINGS

Otis Elevator Company is presently maintaining the equipment at Columbia – St. Mary’s. Our evaluation of their work is based on the following possible maintenance ratings: "Below Average", "Average" and "Above Average".

A "Below Average" represents approximately 10 - 15% of the installations we review. A "Below Average" rating indicates a concentrated effort is required in all areas in order to justify the monthly compensation agreement with the Owner.
An "Average" maintenance rating represents 70% to 80% of the installations we review. An "Average" rating indicates the Elevator Contractor is fulfilling his contractual obligations to the Owner and additional improvements are possible. Since the range of "Average" maintenance is broad, “high” or “low” “Average” further indicates that our evaluation is at the high or low end of "Average".

A rating of "Above Average" is designated for the top 10% of the installations we review. This rating usually means extra effort is present in completing maintenance obligations.

C. EVALUATION OF MAINTENANCE

Our summary evaluation of the maintenance performed at Columbia-St. Mary’s, Milwaukee Wisconsin by Otis Elevator Company is:

<table>
<thead>
<tr>
<th>HOUSEKEEPING</th>
<th>LUBRICATION</th>
<th>REPAIR/REPLACEMENT</th>
<th>ADJUSTMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>High Average</td>
<td>Average</td>
<td>Average</td>
<td>High Average</td>
</tr>
</tbody>
</table>

It is our opinion that based upon the existing Otis maintenance contract; Otis is meeting or exceeding the required services to the property.

END OF SECTION
## SECTION IV – PROBABLE CONSTRUCTION COST

### A. OPINION OF PROBABLE CONSTRUCTION COST

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Recommended Service</th>
<th>Probable Cost</th>
<th>ADA Upgrades</th>
<th>Total Probable Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hospital Passenger Elevators Cars 1-2, Blue</td>
<td>Complete Modernization</td>
<td>$360,000.00</td>
<td>$28,000.00</td>
<td>$388,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 3-4, White</td>
<td>Complete Modernization</td>
<td>$360,000.00</td>
<td>$28,000.00</td>
<td>$388,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 5-6-7, Orange</td>
<td>Complete Modernization</td>
<td>$465,000.00</td>
<td>$42,000.00</td>
<td>$507,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 8-9-10, Yellow</td>
<td>Complete Modernization</td>
<td>$465,000.00</td>
<td>$42,000.00</td>
<td>$507,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevator Car 11, Black</td>
<td>Complete Modernization</td>
<td>$145,000.00</td>
<td>$16,000.00</td>
<td>$161,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 12-13-14, Red</td>
<td>Complete Modernization</td>
<td>$480,000.00</td>
<td>$48,000.00</td>
<td>$528,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 15-16, Brown</td>
<td>None – With proper maintenance, these elevators have an estimated 20 years of additional service life remaining.</td>
<td>$0.00</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevator Car 17, Patient Care</td>
<td>None – With proper maintenance, this elevator has an estimated 20 years of additional service life remaining.</td>
<td>$0.00</td>
<td></td>
<td>$0.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevators Cars 18-19-20, Green</td>
<td>Complete Modernization</td>
<td>$435,000.00</td>
<td>Code Compliant</td>
<td>$435,000.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevator Car 21, Parking Ramp</td>
<td>Replace in-ground cylinder and hydraulic control valve</td>
<td>$48,000.00</td>
<td>$32,800.00</td>
<td>$80,800.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevator Car 22, Nurses Residence</td>
<td>Complete Modernization</td>
<td>$165,000.00</td>
<td>Code Compliant</td>
<td>$165,000.00</td>
</tr>
<tr>
<td>Hospital Freight Elevator Car 24, Loading Dock</td>
<td>Possible upgrades include replacing in-ground cylinder, hydraulic control valves and fencing with a lockable gate.</td>
<td>$65,500.00</td>
<td>Not Required</td>
<td>$65,500.00</td>
</tr>
<tr>
<td>Hospital Passenger Elevator Car 25, Kitchen Service</td>
<td>Complete Elevator Replacement</td>
<td>$85,000.00</td>
<td>Not Required</td>
<td>$85,000.00</td>
</tr>
</tbody>
</table>

Total Probable Cost: $3,073,500.00 + $236,800.00 = **$3,310,300.00**
APPENDIX – A

DEFINITIONS AND CRITERIA
APPENDIX - A - DEFINITIONS AND CRITERIA

Our survey measured the operation and performance of specific elements of the elevator system against industry standards, national codes and LBA criteria.

The following will define various components of elevator operation that were checked to determine operating efficiency, in comparison with LBA standards.

1. **Elevator Speed:**
   Car speed is measured with a tachometer while the elevator is making a continuous full run through the hoistway with no load in the car. Rated speed should be maintained at ±3% under any load condition in either direction of travel.

2. **Door Open Time:**
   Measured from the instant the doors begin to open until they are fully open.

3. **Door Closing Time:**
   Measured from the instant the doors begin to close until they are fully closed.

4. **Long Door Hold Open Time:**
   Measured from the instant the doors are fully open until they begin to close when the car stops in response to a hall call.

5. **Short Door Hold Open Time:**
   Measured from the instant the doors are fully open until the doors begin to close when the car stops in response to a car call.

6. **Nudging Time:**
   Measured from the instant the doors reach the fully open position until the door buzzer sounds and the doors begin to close at reduced speed.

7. **Door Closing Pressure:**
   Measured with a spring gauge as the doors are closing. Pressure is limited by Code to 30 pounds or less.

8. **Floor-to-Floor Performance Times:**
   Measured from the instant the doors begin to close until car is level at next floor with doors 3/4 open.

9. **Stopping Accuracy:**
   The elevator car should stop within ±1/4” of the floor. This prevents passengers from tripping when entering or exiting the car and facilitates movement in and out of the elevators.
10. *Acceleration:*
   The elevator should accelerate from zero to full speed smoothly, without noticeable steps of acceleration.

11. *Deceleration:*
    The elevator should decelerate smoothly from full speed to landing speed.
APPENDIX – B

PHOTOGRAPHS
ELEVATORS 1-2, BLUE
Westinghouse Hoist Machines

ELEVATORS 1-2, BLUE
Westinghouse REL
Relay Logic Controls

ELEVATORS 2-3, WHITE
Westinghouse Hoist Machines
ELEVATORS 3-4, WHITE
Westinghouse Motor/Generators

ELEVATORS 4-5-6, ORANGE
Machine Room, Otis Equipment

ELEVATORS 8-9-10, YELLOW
Machine Room, Otis Equipment
ELEVATOR 11, BLACK
Otis Hoist Machine Selector and Speed Governor

ELEVATORS 12-13-14, RED
Otis 30 AVU Relay Logic Controls

ELEVATORS 15-16, BROWN
Otis Geared Hoist Machines
ELEVATORS 15-16, BROWN
Otis 211 Microprocessor Controls

ELEVATOR 17, PATIENT CARE
Otis Hydraulic Power Unit and Controls

ELEVATORS 18-19-20, GREEN
Dover Geared Hoist Machine
ELEVATORS 18-19-20, GREEN
Dover Compumatic Controller and Motor/Generator

ELEVATOR 21, PARKING
Dover Hydraulic Power Unit

ELEVATOR 22, NURSES RESIDENCE
Hoist Machine and Selector
ELEVATOR 24, LOADING DOCK FREIGHT

Otis Hydraulic Power Unit and Controls

ELEVATOR 25, KITCHEN SERVICE

Otis Hydraulic Power Unit

ELEVATOR 25, KITCHEN SERVICE

Otis Relay Logic Controls
APPENDIX B.4
HAZARDOUS MATERIALS SURVEY REPORT
This document has been designed to meet the requirements as set forth by the following regulations for a building inspection of applicable asbestos-containing building materials for this facility:

29 CFR 1910.1001
29 CFR 1926.1101
40 CFR 763

Division of State Facilities
State of Wisconsin
Department of Administration

Structure location:
Columbia St Mary's Hospital
Milwaukee, WI

Reference Number: DSF# O3H2M

8 May 2004

DSF NO: O3H2M

Asbestos Building Inspection

Graef, Anhalt, Schloemer & Associates, Inc.
125 South 84th Street Suite 401
Milwaukee, WI 53214-1470

Telephone: 414-259-1500

GASAI Project # 20030330.09

Douglas E Robinson
Wisconsin Project Designer
Certificate # APD-1919
Inspector # AII-1919

Signature: [Signature]

DSF NO: O3H2M
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F. CERTIFICATION  
G. LIST OF ACRONYMS/SPREADSHEET CLARIFICATION
1.0 PURPOSE AND SCOPE

1.1 Purpose

The Wisconsin Department of Administration, Division of State Facilities (DSF) is considering the purchase of the Columbia St. Mary's Hospital complex located on the University of Wisconsin—Milwaukee campus at 2025 East Newport Avenue, Milwaukee, Wisconsin (see Figure 1 for general site location, and Figure 2 which is an aerial photograph of the hospital complex). The hospital complex consists of several connected buildings, an energy center, a parking structure, and the Columbia College of Nursing. For the purpose of this report and ease of identification, the various main buildings have been assigned numbers from 1 to 7 (see Figure 3). The hospital is currently in operation, but is planning to relocate elsewhere in the Milwaukee metropolitan area. The intent of purchase by DSF is to provide more useable space for students and faculty of the University of Wisconsin. Prior to purchase, DSF is performing a planning study to determine the most practical and best use of space provided by the various buildings within the hospital complex. Supplemental to the planning study, DSF required information regarding the potential presence of hazardous materials on the property which may result in assumed legal liability, require remediation, or otherwise affect renovation options (potentially including full or partial demolition) as presented in the planning study.

During the months of March and April of 2004, Graef, Anhalt, Schloemer & Associates, Inc. (GASAI) performed a Phase I environmental assessment to satisfy requirements for due diligence prior to property purchase, and performed an asbestos inspection of all hospital complex buildings. The results of the Phase I investigation have been provided under separate cover. This report provides the results of the asbestos inspection, only.

1.2 Meetings to Define Scope

Prior to beginning work, GASAI staff met with Mr. Timothy Stratton and Mr. Dan Day of DSF to discuss the overall intent and scope of the asbestos inspection. It was determined from this meeting that the intent of the asbestos inspection was to provide a general overview of potential asbestos containing materials present in the hospital buildings that would have major cost implications to planned renovations. The understanding was that if DSF purchased the property, then more detailed asbestos inspections may be necessary in the future prior to renovation or demolition activities. Of major concern to DSF at this time were the potential presence of fire proofing materials, acoustical materials,
plaster-based wall materials.

During the meeting, a preliminary list of typical asbestos containing materials that may be encountered in the hospital buildings was reviewed. To save cost and time during this preliminary inspection, DSF indicated to GASAI staff that some of the materials on the list should be assumed to contain asbestos, and samples for laboratory analysis should not be collected of these material types. According to AHERA, these materials must be considered as asbestos containing or proven to not contain asbestos in accordance with NR417 and/or 29CFR1926.1101 prior to renovation or demolition. The material types to be assumed to contain asbestos and to be excluded from sampling are noted in the following list of potential asbestos containing building materials:

<table>
<thead>
<tr>
<th>Homogeneous Materials Code</th>
<th>Description</th>
<th>Sample</th>
<th>Presumed</th>
</tr>
</thead>
<tbody>
<tr>
<td>THERMAL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. TA</td>
<td>Aircell Pipe Insulation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2. TAF</td>
<td>Fittings on Aircell</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>3. TC</td>
<td>Cardboard Pipe Insulation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. TCF</td>
<td>Fittings on Cardboard Pipe</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. TM</td>
<td>Magnesia Pipe Insulation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. TW</td>
<td>Woolwrap Pipe Insulation</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>7. TWF</td>
<td>Fittings on Woolwrap Pipe</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>8. TF</td>
<td>Fiberglass with Suspect Layer</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>9. TFF</td>
<td>Fittings on Fiberglass Pipe</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>10. TTW</td>
<td>Tape Wrap on Pipe</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>11. TBI</td>
<td>Boiler Insulation-Interior</td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>12. TBE</td>
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<td>Water Meter Insulation</td>
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<td>Gang Valve Insulations</td>
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<td>17. TXB</td>
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<td>18. TDI</td>
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Homogeneous Materials Code

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<td>20. TDW</td>
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Project # 20030330.09  4  8 May 2004
21. TFC Flexible Duct Connector
22. TIL Incinerator Liner (Not Fire Brick)
23. TIX Incinerator Exhaust Insulation
24. TFP Flue Packing
25. TFB Fire Brick

SURFACING
1. SSF Sprayed on Fireproofing
2. SSA Sprayed on Acoustical
3. STF Troweled on Fireproofing
4. STA Troweled on Acoustical
5. SPI Plaster (Base and Skim Coat)
6. SSAS Textured Paint (Stucco)

MISCELLANEOUS
1. MF Floor Tile with Mastic (all sizes)
2. MFL Linoleum with Mastic
3. MCM Carpet Mastic
4. MPM Paneling Mastic
5. MFM Exposed Flooring Mastic
6. MCT Ceiling Tile and Mastic
7. MSCT Suspended Ceiling Tile
8. MDW Drywall and Joint Compound
9. MTP Transite Paneling- Siding
10. MTL Transite Lab top
11. MTS Transite Sink
12. MPI Paper Insulation
13. MPT Tar Paper Insulation
14. MSM Serpentine Marble (Terrazzo)
15. MPG Window Pane Glazing
16. MBI Blown In Insulation
17. MRM Roof Membrane
18. MRS Roof Shingle
19. MCTM Ceramic Tile Mastic

1.3 Scope of the Asbestos Inspection

The scope of this asbestos inspection included estimating the quantities of
presumed asbestos containing material (PACM) and summarizing the amount of PACM present at the hospital complex. The scope also included sampling of accessible PACM that DSF did not specifically instruct GASAI staff to preclude from sampling. The general condition and accessibility of PACM was also noted. The condition of the materials and their accessibility is important in determining whether the material is safe to manage in place, or if immediate action needs to take place to alleviate potential concerns for human safety.

Although not federally mandated for this facility by the United States Environmental Protection Agency (EPA), the United States Department of Occupational Safety and Health Administration (OSHA) requires this data be available prior to any renovation or demolition process. The Asbestos Project Designer may utilize the findings of this inspection report to develop an asbestos management plan outlining OSHA required response actions for identified asbestos containing building materials (ACBM) prior to renovation and/or demolition. This inspection and report meets the EPA’s requirements for the identification and assessments of asbestos-containing building materials (ACBM) under present Asbestos Hazard Emergency Response Act (AHERA) requirements covering public and non-public schools (k-12). The AHERA inspection standard is considered “state of the art” and was deemed appropriate for this inspection.

In summary, the following major types of information are presented in this report:

1. The identification and assessment of accessible PACM.
2. General condition and accessibility of identified PACM
3. An inventory of identified PACM, and their classification into separate homogeneous materials.
4. Estimated quantities of both PACM and ACBM determined through laboratory analysis.
5. Laboratory results of bulk samples taken to date.

2.0 INSPECTION PROCEDURES

2.1 Pre-inspection Meetings
GASAI met with Mr. William Best, Director of Safety, Mr. James Valenti, Director of Plant Engineering, and Mr. Troy Karll, Lead Maintenance/Plant Engineer for the Columbia St. Mary's hospital complex to review access procedures. All GASAI personnel involved in the asbestos inspection process reviewed the Contractor Guideline documents provided by Columbia St. Mary’s hospital, and specific to work performed within the active Columbia St. Mary’s hospital complex. Documents specific to the Health Insurance Portability and Accountability Act of 1996 (HIPAA) were also reviewed and signed by all GASAI personnel performing work at the hospital complex.

2.2 Access Limitations

During the meetings, various areas of limited access within the hospital complex were discussed with Mr. Best and Mr. Valenti. These areas included the psychiatric ward on the sixth floor of building #1, the surgery recovery ward on the seventh floor of building #1, and the surgical operating rooms and intensive care ward in building #2. There were other miscellaneous areas that could not be accessed such as the doctors and nurses bathrooms and certain storage areas. All areas that could not be accessed are shown on Figures 4.1 through 4.10. Mr. Valenti assigned two of his maintenance staff to act as escorts and points of contact during the inspection.

2.3 Construction History

The Hospital complex has multiple structures. The structures date from 1919 through 1996. Many renovations of the older structures and additional new structures have occurred over the past eighty-five years (see Figure 5 for the various ages of hospital buildings and additions). The main buildings consist of the main health care facility known as the East Wing, the West Wing, the Clinical Building, and the Medical Arts Building. Other structures involved in the operation of the Hospital include the College of Nursing, the Energy Center and a Parking Structure (Figure 3).

2.4 General building Materials Used in Construction

The Exterior walls of the buildings generally consist of Brick, concrete block and poured concrete walls, and preformed concrete and metal ceilings. Interior partition walls consist mainly of vinyl or paint over sheetrock and plaster with thin-coat. Ceramic tiled walls and floors with associated mastics were found throughout the structures.

Exterior roofing components were built up roofing, rolled roofing, and rubber roofing with metal flashings and tiled parapet caps.
GASAI inspectors had limited access for visual inspection of ceiling materials. In these areas, the inspectors generally observed a ceiling consisting of either fibrous panels, or cut drywall, suspended from a plaster ceiling substrate. In addition, some ceiling tiles were observed to be glued directly to the plaster. However, in one area, an access hole had been cut into the plaster ceiling. Upon investigation, GASAI inspectors observed that the true ceiling base material (substrate) was concrete. Steel grids were attached to the concrete and plaster was applied, creating an air space between the plaster and the concrete of roughly between 1.5 to 3.0 feet. GASAI inspectors observed piping with thermal insulation within this air space. In the College of Nursing (building #6 in Figure 3), fibrous tiles were observed to be glued directly to the concrete substrate in some, but not all, of the areas (see photographs 13 and 14 in Appendix A).

Interior flooring consists of terrazzo, concrete with sheet-goods (linoleum), and wood and floor tiles of many different sizes with mastic adhesive.

Thermal Type Insulations were found to be Hard Packed and pre-formed Magnesia, Air-cell, Cardboard, Fibrous-glass and Wool-felt. Some thermal insulation had canvas wrap, paper wrap, or paper with aluminum wrap. Some thermal insulation had no wrap (see photographs 2 through 12 and 15 through 23 in Appendix A).

2.5 Inspection and Sampling Procedures

On March 24, 2004, Certified -Wisconsin State Asbestos Inspectors, of Graef, Anhalt, Schloemer & Associates, Inc began an AHERA pre-demolition and/or renovation building inspection of the structures for the purpose of the identification and assessment of presumed asbestos containing building materials (PACM) at the Columbia St. Mary’s Hospital located in Milwaukee, WI. Initially, building materials were characterized as either PACM or Non-PACM. PACM was then quantified and the relative condition of the materials was noted. The PACM was then further categorized as either material to be sampled, or not sampled based on the requirements of DSF staff. The initial inventory of materials allowed GASAI staff to determine the appropriate AHERA sampling protocol and quantity of samples required to remain in compliance with the appropriate OSHA and/or AHERA (EPA) standard.

Samples of PACM were collected using a random protocol specified by AHERA. PACM was first wetted with amended water prior to collecting the samples. Samples were collected either using dedicated thin-walled aluminum tubes (cutter tubes) which were sealed immediately to prevent cross-contamination. In some cases, samples were collected using razor knives and other sharp cutting instruments. In these cases, the samples were placed in zip-loc bags and the
sampling instrument was cleaned thoroughly with water between samples to reduce the possibility of cross-contamination. Field forms were used to log data such as sample number, material type, sample location, date of collection, etc. and reviewed in the field to ensure quality control and assurance. The secured bulk samples of each PACM were forwarded via FedEx (with a chain of custody) to an Independent A.I.H.A. Certified Laboratory for Polarized Light Microscopy (PLM) and/or PLM Point Counting to determine the type and amount of asbestos present.

Sampling and inspection procedures were sometimes performed either before, or after, normal business hours to alleviate interruption of daytime hospital functions. The maintenance escorts identified the restricted access areas of the hospital for GASAI staff (Figures 4.1 through 4.10). In these instances the inspectors presumed that the materials present in these restricted areas were consistent with materials in similar un-restricted areas.

3.0 Inspection Results

Table 1 on the next page (page 10) was prepared to help summarize the results of this asbestos inspection. As can be seen in Table 1, the building number with year (corresponding to Figures 3 and 5) are listed in the left hand column. The type of potential asbestos-containing building material with DSF code is listed in the top row. The quantity of each material observed in each building is presented in Table 1, along with an indication (in yellow) of any material, which was sampled and tested positive for asbestos content. The total amount of each type of asbestos-containing material is listed in the table along the bottom row.

For the most part, PACM material observed was in good to excellent condition (see photographs 18 through 21 in Appendix A) with very few isolated areas of "damaged" to "significantly damaged" material (see photographs 1, 4, 11, and 12 in Appendix A). Also, most of the major materials of concern to DSF including, but not limited to, drywall, drywall taping compound, plasters, thin-coat, and suspended ceiling tiles were sampled and found to be NON-Asbestos Containing Materials.

The PACM which was sampled (but tested negative for asbestos) is not included in Table 1; however, the list of these materials can be found in the Bulk Sample Log Forms in Appendix C, and the measured quantities of these materials can be found in the ACBM Identification Assessment sheets in Appendix D.
## Table 1
Asbestos Containing Materials
May 6, 2004

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<th>TC / TCF</th>
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<th>TM</th>
<th>MCTM</th>
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**Legend**

Asbestos Containing Materials

- Known
- Presumed

**TA / TAF**
- Air Cell Pipe Insulations
- Fittings on AirCell Pipe

**MCT**
- Cardboard Pipe Insulations
- Window Pane Gasket
- Magnesia Pipe Insulation
- Ceramic Tile with Mastic
- Serpentine Marble (Terazzzo)
- Duct Insulation
- Duct Wrap - Thin Paper
- Linoleum with Mastic
- Floor Tile - 9"
- Roof Shingles
- Floor Tile 12"
- Carbret Mastic
- Incinerator Liner
- Roof Membrane
- Transite Electrical
- Wood with Mastic
- Transite Sink

**Notes on Thermal Quantities**
In addition to the tabular results, detailed data sheets have been included in the following Appendices to this report:

- Floor Plans of the entire hospital complex are included in Appendix B.

- The Bulk Sample Log Forms are presented in Appendix C. The log forms include the DSF sample identification numbers, the functional space location of the sample, the material type, the specific sample location, and characterization of the sample as confirmed asbestos content (in red print), presumed asbestos containing, or no asbestos detected.

- Appendix D contains the ACBM Identification Assessment sheets. The ACBM sheets provide the quantities of PACM materials observed during the inspection, regardless of whether the material tested positive or negative for asbestos. The sheets also provide the AHERA descriptive terms associated with the condition that the material was observed in. The ACBM sheets in Appendix D are further organized by building number.

- The laboratory analytical data sheets for all samples are included in Appendix E. These sheets provide the results of sample analysis, and also provide information related to the analytical methodology used, the general sample material description, and chain of custody documentation.

4.0 DISCUSSIONS

During our inspection we found indications that the interior walls and above the plaster ceilings in building (1) known as the "East Wing" and interior walls and above the plaster ceilings of building (2) known as the "West Wing" contain pipes wrapped with thermal pipe insulation, which is presumed to contain asbestos. These are both live and disconnected heating lines and potable water lines that are still in use or have been abandoned in place during the various phases of building expansion that took place over eighty-five years. We have limited evidence of these inaccessible pipes. Some of these thermal pipe insulation systems could be classified as "damaged" to "significantly damaged", with areas of asbestos debris requiring AHERA general cleanup by accredited personnel (See photograph 1 in Appendix A). While collecting a sample of plaster from one of these interior walls, we coincidentally cored into the insulating wrap from one of these pipes. The piece of insulating wrap was analyzed for asbestos content separately from the plaster material contained within the sample. The pipe insulation tested positive for asbestos (See Bulk Project # 20030330.09 11 8 May 2004
Sample Log Form in Appendix C; sample number SPI-1-1931-84). We could not secure an accurate accounting of the asbestos associated with these "hidden" pipes, since observation can only be accomplished by partial demolition of the ceilings and walls. These coincidental observations lead us to believe that if the interior walls and ceilings are partially or fully demolished, there could be considerable additional asbestos abatement needs that could not be accounted for in this inspection.

Terrazzo flooring was presumed to contain asbestos per DSF, with approximately 79,000 sq ft of material identified during the inspection (Table 1). Experience has indicated that terrazzo with a green fleck has a higher possibility of containing asbestos than other colors. Terrazzo throughout the structures inspected consist of a black, gold and white color pattern and as such have a much lower possibility of being asbestos containing material. Physical sampling of the material was not performed due to the destructive nature of the sampling process. It is our opinion that additional sampling would be worth the effort to determine if this material contains asbestos, if future plans include the removal of the terrazzo flooring.

Floor tiles and associated mastic were observed in all buildings of the hospital complex. This material was presumed to be asbestos containing as directed by DSF. Asbestos containing floor tile, "if maintained in a non-friable condition" according to AHERA may be left in the facility during demolition and is not federally mandated as a "removal" material prior to demolition. However, it is our professional opinion that in most cases the material becomes friable during demolition and could present a potential liability issue. This material should be abated, after sample verification, prior to renovation or demolition.

Transite electrical insulating type materials were found in one laboratory vent hood. It should also be noted that transite piping was widely used as a construction material for drains and heating ducts up until the late 1970's. Although not specifically observed, these transite materials could potentially be found in interior wall and below grade heat ducts in the walls systems and concrete slab. Given the ages of many of the buildings, it is reasonable to assume that there may be transit materials present in these buildings that could not be visually observed without partial demolition. Therefore, if future renovations include modifications to the building walls or floor slab, care should be taken to identify these materials and sample appropriately for asbestos content.

A significant amount (44,756 sq. ft.) of linoleum sheet goods were presumed to be asbestos containing and not sampled. It is our opinion that additional sampling would be worth the effort to determine if this material is non-hazardous, if future plans include the removal of the linoleum flooring.
Ceiling tiles, directly attached to the substrate with mastic, were identified above the existing suspended ceiling in some locations (see photographs 13 and 14 in Appendix A). The ceiling tiles with mastic were sampled, and in some of the rooms the mastic tested positive for asbestos. In other rooms, the mastic tested negative for asbestos. However, access to ceiling tiles was severely restricted in many of the hospital areas for infection control reasons; therefore, absolute quantification of this material was impossible. Given these mixed results and restricted access for inspection and sampling, GASAI recommends that DSF assume that all ceiling tile affixed to the substrate with mastic be considered as asbestos containing material until full access for quantification and sampling can occur.

There was a significant amount (92,000 sq. ft.) of ceramic wall and floor tile observed. The mastic used for this tile was presumed to contain asbestos per DSF. Considering the large amount of tile observed, and the relative difficulty in removal and abatement, GASAI recommends sampling of the mastic material prior to significant renovations involving the removal of this material.
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2.1 Pre Inspection Meetings
2.2 Access Limitations
2.3 Construction History
2.4 General Building Materials
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D KBM Identification Assessment
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### Table 1
Asbestos Containing Materials
May 6, 2004

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<td>MTS</td>
<td>Transite Sink</td>
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AREAS NOT ACCESSIBLE TO INSPECTION
(7th Floor)
ASBESTOS INSPECTION
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
MILWAUKEE, WISCONSIN

GRAEF ANHALT SCHLOEMER
and Associates Inc.

FILE: Jobs\2003\20030330-09\CAD\Site\dgn\00\V._.09_A7thFloor330_v7.dgn
DATE: 07-May-04 07:02

FIGURE 4.9
AREAS NOT ACCESSIBLE TO INSPECTION
(8th Floor)
ASBESTOS INSPECTION
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
MILWAUKEE, WISCONSIN

FIGURE 4.10
APPENDIX B.5

PHASE I ENVIRONMENTAL REPORT
Phase I Environmental Assessment

Property Located at
2025 E Newport Avenue
Milwaukee, WI 53211

Prepared for:

State of Wisconsin Department of Administration
Division of State Facilities
101 East Wilson Street, 7th Floor
Madison, WI 53707-7866

May 2004

Prepared by

GRAEF, ANHALT, SCHLOEMER & ASSOCIATES, INC.
Consulting Engineers and Scientists
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470
Telephone: (414) 259-1500
FAX: (414) 259-0037

Project No. 20030330.09
PHASE I ENVIRONMENTAL SITE ASSESSMENT

State of Wisconsin Department of Administration
Division of State Facilities
101 East Wilson Street, 7th Floor
Madison, WI 53707-7866

Site Address: 2025 E Newport Avenue
Milwaukee, WI 53211

Prepared By: Graef, Anhalt, Schloemer & Associates, Inc.
Consulting Engineers and Scientists
One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470
(414) 259-1500

______________________________
Brian W. Schneider, P.E.
Environmental Engineer

______________________________
Brentt P. Michalek
Environmental Scientist
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   1.2 Scope ...........................................................................................................................................1
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- Figure 4  2000 Aerial Photo

### APPENDICES

- Appendix A  Environmental Data Resources, Inc. Report
- Appendix B  Wisconsin Department Of Commerce Tank Search
- Appendix C  Site Photos
- Appendix D  Environmental Questionnaire
### List of Acronyms and Abbreviations

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<td>bgs</td>
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<td>CERCLA</td>
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<td>Resource Conservation and Recovery Act</td>
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<td>TCLP</td>
<td>Toxic Characteristics Leachate Procedure</td>
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<td>USEPA</td>
<td>United States Environmental Protection Agency</td>
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<td>UST</td>
<td>Underground Storage Tank</td>
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<td>VOC</td>
<td>Volatile Organic Compound</td>
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1 INTRODUCTION

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment was to identify the potential presence of recognized environmental conditions associated with the past and present use of the property located at 2025 Newport Avenue, Milwaukee, Wisconsin. This property will be referred to as the Subject Property throughout the report.

Recognized environmental conditions and historical recognized environmental conditions are defined in ASTM E 1527-00, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process. Recognized environmental conditions are defined as the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an environmental action if brought to the attention of appropriate governmental agencies. Conditions determined to be de minimis are not recognized environmental conditions.

The assessment was performed in two stages: background and records search; and site reconnaissance and interviews. The following report contains the assessment results.

1.2 Scope

The scope of work consisted of the following elements:

1. A site walk-through to observe the project site for signs of underground tanks; fill areas; depressions; distressed vegetation; staining; and other visible indicators of potential environmental concerns.

2. A general description of soils, hydrologic and hydrogeologic setting to determine
potential paths of contamination to groundwater, if potential for soil and groundwater contamination is present.

3. Review of municipal building permit records or other records for property background, site improvements or installations (i.e. underground tanks), past uses, owners or occupants for the subject site.

4. Review of governmental agency records for hazardous waste activity, permits, and other environmentally related activities or violations. Review included the following Federal and State lists:
   - Emergency Response Notification System (ERNS)
   - National Priorities List (NPL)
   - Resource Conservation and Recovery Information System (RCRIS)
   - Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
   - Wisconsin List of Leaking Underground Storage Tanks (LUST)
   - Wisconsin List of Spills
   - Wisconsin Registered Underground Storage Tanks (UST)
   - Wisconsin Solid Waste Facility/Landfill Sites (SWF/LS)
   - State Hazardous Waste Sites (SHWS)
   - USEPA PCB Activity Database (PADS)
   - Hazardous Materials Incident Report System (HMIRS)

5. Review of United States Geologic Survey 7.5-minute quadrangle topographic map for indications of general drainage patterns, and land use.

6. Interviews with persons familiar with site histories, if possible, such as local government personnel, present owners/operators, or former owners/operators. A site questionnaire was sent to the current owner of the property.

7. Review of underground tank records held by the Department of Commerce (DCOMM), if available, including records of possible underground tanks on adjacent properties.
8. Review of aerial photographs obtained from the local or regional planning commission, or a state or commercial source to determine historical property usage of both the site and the adjacent properties. Review included five photographs from representative years of the site’s history.

9. Historical Sanborn fire insurance maps were requested and received for 1929, 1950, and 1966 for the area. These maps are used to view potential contaminant sources such as underground tanks and flammable liquid storage areas for both the subject site and adjacent properties.


1.3 Terms and Conditions

1.3.1 Contractual Agreements

The Phase I Environmental Site Assessment was performed by Graef, Anhalt, Schloemer, and Associates, (GASAI) for the State of Wisconsin Department of Administration, Division of State Facilities (DSF). The work was performed in accordance with the GASAI proposal signed and dated March 19, 2004.

1.3.2 Limitations

ThisPhase I Environmental Assessment was conducted using the degree of care and skill ordinarily exercised under similar circumstances by environmental consultants practicing in this or other localities. The information presented in this report can be considered reliable as of the date of this report.

The conclusions contained in this report are based on the records and information reviewed and a limited site inspection as described in this report. Physical sampling of soil, water, air, or building materials was not performed as part of this scope of work; consequently the potential presence or absence of hazardous substances within the subsurface environment was not confirmed.
1.3.3 User Reliance

This report was prepared for DSF. Additional parties may rely on this report only with the express written consent of Graef, Anhalt, Schloemer & Associates, Inc.

2 SITE DESCRIPTION

2.1 Location and Legal Description

The Subject Property is comprised of five separate parcels of land combined into one parcel identified by the address 2025 Newport Avenue, Milwaukee, Wisconsin. The subject site is located in the Southeast ¼ of Section 10 Township 7 North, Range 22 East, City of Milwaukee, Milwaukee County, Wisconsin (See Figures 1 and 2 for site location and layout of hospital buildings, respectively).

2.2 Site and Vicinity General Characteristics

The Subject Property is Columbia St. Mary’s Hospital and the Columbia College of Nursing. As can be seen on Figure 2, the area contains several connected buildings associated with the hospital, an energy center, a parking structure and parking lots, and Columbia College of Nursing. Adjacent properties are residential and University of Wisconsin Milwaukee Campus. The Subject Property is bordered to the north by Newport Avenue and residential properties, to the west by single-family residential properties, to the south and east by Hartford and Maryland Avenues and the University of Wisconsin Milwaukee Campus.

2.3 Current Use of Property

The subject site is currently a hospital, the associated parking structures, energy center, and school of nursing.

2.4 Descriptions of Structures, Roads, Other Improvements on the Site

The investigation divided the study into seven buildings that are located on the property. Municipal sewer and water service the buildings, while the power needs of the hospital are provided by an onsite energy center. Several parking lots and one parking structures was
included as part of the site search.

2.5 Current Use of Adjoining Properties

The Subject Property is bordered to the north by Newport Avenue and residential properties, to the west by single-family residential properties, to the south and east by Hartford and Maryland Avenues and the University of Wisconsin Milwaukee Campus.

2.6 Physical Setting

2.6.1 Surface Elevation and Topography

The elevation of the site is between 670 and 685 feet msl based on the USGS topographic quadrangle map and approximately 681 feet msl based on the EDR report.

2.6.2 Soil and Geology

Based on the information in the EDR report, the soil at the site is Kewaunee loam, which is a Hydrologic Class C soil having slow infiltration. The soils are well drained, having a water table of more than 6 feet below grade. The characteristics of these soils may help to limit the migration of possible contamination resulting from surface spills. The uppermost bedrock at the site is likely Devonian or Silurian dolomite at a depth beginning at approximately 200 feet. A well record located approximately 1/8 mile away reported approximately 150 feet out of the 200 to be clayey sediments. The sediments covering the bedrock would likely protect the bedrock from surface contamination.

2.6.3 Local Hydrology and Hydrogeology

Based on topography, the general direction of surface water drainage is toward the northwest, although the surface water drainage is strongly influenced by the presence of roads, buildings, and offsite sewers. The direction of shallow groundwater flow in the surface sediments is interpreted to be west to northwest toward the Milwaukee River approximately ½ mile west of the site, based on topography and information in the EDR Report.
3 USER PROVIDED INFORMATION

DSF provided information indicating the approximate size and boundaries of the Subject Property (Figure 2).

The following plans provided by Hammel, Green & Abrahamson (HGA) were reviewed for potential recognized environmental conditions. Based on building permit reviews and other information, these plans are not comprehensive.

<table>
<thead>
<tr>
<th>Plan Set</th>
<th>Description</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1(1)</td>
<td>Plans for Energy Building and Remodeling of the 1966 Building, 1951 Central Building, and 1941-1951 Central Building</td>
<td>June 11, 1981</td>
<td>Remodeling and construction plans. The plan showed 2-20,000-gallon underground fuel tanks approximately 90 ft. south of the Southeast Corner of the nurses building. The plans noted that these tanks were scheduled to be removed and replaced with 2-30,000 gallon UST west of the energy center.</td>
</tr>
<tr>
<td>1(2)</td>
<td>Plans for Energy Building and Remodeling of the 1966 Building, 1951 Central Building, and 1941-1951 Central Building</td>
<td>March 10, 1982</td>
<td>Remodeling and construction plans</td>
</tr>
<tr>
<td>1 E</td>
<td>Plans for Energy Building and Remodeling of the 1966 Building, 1951 Central Building, and 1941-1951 Central Building</td>
<td>March 10, 1982</td>
<td>Remodeling, construction, and electrical plans</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Plans showed two oil USTs 90ft. south of the southeast corner of the nurses building and one small UST 120 feet south and 50 feet west of the southeast corner of the nurses building. Plans indicate extensive piping running between the School of Nursing and the Hospital Buildings to the south.</td>
</tr>
<tr>
<td>3</td>
<td>Foundation plan - Revised October 25, 1917 - Nurses School of the Columbia Hospital.</td>
<td>October 1, 1917</td>
<td>School of Nursing Plans for the 1919 Building. Laboratory spaces with tile sewers were present in the basement.</td>
</tr>
<tr>
<td></td>
<td>Description</td>
<td>Date</td>
<td>Details</td>
</tr>
<tr>
<td>---</td>
<td>-------------</td>
<td>------</td>
<td>---------</td>
</tr>
<tr>
<td>4</td>
<td>Plot Plan and Details for Remodeling and Addition - X-ray Department and Cast Area.</td>
<td>November 2, 1952</td>
<td>Addition to Central Buildings in the East Wing. 5th Floor addition to 1931 building and remodeling of 1923 building.</td>
</tr>
<tr>
<td>6</td>
<td>Floor Plans – Addition to Columbia Hospital.</td>
<td>June 9, 1931</td>
<td>Additional building added in 1931 to the Central Buildings of the East Wing.</td>
</tr>
<tr>
<td>6A</td>
<td>Plot Plan – Addition to Columbia Hospital.</td>
<td>October 12, 1940</td>
<td>Additional buildings added and remodeling done in 1951 to the western side of the East Wing.</td>
</tr>
<tr>
<td>7</td>
<td>Floor Plans – Columbia Hospital.</td>
<td>March 27, 1917</td>
<td>Floor plans for the original 1919 hospital currently part of the East Wing. The set did not include a basement plan.</td>
</tr>
<tr>
<td>9</td>
<td>Construction Plans – Additions to the Medical Arts Building.</td>
<td>November 12, 1990</td>
<td>Addition to the Medical Arts Building.</td>
</tr>
<tr>
<td>10</td>
<td>Construction Plans – Addition to Columbia Hospital</td>
<td>September 25, 1963</td>
<td>Addition becomes the present day West Wing of the Hospital in 1966.</td>
</tr>
<tr>
<td>11</td>
<td>Construction Plans – Clinical Building Addition</td>
<td>May 26, 1993</td>
<td>Addition Added in 1966 to the North Side of the West Wing</td>
</tr>
<tr>
<td>12</td>
<td>Plan of Existing Conditions – Plan of Present Operating Suite</td>
<td>April 24, 1953</td>
<td>Addition to and remodeling of present operating suite to the Original 1919 Columbia Hospital.</td>
</tr>
<tr>
<td>13</td>
<td>Parking Structure</td>
<td>1973</td>
<td>The plans showed an underground substation 30 feet east of the parking structure, and an oil water separator in the basement.</td>
</tr>
<tr>
<td>14</td>
<td>Plot Plan – West Wing Additions</td>
<td>April 12, 1950</td>
<td>Additions to the Northwest and Southwest corners of the East Wing Added in 1951. This location was identified in the 1950 plans as the West Wing.</td>
</tr>
<tr>
<td>15</td>
<td>West Wing Addition</td>
<td>October 12, 1950</td>
<td>Additions to the West side 1941 building of the East Wing.</td>
</tr>
<tr>
<td>SS1</td>
<td>Site Info / Survey 1</td>
<td>October 16, 1990</td>
<td>Survey of hospital grounds.</td>
</tr>
<tr>
<td>SS2</td>
<td>Site Info / Survey 2</td>
<td>June 28, 1991</td>
<td>Survey of hospital grounds. Two USTs shown adjacent to energy building.</td>
</tr>
<tr>
<td>SS3</td>
<td>Site Info / Survey 2</td>
<td>June 20, 1994</td>
<td>Survey of hospital grounds.</td>
</tr>
</tbody>
</table>

Columbia St. Mary’s did not allow GASAI personnel access to environmental records.

### 4. RECORD SEARCH

#### 4.1 EDR Database Search

The records search included reviewing published environmental databases (provided by...
Environmental Data Resources (EDR), Inc.). The record search also included historical aerial photos and Department of Commerce Tank registration database. Published Environmental Inventories, State and Federal environmental databases were obtained and reviewed by EDR, Inc. for listed properties within one mile of the project site. Information provided by EDR was reviewed by GAS personnel to determine potential nearby sources of contamination. The EDR report is included as Appendix A.

4.1.1 Subject Property

The Subject Property was listed in the EDR report received by GASAI on March 18, 2004. It included the following:

- Registration of two 30,000 Gallon fuel oil UST for a Back-up Generator and it is currently in use.
- One LUST was identified on the site and closed on February 11, 1997, with no further action required by the Wisconsin Department of Natural Resources (WDNR).
- A spill of ethylene oxide was reported on September 26, 1992 to the WDNR, no action was taken.
- A spill of ethylene oxide mixed with dichlorodifluoromethane was reported in an equipment room on September 4, 1991, the air was vented and the faulty gasket was replaced, no further action was taken.
- A spill of hydraulic fluid was reported on October 26, 1993, contaminated soil was removed and no further action was taken.
- The WI ERP shows evidence of soil contamination from fuel oil listed on June 9, 1993, the EDR report lists it as Low priority and no action is listed in the EDR Report.
- The EDR report lists the same hydraulic fluid spill, listed above on October 26, 1993, as an ERNS (Emergency Response Notification System) site. In this ERNS listing the hydraulic fluid spill totals 50 gallons and the action listed was “Absorbents Were Used.”

4.1.2 Nearby Sites

According to the EDR report, there are several listings near the Subject Property. These can be viewed in the enclosed EDR report (Appendix A), but were not reviewed in detail here due to the nature of the listings (small USTs and LUSTs which were listed as closed) and/or their distance from the Subject Property.
4.1.3 Orphan Sites

The EDR report lists several orphan sites for the City of Milwaukee and outlying areas. These are at locations that EDR was not able to place at a specific geographic location. They can be viewed in the enclosed EDR report (Appendix A). None of the orphan sites were at a location near the Subject Property.

4.2 Department of Commerce

Department of Commerce (DCOMM) underground storage tank (UST) and aboveground storage tank (AST) registration records (including fuel oil) for the City of Milwaukee, Milwaukee County, Wisconsin were reviewed via an internet connection to their Storage Tank database during April 2004. The database was used to further search the subject and adjacent properties, and the records are included in Appendix B.

4.2.1 Subject Site

The DCOMM report identified two 30,000-gallon UST fuel oil tanks in use on the Subject Property. No other records were identified for the Subject Property.

4.2.2 Nearby Sites

The DCOMM report identified two USTs on the UW-Milwaukee Campus at 2033 E. Hartford Avenue. These tanks were 5,000- and 6,000-gallon fuel oil tanks and both were listed as closed and removed. One AST is also listed on the UW-Milwaukee Campus at 3210 N. Cramer Avenue; it was installed in February of 2002 for use of a backup generator.

4.3 Building Permits – City of Milwaukee

On March 23 and 25, 2004 building permits for the Subject Property were reviewed. Many permits could not be reviewed or could only be partially reviewed either due to the clarity of the
microfiche sample or illegible handwriting. Provided below is a summary GAS’s findings as it pertains to this Phase 1 Environmental Assessment.

There were four permits issued dated May 23, 1929, December 13, 1948, July 31, 1950, and October 5, 1965 for the installation of boiler systems located at the 3321 North Maryland Avenue address (building 1). Though it is only stated in one of the permits found, oil was presumably the primary fuel used for the boiler systems during this time period. This assumption is based on additional findings in permits that were issued for oil storage rooms and oil tanks. For example, on January 11 and 18, 1957 permits were issued to build a 7’ X 10’ storage room adjacent to the boiler room for the address at 3321 North Maryland Avenue. The purpose of the additional room was to store motor oil, oil treatment, and firefighting liquid and grease. The approximate location of this storage room is shown on figure 2.

Several permit applications were observed that issued permits for the installation or alteration of fuel tanks on the premises. On August 24, 1950 a permit was issued to install two fuel tanks at the 3321 North Maryland Avenue address, each with a 20,000-gallon capacity; however, the fuel type that was to be stored was not found within the permit. On August 17, 1971 a permit was issued to reline an existing 20,000-gallon underground fuel oil storage tank with an approved glass armor epoxy material again at the Maryland Avenue address. The following day on August 18, 1971, an additional permit was issued to rebuild another 20,000-gallon fuel oil tank with the same armor epoxy material. It is assumed that these permits were granted to rebuild the tanks that had been originally installed in the 1950s, thus indicating that these original tanks were indeed used to hold fuel oil. On November 4, 1982, two new 30,000-gallon UL steel tanks were furnished and installed underground at the hospital building at the 2025 East Newport Avenue address (Figure 2). These new tanks also contained fuel oil. On September 30, 1997, a permit was granted to excavate, clean, and dispose of two 30,000-gallon heating oil underground storage tanks, presumably the same ones that were installed under the 1982 permit. However, on September 14, 1998, a tank upgrade permit was issued for most likely the same two tanks, indicating that the tanks had never actually been removed under the prior permit.

According to several observed letters from the City of Milwaukee Building Inspection and Safety Engineering, several violations had occurred during various times in various buildings on the premises as a result of oil leakage from elevators. The exact location of these violations could not be ascertained.
4.4 Sanborn Maps

Generally, historical maps published by the Sanborn Map Company, Inc. provide fire insurance information, such as locations of storage tanks and flammable storage areas, for densely populated areas dating back as far as the late 1800s. Three Sanborn Maps from 1929, 1950, and 1966 were identified for the Subject Site and are included in Appendix D. The Sanborn Map from 1966 shows the location of three USTs between the Columbia College of Nursing and Columbia Hospital. Also by 1966 several homes have been removed from the city block west of the hospital. These homes were either heated by fuel oil, coal, or natural gas.

4.5 Aerial Photographs

Aerial photographs were obtained from the Southeastern Wisconsin Regional Planning Commission for the years 1963, 1967, 1970, 1975, 1980, 1985, 1990, 1995 and 2000. These photographs were visually reviewed for changes in project site development. Copies of the 1963, 1967, and 2000 photographs are included as Figures 3, 4, and 5. Due to the clarity, scale of the aerals and the size of the Subject Property, only relatively large-scale objects and changes could be observed.

In the 1963 aerial photograph, the Subject Property takes up one and a half city blocks. The primary use of the property was for a hospital, the college of nursing, and parking lots. There are residential units north and west of the Subject Property, school buildings and residential units to the south, and a forested open lot to the east. There appears to be a mixed assembled building structure with add-ons from several expansions of the main hospital, in addition to the college of nursing and one out-building. Residential units were removed from the west for a total of a half city block.

In the 1967 aerial photograph, there were more residential units removed from the west of the hospital property and replaced with parking lots. On the Subject Property there are additional buildings, which appear to be connected to the west of the original hospital structure.

In the 1970 aerial photograph, there appears to be little change to the Subject Property. There
was additional expansion to the west as only four residential properties remained within the original city block. The removed residences were converted to parking lots. The forested lot to the east has a set of structures that appear to be associated with the UW-Milwaukee Campus.

In the 1975 aerial photograph, the subject property has expanded by removing the remaining four residential units and an additional half city block of residential units. A cul-de-sac was built to close off western access to the Newport Avenue entrance of the hospital, and a parking structure was added to the northwest corner of the expanded hospital property.

In the 1980 aerial photograph, the Subject Property appears to have added an expansion building to the west of the existing hospital buildings, while the surrounding areas appear to have little change.

In the 1985 aerial photograph, the Subject Property appears to have added an expansion building to the west of the existing hospital buildings, and an additional building between the College of Nursing and the Hospital, which we now know is the energy center. To the south of the Subject Property the several residential units on the UW-Milwaukee Campus were removed along Maryland Avenue.

In the 1990 aerial photograph, there appears to be no change on the subject property. To the south of the Subject Property the remaining residential units on the UW-Milwaukee Campus were removed along North Cramer Street.

In the 1995 aerial photograph, the Subject Property and the surrounding areas appear to have little change. The hospital expanded to the west, removing some parking lot in the southwest corner of the property.

No significant changes were observed in the 2000 aerial photograph.

4.6 Wisconsin Department of Natural Resources Files

The WDNR was contacted to review files pertaining to Columbia/St. Mary’s at multiple addresses associated with the facilities located on the southwest corner of Newport and North Maryland Avenues. The documentation in the file included a spill report from June 1993 related to petroleum-based compounds that were discovered during the excavation for an addition to the
south side of the Clinical Building. The estimated area is shown in Figure 2. The incident was investigated by Professional Service Industries (PSI), Inc., and documents by PSI dated June 22, 1993, and July 6, 1993 were reviewed.

Based on the documentation, petroleum compounds were detected in the soils of the excavation for new footings. Concentrations of the compounds were as high as 55 micrograms per kilogram (ug/kg) for benzene, 1,400 ug/kg ethylbenzene, and 37.3 milligrams per kilogram (mg/kg) Diesel Range Organics. Between 20 and 30 cubic yards of soil were removed and stockpiled on site. Arrangements were made for disposal of the soils at a Waste management facility; however, documentation of the disposal was not available. There was no indication in the documents that the site was closed, or whether the remedial actions had been deemed satisfactory. The source of the petroleum contamination was unknown.

5 SITE RECONNAISSANCE

The site reconnaissance was conducted by Brentt P. Michalek from Graef, Anhalt, Schloemer, and Associates, Inc. (GASAI) on March 30, 2004. The structures were viewed internally and externally. Selected site photographs from the site reconnaissance are available in Appendix C. There were restrictions on areas that could be photographed.

The Subject Property consisted of several buildings and additions to the original hospital and the Columbia College of Nursing. The buildings were divided into seven distinct sections and numerically identified on the enclosed subject map (Figure 2). The interior reconnaissance of the Subject Property consisted of the observation of the subfloors, lab areas, and maintenance rooms throughout the hospital.

The East Wing is identified as building 1 (Figure 2). The escorts for this building were primarily Neal Ward and Bill Robinson from hospital maintenance.

- In the subfloor of building 1, located to the east side of the elevators, were the main maintenance and maintenance equipment storage rooms for the entire hospital complex. Throughout these maintenance rooms several oils and synthetic lubricants were kept to maintain the equipment. With the exception of Room H16A, the floors of these rooms appeared to be clean and in good condition.
• Room H16A among the maintenance rooms, was the storage room for larger quantities synthetic lubricants and oils, as well as the storage and compression room for coolants (R22, R12, and R502) that maintain four large walk-in coolers located in the kitchen area of the hospital (Photograph 1). The floor in this room did appear stained, and concrete joints may allow transference of chemicals through the foundation.

• In the main chiller room, chemicals for cooling the hospital were stored in three approximate thirty-gallon drums. Each of these drums was stored in a separate secondary plastic containment. This room was called the “Fredrick Avenue Substation” and was located beneath the cafeteria patio per Neal Ward and Bill Robinson. The drums were in good condition, and the floors of these rooms appeared to be clean and in good condition.

• Room H51 was used to store cleaning chemicals. The floor was in good condition without stains.

• The paint storage rooms contained 50 to 80 five-gallon paint buckets, and 40 to 50 one-gallon paint cans. The floors of these rooms appeared to be clean and in good condition.

• Room H54Y contained the refrigerant (R22) for the mortuary and the unit was replaced less than one year ago, according to Bob Witkowski from hospital Maintenance. The floors of these rooms appeared to be clean and in good condition.

• The histology lab room 538 and its associated chemical storage room 547, was located on the 5th floor, various lab chemicals including xylene are stored in small containers and used in these rooms. The containers were in good condition and the floors of these rooms appeared to be clean and in good condition.

The West Wing is identified as building 2 (Figure 2). The escorts for this building were primarily Neal Ward and Bill Robinson from hospital maintenance. In the subfloor of this building is room B15 used for oncology and the storage of radioactive materials, room B16 used for the recapture of silver nitrate from old x-rays, and in room B24 Ethylene Oxide (EO) is stored. The floors of these rooms appeared to be clean and in good condition.

The Clinical Building is identified as building 3 (Figure 2). The escorts for this building were primarily Neal Ward and Bill Robinson from hospital maintenance. The clinical chiller is located
in the basement of this building and the room appeared to be clean and well kept. Chemicals for cooling the building were stored in three approximate thirty-gallon drums. Each of these drums was stored in a separate secondary plastic containment bin. The floors of these rooms appeared to be clean and in good condition.

The Medical Arts Building is identified as building 4 (Figure 2). The escorts for this building were primarily Neal Ward and Bill Robinson from hospital maintenance. Pool chemicals (Acid, Chloride, and Sodium Bicarbonate) are stored in the basement of this building and mixed to regulate the pool above this storage area. Spilled pool chemicals were observed throughout the floor of this room; they are apparently washed down the drain (Photograph 2). Neal Ward and Bill Robinson identified that they drain to room B58, a deep fan room, this room sends the chemicals to the storm sewer then to a pump room and out to the city. Another feature in the basement of this building is the Sani Pak Bio-Waste Incinerator; this incinerator destroys all bio-waste generated by hospital activities. The chiller room features the same quantities and types of chemicals identified in the previous buildings. Each of these drums was stored in a separate secondary plastic containment bin. The floors of these rooms appeared to be clean and in good condition.

The Parking Structure is identified as building 5 (Figure 2). The escort for this building was Gary Scott from hospital maintenance. The shop area located below ground had gasoline stored for maintenance equipment and an oil stained floor. According to Gary Scott, the area drains to the city sewer and the oil water separator noted in the plans, was not installed. At ground level in the northwest corner of this building is a room with 5 fifty-five gallon drums of diesel #1, staining is evident on the floor of this room (Photograph 3). Per Gary Scott they will typically use about three drums of fuel per year for maintenance equipment. A substation room accessed from the east wall of the bottom floor of the parking structure was used for storage.

The Columbia College of Nursing is identified as building 6 (Figure 2). The escort for this building was Bob Witkowski. One maintenance room in the basement of this building, the equipment in this room was being worked on per Bob Witkowski. Water was present on the floor due to the active work on the leaking gasket.

Filling locations for the two 30,000-gallon fuel oil tanks were observed between the energy center and the school of nursing (Photograph 4). A small surface stain was observed on the
pavement above these tanks.

6 INTERVIEWS

An environmental questionnaire was given to Mr. William Best, CSM Director of Safety, and Troy Karll, Lead Maintenance/Plant Engineer on March 20, 2004. Neither questionnaire has been returned as of the date of this report, and repeated attempts were made to contact them. According to Mr. Best in a telephone conversation, the 3 USTs South and East of the Energy Center would have to have had to be removed to facilitate the construction of the basement level of the Energy Center. No records of their closing were found in the DCOMM database, the EDR Report, or the WDNR file.

7 SUMMARY OF FINDINGS AND OPINION

The records search included readily obtainable documentation of the site and adjoining areas from local, state, and federal agencies. Areas observed during the site reconnaissance included only those that were readily accessible and did not include adjacent parcel building interiors. Intrusive measures, such as soil or groundwater testing, were not included in this investigation.

Investigative findings are summarized below.

1. Based on building permit records, elevator shafts have leaked hydraulic fluid. Although there were no specifications to review, older hydraulic fluids are known to have sometimes contained PCBs.

2. The two existing 30,000-gallon fuel oil tanks were identified, however, the three tanks identified (most likely 2-20,000 gallon and a smaller tank) on the Sanborn Maps and existing site plans were not located. In addition, no records were identified indicating their removal. Mr. Best made the assumption that if they are still in place at the subject site they would have interfered with construction of the energy building; therefore he says they would have been removed.

3. Five fifty-five gallon drums of diesel fuel were stored in the northwest corner of the parking structure, and staining was observed on the floor adjacent to the drums. Although obvious conduits for migration were not observed, due to the nature of the chemicals stored here (gasoline and fuel) there is the potential for subsurface
contamination.

4. The floor in Room H16A of building 1 did appear stained, and concrete joints may allow transference of chemicals through the foundation. Therefore, the chemicals stored in this room, synthetic lubricants and oils, and coolants may have potentially contaminated the environment.

5. There were other storage areas present in building 1 for paints, fuel, hydraulic fluid, cleaners, and coolant and chiller chemicals. The containers and floors in these areas were generally in good condition, and the storage of these chemicals are not likely to present a material risk of harm to public health or the environment.

6. Poolroom chemicals are stored and apparently spilled on the floor in the Medical Arts Building (Building 4). However, given the nature of these chemicals and the generally good condition of the floors in these areas, conditions associated with the storage of these chemicals are not likely to present a material risk of harm to public health or the environment.

7. Hospital chiller rooms each contained chemicals to help with the cooling and air purification process. The containers and floors in these rooms appeared to be in good condition.

8. One and a half blocks of single-family residential homes were removed during the hospital expansions throughout the last century. The fuel sources for these homes may have been coal or fuel oil at some time in the past. Given the nature of home fuel usage and the extensive excavation likely conducted for the demolition and new construction, the potential environmental conditions associated with these homes are not likely to present a material risk of harm to public health or the environment.

9. Based on historic building plans and experience at similar facilities, it is likely that chemical storage and use occurred in the basements of several of the buildings for extended periods of time. In addition to the fuels and solvents presently in use, mercury and other metals may have been used and disposed on site, and there is potential for historic spills of these chemicals onto the floor or leaks from sewer drain pipes.

10. The storage room adjacent to the boiler room was added near the northeast corner of building 1 for the purpose of additional storage of motor oil, oil treatment, and grease, and firefighting liquid. Considering the historic presence of fuel oil in the USTs and the associated piping in this area identified on plan 2(2) I Section 3, there is a potential for petroleum contamination in the area between building 1 and building
11. Records indicated spills of hydraulic fluid and fuel oil in 1993. The location of these spills could not be ascertained; however, the records indicate that these spills were limited in nature and contained.

12. Petroleum hydrocarbons were discovered in the soils during the excavation for an addition to the south side of building 3. Petroleum hydrocarbons may still be present in the soils at this location.

13. Lubricants and chemicals were observed in a variety of areas and these should be removed prior to demolition activities.

8 CONCLUSION

A Phase I Environmental Site Assessment was performed for the property located approximately at 2025 E Newport Avenue, Milwaukee, Wisconsin. This assessment has revealed the following recognized environmental conditions in connection with the Subject Property:

- Elevator shafts that leaked hydraulic fluids;
- Two 30,000 gallon fuel tanks that are currently in use, and two 20,000 gallon fuel oil tanks, and one smaller tank of unknown size that are no longer in use and that may have been removed; and storage of fuels in the northeast corner of building 1 and historic use of fuels in this area;
- Staining adjacent to fuel oil drums in the basement of the parking structure;
- Staining associated with chemical storage in RMH16A;
- Historic use and storage of chemicals in the basements of several of the buildings at the facility; and
- Petroleum hydrocarbons in the soils on the south side of building 3.
9 REFERENCES

ASTM Standards on Environmental Site Assessments for Commercial and Real Estate. 2000


FIGURES
SITE LOCATION MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
MILWAUKEE, WISCONSIN

SOURCE: USGS, 7.5 MINUTE SERIES, MILWAUKEE QUADRANGLE, WISCONSIN, REVISED 1971

PROJECT NUMBER: 2003 0330.09
DATE: 05-05-04
PROJECT MGR: BWS
DRAWN BY: JZ
FILE NAME: quad330.dgn
SCALE: 1' = 2,000'
REVISED:

GRAEF ANHALT SCHLOEMER
and Associates Inc.

FIGURE 1
FIGURES
SOURCE: USGS, 7.5 MINUTE SERIES, MILWAUKEE QUADRANGLE, WISCONSIN, REVISED 1971

SITE LOCATION MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
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PROJECT NUMBER: 2003 0330.09
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FIGURE 1
SITE LOCATION MAP

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
MILWAUKEE, WISCONSIN

SOURCE: USGS, 7.5 MINUTE SERIES, MILWAUKEE QUADRANGLE, WISCONSIN, REVISED 1971

PROJECT NUMBER: 2003 0330.09
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DRAWN BY: JZ
FILE NAME: quad330.dgn
SCALE: 1" = 2,000'
REVISED: 2003 0330.09

GRAEF ANHALT SCHLOEMER and Associates Inc.

FIGURE 1
1963 AERIAL PHOTOGRAPH

PHASE I ENVIRONMENTAL SITE ASSESSMENT
COLUMBIA ST. MARY'S HOSPITAL
2025 EAST NEWPORT AVENUE
MILWAUKEE, WISCONSIN

SOURCE: SOUTHEASTERN WISCONSIN REGIONAL PLANNING COMMISSION; T7N, R22E, SEC. 10

PROJECT NUMBER: 2003 0330.09
DATE: 05-05-04
PROJECT MGR: BWS
DRAWN BY: JZ
FILE NAME: 63qer330.dgn
SCALE: 1" = 400'
REVISED:

GRAEF ANHALT SCHOEMER and Associates Inc.

FIGURE 3
APPENDIX C.1
SPACE/BUILDING FIT
### UWM CSM Feasibility Study

#### Space/Building "Fit" Matrix

**Match Key:**
- ● Excellent: meets 4-5 criteria points.
- ○ Good: meets 3 criteria points.
- □ Fair: meets 2 criteria points.
- X Poor: meets 0-1 criteria point.

<table>
<thead>
<tr>
<th>Medical Arts Tower</th>
<th>Clinical Building</th>
<th>West Wing</th>
<th>East Wing</th>
<th>College of Nursing</th>
<th>E.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1992</td>
<td>1865</td>
<td>1941-1951</td>
<td>1969 (E)</td>
<td>1923 (B.C.)</td>
</tr>
<tr>
<td>Basement Ground</td>
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<td>○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○ ○</td>
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</tbody>
</table>

**Criteria Considered:**
1. Location within complex meets level of public or private access required.
2. Existing buildout of space can be readily converted to intended use.
3. Floor plate configuration allows efficient placement of program area.
4. Available space is large enough to accommodate desired program.
5. Existing infrastructure supports intended use.
APPENDIX C.2
SCHEMES CONSIDERED

SCHEME A.2
Building Plans
3-d Massing

SCHEME B.1
Building Plans
3-d Massing

SCHEME B.2
Building Plans
3-d Massing

SCHEME C.1
Building Plans
3-d Massing

SCHEME C.2
Building Plans
3-d Massing
A.2 MAXIMIZE RE-USE: MAXIMIZE PROGRAM

(coordinates with Site Concept Diagram A)

STUDENT LIFE
- 639 beds, 214,580 GSF
  (goal 600 beds, 270-363,000 GSF)

MAIN STREET
(Student Services/Classrooms)
- 207,608 GSF
  (need 182-254,000 GSF)

HEALTH
(include Psychology from "B" list)
- 211,384 GSF
  (need 202-248,000 GSF)

SUPPORT SPACE
- 51,070 GSF
  (need 42-62,000 GSF)

PARKING
- 750 spaces, 252,500 GSF

"B" LIST
- 85,761 GSF
  (need 84-103,900 GSF)
  - Graduate School
  - Research Centers
  - L&S Study Centers

"C" LIST
- 32,000 GSF
  (need 30,000-34,000 GSF)
  - Honors Program
  - University Relations & Communication
  - Secretary of the University

ACCOMMODATED ELSEWHERE
(needs 375,800-454,100 GSF; 224,000 accommodated by backfill on existing campus)
- Parking & Transit
- IIBT
- Mathematics
- Communications
- Journalism & Mass Comm
- Philosophy
- Urban Initiatives & Research
- Social Welfare
- Union Reservations
- Information Studies
- Milwaukee Idea Initiatives
- Project Management
- Student Organizations
- International Education

PROs
- meets beds need
- fills many "A", "B" and "C" items
- efficiently

CONs
- little to no room for growth
Scheme A.2

:: Maximizes re-use of all existing buildings and facilities.

:: No major changes to the building envelope.

:: New construction to allow buildings to meet requirements for code and safety conditions.

:: Accommodates many of the Priority A, B, and C program items.

:: Program can be laid out in an efficient and effective manner within the existing buildings.

University of Wisconsin - Milwaukee Feasibility Study
Columbia-St. Mary's Campus
Campus Diagram - Strategy for Maximized Re-Use: Maximize Beds or Program
B.1 MODERATE REPLACEMENT: MAXIMIZE BEDS
(coordinates with Site Concept Diagram B)

STUDENT LIFE
- 1,042 beds, 406,553 GSF
  (goal 600 beds, 270-365,000 GSF)

STUDENT SERVICES ("Main Street")
- 201,049 GSF
  (need 182-254,000 GSF)

HEALTH
- 199,590 GSF
  (need 186-226,000 GSF)

SUPPORT SPACE
- 89,630 GSF
  (need 42-62,000 GSF)

"B" LIST
- Accommodated on existing campus
  (need 250,000-320,000 GSF)

"C" LIST
- Accommodated on existing campus
  (need 256,000-312,000 GSF)

PARKING
- 1,250 spaces, 425,000 GSF
  (existing: 750 spaces, 252,500 GSF)

PROs
- max beds/revenue
- fit all "A" items
- opportunity for more beds

CONS
- little room for academic or administration growth
Scheme B.1

- Significant re-use of existing buildings and facilities.
- No major changes to the building envelope.
- Demolition and new construction are utilized to remedy the least efficient and most problematic portions of the campus in terms of code and safety.
- Demolition of Energy Center to create connectivity between existing student housing and the new student housing proposed with this project.
- Accommodates all of the Priority A, B, and C program items.
- Scheme allows for future growth of student housing.
B.2 MODERATE REPLACEMENT : MAXIMIZE PROGRAM
(coordinates with Site Concept Diagram B)

**STUDENT LIFE**
- 639 beds, 220,680 GSF
  (goal 600 beds, 270-363,000 GSF)

**STUDENT SERVICES**
("Main Street")
- 213,364 GSF
  (need 182-254,000 GSF)

**HEALTH**
(Include Psychology from "B" list)
- 208,875 GSF
  (need 202-248,000 GSF)

**SUPPORT SPACE**
- 42,403 GSF
  (need 42-62,000 GSF)

**"B" LIST**
- 182,429 GSF
  (need 183,900-225,600 GSF)
  - Parking & Transit
  - Graduate School
  - Research Centers
  - LBS Study Centers
  - Communications
  - Journalism & Mass Comm
  - International Education

**"C" LIST**
- 100,000 GSF
  (need 215,900-273,800 GSF)
  - Urban Initiatives & Research
  - Milwaukee Idea Initiatives
  - Project Management
  - University Relations & Communication
  - Honors Program
  - Philosophy
  - Secretary of the University

**BACKFILL TO CAMPUS**
- 234,000 GSF
  (need 235,500-296,800 GSF)
  - Student Organizations
  - Kunkel Center Daycare
  - ISMT
  - Mathematics
  - Social Welfare
  - Union Reservations
  - Information Studies

**PARKING**
- 1,250 spaces, 425,000 GSF
  (existing: 750 spaces, 252,500 GSF)

**PROs**
- meets bed need
- fits all "A", "B" and "C" items
- opportunity for growth

**CONS**
- cost for demolition
- cost for building new
Scheme B.2

- Partial re-use of existing facility and partial new construction to achieve project goals.
- Demolition and new construction are utilized to remedy the least efficient and most problematic portions of the campus in terms of code and safety.
- Demolition of Energy Center to create connectivity between existing student housing and the new student housing proposed with this project.
- Accommodates all of the Priority A, B, and C program items.
- Scheme allows for future growth.
C.1 EXPANDED REPLACEMENT: MAX BEDS
(coordinates with Site Concept Diagram C)

STUDENT LIFE
- 1,073 beds, 456,080 GSF
  (goal 690 beds, 270-363,000 GSF)

STUDENT SERVICES
("Main Street")
- 240,893 GSF
  (need 182-259,000 GSF)

HEALTH
(include Psychology from "B" list)
- 254,655 GSF
  (need 202-248,000 GSF)

SUPPORT SPACE
- 42,403 GSF
  (need 42-62,000 GSF)

"B" LIST
- 186,000 GSF
  (need 196,000-231,700 GSF)
  - Graduate School
  - Research Centers
  - L&S Study Centers
  - Communications
  - Journalism & Mass Comm
  - Urban Initiatives & Research

"C" LIST
- 69,700 GSF
  (need 72,000-84,000 GSF)
  - Project Management
  - University Relations & Communication
  - Honors Program
  - Philosophy
  - Secretary of the University
  - Milwaukee Idea Initiatives

PARKING
(include Parking & Transit from "B" list)
- 590 spaces, 321,500 GSF
  (existing: 750 spaces, 282,500 GSF)

ACCOMMODATED ELSEWHERE
(need 264,000-362,000 GSF; 234,000
accommodated by backfill on existing campus)
- Student Organizations
- International Education
- Kunde Center Daycare
- HSM
- Mathematics
- Social Welfare

PROs
- exceeds bed need - maximize revenue
- fits "A", "B" and "C" items
- opportunity for growth

CONs
- increased costs for demolition
- increased costs for building new
dense Hartford/Maryland corner
:: Partial re-use of existing facility and partial new construction to achieve project goals.

:: Significant redevelopment of the Maryland and Hartford corner through demolition of the oldest buildings within the complex.

:: Demolition and new construction are utilized to remedy the least efficient and most problematic portions of the campus in terms of code and safety.

:: Demolition of Energy Center to create connectivity between existing student housing and the new student housing proposed with this project.

:: Maximum revenue is possible with this scheme due to the ability to exceed the minimum housing requirement.

:: Accommodates all of the Priority A, B, and C program items.
Scheme C.2

- Partial re-use of existing facility and partial new construction to achieve project goals.
- Significant redevelopment of the Maryland and Hartford corner through demolition of the oldest buildings within the complex.
- Demolition and new construction are utilized to remedy the least efficient and most problematic portions of the campus in terms of code and safety.
- Demolition of Energy Center to create connectivity between existing student housing and the new student housing proposed with this project.
- Maximum revenue is possible with this scheme due to the ability to exceed the minimum housing requirement.
- Accommodates all of the Priority A, B, and C program items.
APPENDIX D.1

SUMMARY OF BUDGET ESTIMATE
<table>
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<th>DESCRIPTION COMPONENT</th>
<th>COST S.F.</th>
<th>COST</th>
<th>% OF TOTAL COMPONENT</th>
<th>COST S.F.</th>
<th>COST</th>
<th>% OF TOTAL COMPONENT</th>
<th>COST S.F.</th>
<th>COST</th>
<th>% OF TOTAL COMPONENT</th>
<th>COST S.F.</th>
<th>COST</th>
<th>% OF TOTAL PROJECT</th>
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<td>309,038</td>
<td>1,125,278</td>
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<td>288,772</td>
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<td>Total Design Fees</td>
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<td>D S F Management @ 4.00% of Total Const. and Cont. Costs</td>
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<td>$3.22</td>
<td>3.42%</td>
<td>$778,531</td>
<td>$3.58</td>
<td>3.42%</td>
<td>$527,862</td>
<td>$2.54</td>
<td>3.42%</td>
<td>$287,691</td>
<td>$0.74</td>
<td>3.42%</td>
</tr>
<tr>
<td>Project Contingency @ 7.00% of Total Construction Costs</td>
<td>$2,056,148</td>
<td>$5.26</td>
<td>5.59%</td>
<td>$1,073,998</td>
<td>$5.02</td>
<td>4.79%</td>
<td>$693,325</td>
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<td>5.59%</td>
<td>$374,354</td>
<td>$1.11</td>
<td>5.59%</td>
</tr>
<tr>
<td>Movable Equipment @ 6.00% of Total Construction Costs</td>
<td>$1,762,413</td>
<td>$4.51</td>
<td>4.79%</td>
<td>$981,018</td>
<td>$5.02</td>
<td>4.79%</td>
<td>$700,993</td>
<td>$3.55</td>
<td>4.79%</td>
<td>$320,875</td>
<td>$0.99</td>
<td>4.79%</td>
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<tr>
<td>Special Equipment</td>
<td>$0</td>
<td>$0.00</td>
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<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
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<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
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<tr>
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<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
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<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>Land</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
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<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>Percent for the Arts</td>
<td>@ 0.025% of Total Project Costs</td>
<td>$9,787</td>
<td>$0.03</td>
<td>0.03%</td>
<td>$6,061</td>
<td>$0.03</td>
<td>0.03%</td>
<td>$4,109</td>
<td>$0.02</td>
<td>0.03%</td>
<td>$1,782</td>
<td>$0.01</td>
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<tr>
<td>TOTAL PROJECT BUDGET ESTIMATE</td>
<td>$36,808,964</td>
<td>$94.21</td>
<td>100.00%</td>
<td>$22,784,462</td>
<td>$104.90</td>
<td>100.00%</td>
<td>$15,455,168</td>
<td>$74.22</td>
<td>100.00%</td>
<td>$6,701,646</td>
<td>$21.69</td>
<td>100.00%</td>
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</tbody>
</table>

### Notes:
1. This worksheet allocates the cost of support space and unallocated costs to the cost of Student Life, Main St./Student Services & Classrooms, and Health based upon the area in such categories.
APPENDIX D.1
SUMMARY OF BUDGET ESTIMATE
<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>TOTAL SQUARE FEET</th>
<th>STUDENT LIFE</th>
<th>MAIN ST./STUDENT SERVICES &amp; CLASSROOMS</th>
<th>HEALTH</th>
<th>PARKING</th>
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</thead>
<tbody>
<tr>
<td>Base Building / Remodeling Cost</td>
<td>$19,986,434</td>
<td>$51.15</td>
<td>54.30%</td>
<td>$15,117,865</td>
<td>$69.57</td>
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<td>Special Foundations &amp; Site Preparation</td>
<td>$123,087</td>
<td>$0.32</td>
<td>0.33%</td>
<td>$68,451</td>
<td>$0.32</td>
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<tr>
<td>Special Design Features / Other Construction</td>
<td>$5,034,130</td>
<td>$12.88</td>
<td>13.68%</td>
<td>$1,052,209</td>
<td>$2.82</td>
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<tr>
<td>Built - In Equipment</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
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<tr>
<td>Special Mechanical / Electrical Systems</td>
<td>$1,837,027</td>
<td>$4.70</td>
<td>4.99%</td>
<td>$1,052,209</td>
<td>$4.84</td>
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<td>Building Complexity</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
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<tr>
<td>Total Building / Remodeling Cost</td>
<td>$27,194,732</td>
<td>$75.18</td>
<td>79.80%</td>
<td>$16,978,292</td>
<td>$83.71</td>
</tr>
<tr>
<td>Utility / Service Extensions</td>
<td>$413,043</td>
<td>$1.06</td>
<td>1.12%</td>
<td>$229,702</td>
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<td>Site Development</td>
<td>$967,508</td>
<td>$2.48</td>
<td>2.63%</td>
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<td>Project Location / Site Conditions</td>
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<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
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<td>Telecommunications</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
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<tr>
<td>Asbestos / Lead / Environmental Clean - Up</td>
<td>$176,251</td>
<td>$4.51</td>
<td>4.79%</td>
<td>$443,929</td>
<td>$2.04</td>
</tr>
<tr>
<td>Total Construction Costs</td>
<td>$29,373,545</td>
<td>$75.18</td>
<td>79.80%</td>
<td>$18,189,974</td>
<td>$83.71</td>
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<tr>
<td>Design Fees - @ 8.00% of Total Construction Costs</td>
<td>$2,349,884</td>
<td>$6.01</td>
<td>6.38%</td>
<td>$1,455,198</td>
<td>$5.70</td>
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<tr>
<td>Other Design Fees - @ 0.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Design Fees</td>
<td>$2,349,884</td>
<td>$6.01</td>
<td>6.38%</td>
<td>$1,455,198</td>
<td>$5.70</td>
</tr>
<tr>
<td>D S F Management - @ 4.00% of Total Const. and Cont. Costs</td>
<td>$1,257,188</td>
<td>$3.22</td>
<td>3.42%</td>
<td>$779,531</td>
<td>$3.58</td>
</tr>
<tr>
<td>Project Contingency - 7.00% of Total Construction Costs</td>
<td>$2,056,148</td>
<td>$5.26</td>
<td>5.59%</td>
<td>$1,052,209</td>
<td>$5.96</td>
</tr>
<tr>
<td>Miscellaneous Equipment - @ 6.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Special Equipment - @ 0.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Other Allowances - @ 0.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Land - @ 0.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Percent for the Arts - @ 0.00% of Total Construction Costs</td>
<td>$0</td>
<td>$0.00</td>
<td>0.00%</td>
<td>$0</td>
<td>$0.00</td>
</tr>
<tr>
<td>Total Design - Contingency / Allowances Costs</td>
<td>$7,435,419</td>
<td>$19.03</td>
<td>20.20%</td>
<td>$4,604,483</td>
<td>$21.19</td>
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<tr>
<td>TOTAL DESIGN / BUDGET ESTIMATE</td>
<td>$36,808,964</td>
<td>$94.21</td>
<td>100.00%</td>
<td>$22,784,462</td>
<td>$104.90</td>
</tr>
</tbody>
</table>

**NOTES:**
1. This worksheet allocates the cost of support space and unallocated costs to the cost of Student Life, Main St./Student Services & Classrooms, and Health based upon the area in such categories.
APPENDIX D.2
DETAILED CONSTRUCTION COST ESTIMATES
## UNIVERSITY OF WISCONSIN - MILWAUKEE
COLUMBIA - ST. MARY’S CAMPUS

### Construction Cost Matrix

<table>
<thead>
<tr>
<th>BUILDING &amp; FLOOR DESCRIPTION</th>
<th>FLOOR AREA (SF)</th>
<th>INTERIOR DEMOLITION</th>
<th>FINISHES / NEW STRUCTURE</th>
<th>PLUMBING</th>
<th>FIRE PROTECTION</th>
<th>MECHANICAL</th>
<th>ELECTRICAL</th>
<th>SPECIAL MECHANICAL / ELECTRICAL SYSTEMS</th>
<th>TESTING &amp; BALANCING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
</tbody>
</table>

### Notes:
1) All prices above are based on year 2004 pricing and do not include inflation.

© 2004 Hunzinger Construction Company
November 12, 2004
### Construction Cost Matrix

**A1: Maximize Reuse - Maximize Beds**

#### Student Life

<table>
<thead>
<tr>
<th>Building &amp; Floor Description</th>
<th>Base Building / Remodeling Cost</th>
<th>Special Mechanical / Electrical Systems</th>
<th>Testing &amp; Balancing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Building &amp; Floor Description</strong></td>
<td><strong>Floor Area</strong> (SF)</td>
<td><strong>Interior Demolition</strong></td>
<td><strong>Finishes / New Structure</strong></td>
</tr>
</tbody>
</table>

#### Notes:

1) All prices above are based on year 2004 pricing and do not include inflation.

---

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**November 12, 2004**

**Page 3**
### MAIN STREET / STUDENT SERVICES & CLASSROOMS

**CONSTRUCTION COST MATRIX**

**A1: MAXIMIZE REUSE - MAXIMIZE BEDS**

<table>
<thead>
<tr>
<th>BUILDING &amp; FLOOR DESCRIPTION</th>
<th>FLOOR AREA (SF)</th>
<th>INTERIOR DEMOLITION</th>
<th>FINISHES / NEW STRUCTURE</th>
<th>PLUMBING</th>
<th>FIRE PROTECTION</th>
<th>MECHANICAL</th>
<th>ELECTRICAL</th>
<th>SPECIAL MECHANICAL / ELECTRICAL SYSTEMS</th>
<th>TESTING &amp; BALANCING</th>
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<tbody>
<tr>
<td>Medical Arts Building</td>
<td></td>
<td>Cosmetic Work</td>
<td>Moderate Work</td>
<td>Complete Demo</td>
<td>All New Finishes</td>
<td>All New Plumbing</td>
<td>All New Piping</td>
<td>All New HVAC</td>
<td>All New Electric</td>
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<td>Basement Level</td>
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</tr>
<tr>
<td>Ground Level</td>
<td>19,875</td>
<td>$6.36</td>
<td>$21.32</td>
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<td>$2.12</td>
<td>$9.50</td>
<td>$7.10</td>
<td>$1.17</td>
<td>$2.12</td>
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<td>Eighth Level</td>
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<td>Basement Level - Existing</td>
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<td>$9.50</td>
<td>$7.10</td>
<td>$1.17</td>
<td>$2.12</td>
</tr>
<tr>
<td>First Level - Existing</td>
<td>29,281</td>
<td>$6.36</td>
<td>$21.32</td>
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<td>$9.50</td>
<td>$7.10</td>
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<td>$9.50</td>
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<tr>
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<td>$9.50</td>
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<tr>
<td>Ground Level - Existing</td>
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<tr>
<td>First Level - New</td>
<td>47,585</td>
<td>$8.40</td>
<td>$27.56</td>
<td>$5.94</td>
<td>$2.12</td>
<td>$9.50</td>
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</tr>
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<td>Fifth Level - New</td>
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<td>$2.12</td>
<td>$9.50</td>
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**NOTES:**

1) All prices above are based on year 2004 pricing and do not include inflation.

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November 12, 2004

Page 4
### MAIN STREET / STUDENT SERVICES & CLASSROOMS

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**Notes:**
1. All prices above are based on year 2004 pricing and do not include inflation.
## Construction Cost Matrix

### A1: Maximize Reuse - Maximize Beds

#### Health

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#### Notes:
- All prices above are based on year 2004 pricing and do not include inflation.

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November 12, 2004
Page 6
### HEALTH

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### COLLEGE OF NURSING

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### BURDEN COSTS

- Estimating Contingency: 7.00%
- G & C's & Corruption Fee: 14.00%

### FINAL TOTALS

- $861,404
- $809,713
- $1,127,702
- $1,502,946
- $276,470
- $409,713

### NOTES:

1) All prices above are based on year 2004 pricing and do not include inflation.
### MEDICAL ARTS BUILDING

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**Building Totals:** $205,950

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**Building Totals:** $68,650

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**Building Totals:** $263,950

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**Building Totals:** $102,975

### NOTES:

1) All prices above are based on year 2004 pricing and do not include inflation.
## SUPPORT SPACE

<table>
<thead>
<tr>
<th>BUILDING &amp; FLOOR DESCRIPTION</th>
<th>FLOOR AREA (SF)</th>
<th>BASE BUILDING / REMODELING COST</th>
<th>SPECIAL MECHANICAL / ELECTRICAL SYSTEMS</th>
<th>TESTING &amp; BALANCING</th>
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<td>All New Plumbing</td>
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### COLLEGE OF NURSING

- **Ground Level - Existing**
- **Second Level - Existing**
- **Third Level - Existing**
- **Fourth Level - Existing**
- **First Level - New**
- **Second Level - New**
- **Third Level - New**
- **Fourth Level - New**

### BUILDING & FLOOR DESCRIPTION

- **Ground Level - Existing**: $74,785
- **Fourth Level - Existing**: $87,199
- **Third Level - Existing**: $14,000
- **Second Level - Existing**: $35,141
- **First Level - Existing**: $11,098
- **Second Level - New**: $251,546
- **Third Level - New**: $251,546
- **Fourth Level - New**: $251,546
- **First Level - New**: $207,599

### Build Costs

- **Ground Level - Existing**: $285,380
- **Fourth Level - New**: $306,868
- **Third Level - New**: $158,544
- **Second Level - New**: $158,544
- **First Level - New**: $158,544

### FLOOR AREA (SF)

- **Ground Level - Existing**: 74,785
- **Fourth Level - Existing**: 87,199
- **Third Level - Existing**: 14,000
- **Second Level - Existing**: 35,141
- **First Level - Existing**: 11,098
- **Second Level - New**: 251,546
- **Third Level - New**: 251,546
- **Fourth Level - New**: 251,546
- **First Level - New**: 207,599

### ESTIMATING CONTINGENCY

- **Building Total**: $237,816

### BURDEN COSTS

- **Estimating Contingency**: 7.00%
- **G.C.'s & Contractors Fee**: 14.00%

### FINAL TOTALS

- **Building Total**: $475,633

### NOTES:

1) All prices above are based on year 2004 pricing and do not include inflation.
## Clinical Building Notes:

- **East Wing**

-Columbia - St. Mary's Campus

- **Final Totals**
  - $2,999,403

### Building Totals

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<tr>
<th>Description</th>
<th>Level</th>
<th>Area</th>
<th>Cost/Unit</th>
<th>Total Cost</th>
<th>VAT</th>
<th>Net Cost</th>
<th>Contingency</th>
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### Length Height Total

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<th>Total Cost</th>
<th>VAT</th>
<th>Net Cost</th>
<th>Contingency</th>
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- **Length**
  - 1,320
  - 1,502
  - 1,798
  - 492
  - 492
  - 492
  - 492
  - 362
  - 632
  - 608
  - 626
  - 234
  - 680
  - 680
  - 680
  - 730
  - 762
  - 874
  - 874
  - 882
  - 792
  - 682

- **Height**
  - 15.33
  - 12.21
  - 11.56
  - 11.33
  - 11.33
  - 12.67
  - 11.79
  - 16.79
  - 11.49
  - 13.11
  - 14.00
  - 9.17
  - 9.08
  - 9.17
  - 10.96
  - 10.00
  - 13.04
  - 18.38
  - 15.17
  - 12.08
  - 11.56
  - 11.56

- **Total**
  - 20,240
  - 18,337
  - 20,789
  - 5,576
  - 5,576
  - 5,576
  - 6,232
  - 6,079
  - 7,261
  - 7,974
  - 8,764
  - 2,145
  - 6,177
  - 6,233
  - 6,233
  - 8,000
  - 7,620
  - 10,329
  - 16,060
  - 13,256
  - 10,657
  - 7,886
  - 9,669
  - 7,886

### Cost

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### Notes:

1. All prices above are based on year 2004 pricing and do not include inflation.
### UNIVERSITY OF WISCONSIN - MILWAUKEE
COLUMBIA - ST. MARY'S CAMPUS

#### - SITEWORK -
**A1: MAXIMIZE REUSE - MAXIMIZE BEDS**

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<td>2) Demo Steam Utilities</td>
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<td>3) Storm Utilities</td>
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<td>4) Steam Utilities</td>
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<td>5) Chilled Water Utilities</td>
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<td>6) Sanitary Utilities</td>
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<td>7) Electrical Services Upgrades</td>
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<td><strong>Subtotal Cost</strong></td>
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<td><strong>G.C.'s &amp; Contractors Fee</strong></td>
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<tr>
<td><strong>Estimating Contingency</strong></td>
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<tr>
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<td><strong>FINAL TOTALS</strong></td>
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<tr>
<th>SITE DEVELOPMENT</th>
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<td>1) Demo Asphalt Pavement &amp; Sidewalks</td>
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<td>2) Site Cut &amp; Fill</td>
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<td>3) Site Grading</td>
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<td>4) Retaining Walls</td>
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<td>28) ADA Upgrades for Site</td>
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<td>29) Right of Way Modifications</td>
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<td>30) Road Repairs</td>
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**NOTES:**
1. All prices above are based on year 2004 pricing and do not include inflation.

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### - MISCELLANEOUS ITEMS -
**A1: MAXIMIZE REUSE - MAXIMIZE BEDS**

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<tr>
<td>2) Repair Spalled Concrete Columns</td>
<td>$21,200</td>
</tr>
<tr>
<td>3) Replace Stairs in Stairshaft (East Wing)</td>
<td>$42,400</td>
</tr>
<tr>
<td>4) Roof Patching</td>
<td>$159,000</td>
</tr>
<tr>
<td><strong>Subtotal Cost</strong></td>
<td>$265,200</td>
</tr>
<tr>
<td><strong>Contingency</strong></td>
<td>7.00%</td>
</tr>
<tr>
<td><strong>G.C.'s &amp; Contractors Fee</strong></td>
<td>$265,200</td>
</tr>
<tr>
<td><strong>FINAL TOTALS</strong></td>
<td>$272,400</td>
</tr>
</tbody>
</table>

**NOTES:**
1. All prices above are based on year 2004 pricing and do not include inflation.
APPENDIX D.3
YEARLY ESCALATION ESTIMATES
Yearly Escalation Estimates

This study’s estimated cost for renovation and construction is in 2004 dollars. Depending on when construction contracts will be bid, estimates must be adjusted for escalation. The following table represents future construction cost projections based on the construction industry’s Engineering News Record (ENR) building cost indices.

<table>
<thead>
<tr>
<th>Bid Date</th>
<th>ENR Index</th>
<th>Escalation Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>July - 2004</td>
<td>4127</td>
<td>0.0%</td>
</tr>
<tr>
<td>&quot; - 2005</td>
<td>4251</td>
<td>3.0%</td>
</tr>
<tr>
<td>&quot; - 2006</td>
<td>4406</td>
<td>6.8%</td>
</tr>
<tr>
<td>&quot; - 2007</td>
<td>4567</td>
<td>10.7%</td>
</tr>
<tr>
<td>&quot; - 2008</td>
<td>4798</td>
<td>14.2%</td>
</tr>
<tr>
<td>&quot; - 2009</td>
<td>4916</td>
<td>18.0%</td>
</tr>
<tr>
<td>&quot; - 2010</td>
<td>5057</td>
<td>20.9%</td>
</tr>
<tr>
<td>&quot; - 2011</td>
<td>5137</td>
<td>24.5%</td>
</tr>
</tbody>
</table>