Program Statement & Pre-Design Study for

UWM Student Health Services

at the University of Wisconsin-Milwaukee’s Northwest Quadrant
Approved by:

DFD Project Manager: ___________________________________________ Date:________

Agency Representative: __________________________________________ Date:________

Institutional Representative: _______________________________________ Date:________

A/E Representative: ____________________________________________ Date:________

Commonly Used Abbreviations and Terminology:

ASF - Assignable Square Footage
GSF - Gross Square Footage
Norris Health Center - Name of existing campus facility
NWQ - Northwest Quadrant
SHS - Student Health Services
Student Health Services - Name of proposed campus facility
UWM - University of Wisconsin-Milwaukee
Student Health Services is comprised of a wide range of services and programs serving the University of Wisconsin-Milwaukee community. Its proposed location is in portions of NWQ-B Floor 1, all of NWQ-B Floor 2, and portions of NWQ-C Floor 2.
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Preface

This Program Statement/Pre-Design Study defines the University of Wisconsin – Milwaukee’s current and future needs for the Student Health Services. This study is one of nine undertaken for redevelopment of the Northwest Quadrant, a facility formerly occupied by Columbia - St. Mary’s Hospital. Together, these and other associated Program Statement/Pre-Designs along with the Northwest Quadrant Redevelopment Plan form an integrated and cost-effective adaptive re-use strategy for the major hospital building purchased by the Board of Regents of the University of Wisconsin System in 2010.

Implementation of the NWQ redevelopment will occur in several phases. This particular phase addresses the needs of the Student Health Services.

This Program Statement/Pre-Design quantifies a 10 year growth projection and, in many cases, documents deficiencies of current Norris Health Center facilities (Note: The existing facility is referenced as Norris Health Center; the proposed facility is referenced as UWM Student Health Services). This document will serve as the basis for design of the future facility and is the culmination of several months of meetings with staff from Student Health Services, UWM staff and Campus Planning, UW System, DFD, and the Quorum Architects, Inc. project team. Specific details will be addressed at the time of design to accommodate market changes and actual conditions and needs at the time.

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NWQ-B Exterior Conceptual Rendering
Executive Summary

1.1. General Project Scope & Description
1.2. Specific Challenges or Objectives to be Resolved & Alignment with Academic Unit Strategic Plan
1.3. Relationship to Institution Master Plan
1.4. Summarized Space Tabulation
1.5. Budget Summary
1.6. Schedule Summary
1.7. Institution & Building Site Plan
1.1. General Project Scope & Description

This project will remodel approximately 34,500 GSF of space in the Northwest Quadrant (NWQ) of the University of Wisconsin-Milwaukee for Student Health Services. It will be located on the Floor 1 of NWQ-B and Floor 2 of NWQ-B and NWQ-C. The new facility will replace the 14,180 GSF Norris Health Center and approximately 1,300 GSF in other buildings. Space will be provided for services outlined in the UW System basic health module that include:

- Clinical Services: medical exam rooms, nursing, medical practitioner officers, pharmacy, lab and support spaces;
- Mental Health and Counseling Services: practitioner office/counseling space, education space and support spaces;
- Alcohol and Other Drug (AODA) Counseling: practitioner offices/counseling space, education space, and support spaces;
- Health Promotion and Wellness Services – practitioner officers, education space, and support space.

The NWQ contains the former Columbia – St. Mary’s (CSM) hospital campus. CSM moved to a new facility in 2009 and in May of 2010, NWQ was purchased by the university, adding 10.9 acres and approximately 850,000 GSF of building space to campus. This is the largest addition of land and existing building area to the campus since the acquisition of the Downer Seminary, Downer College, and Milwaukee University School properties between 1961 and 1965. It will provide about half of the space needs identified by the 2010 Campus Master Plan.

The NWQ has received minimal maintenance since the early 1990’s in anticipation of a move to new facilities. The mechanical systems for heating and cooling are not energy efficient by current standards but with planned upgrades will be in condition for continued use. Electrical outlets, lighting, phone, and data will need to be upgraded for the new uses.

Student Health Services has been located in the Norris Health Center for approximately 50 years, since its acquisition with the Milwaukee-Downer College purchase. It was built in 1961 to house student health and nursing for Milwaukee-Downer College and UWM when the head count was 8,713. Increases in student enrollment and changes in clinical and mental health care demands brought growth of staffing, an increased need for confidential work space, and a need for education work space. Changes were made in Norris to address the need for more space, starting in the late 1990’s when attic space was finished to bring the total space to 14,180 GSF. In 2005-2008, continued space shortages led to relocating four administrative functions: purchasing, IT, business, and human resources to Merrill Hall. Still later, in a continuing effort to improve crowded conditions and meet standards for the counseling and consultation department, Student Health Promotion and Wellness was relocated to the Student Union.

Student Health Services provides care to approximately 10,000 students annually and has over 30,000 service contacts. With peak visits at 200 per day, or 25 visits per hour, the current space can only meet the basic needs of students. The new space will be sized to improve service with shorter waiting time, and to enhance services so that students minimize visits to local hospital emergency rooms for non-emergent health and mental health care needs and basic procedures. Expansion and relocation of the Student Health Services in the NWQ will bring together all components of integrated health services, providing more efficient operation and more coordinated services to students.

An updated facility will also ensure continued accreditation from the Accreditation Association for Ambulatory Health Care (AAAHC) and meet the standards of the International Association of Counseling Services (IACS) indicating a facility that provides high quality care for students. Accreditation occurs every three years; the next one is scheduled for fall of 2015. An indication of a plan for improving facilities will prove beneficial towards achieving continued accreditation.
1.2. **Specific Challenges or Objectives to be Resolved & Alignment with Strategic Plan**

UWM Student Health Services’ core values, mission, and vision are built on the principles UW System Basic Health Module and is closely aligned with the American College Health Association, the Division of Student Affairs and the University Strategic Plan.

The UWM Division of Student Affairs Vision Statement - *to be recognized as the premier Student Affairs Division, innovative in creating a thriving student-centered learning community that is dedicated to students’ well-being, success, personal growth, and professional development* - illustrates the commitment of the Division and University to student well-being and recognition of its foundation to a student’s success.

Addressing students’ health and wellbeing has been identified as a prioritized retention strategy through the University’s Best Place to Learn initiative and is a current focus within the strategic planning process. Student Health Services leads these efforts addressing the shorter range goals with a review of existing wellness and prevention trainings across campus community and the implementation of programs with an outcome of improving student’s overall physical and mental wellness. The longer term goal identified within this initiative, expansion of delivery of mental and physical health care on campus and of student’s access to care, will be able to be achieved through the construction of a new facility.

Student Health Service’s provision of student-centered services, professional excellence, multidisciplinary and collaborative approaches to health, and partnerships in research and education is recognized by students, faculty, staff, administrators, and parents as an essential service to the entire community.

*Image 1.2.1. Student Health Services Staff and Student*
1.3. Relationship to Institution Master Plan

The 2010 University of Wisconsin-Milwaukee Master Plan outlined a vision for land and building use and established a planning framework to make that vision a reality. It was the first campus master plan completed since 1972, and the report analyzed current campus use, prescribed design guidelines for future development, and set sustainability goals. Much of the report involved visioning future development of UWM’s main Kenwood Campus, located in Milwaukee’s Eastside neighborhood.

The NWQ Space Planning Study identified Student Health Services as an urgent, preferred Long-Term User of the NWQ site for a number of reasons. The study found that the current Norris Health Center is grossly undersized and unable to handle its approximately 30,000 yearly visits. Additionally, the Northwest Quadrant site was identified as a viable option for relocation because of some existing building features on the site that could accommodate healthcare services (the site formerly accommodated a hospital). Further back, the 2010 Campus Master Plan also emphasized growth in counseling and mental health programs and the strong need for additional health and wellness space. The Master Plan indicated a need of an additional 10,000 ASF/20,000 GSF, citing model space guidelines for university clinics.

It has been repeatedly recommended that Student Health Services relocate to a space that can accommodate the needs of UWM students and the campus community and embody a modern health care delivery approach. This will enable Student Health Services to continue to fulfill its mission of providing quality health care and wellness services to the UWM student population and to support partnerships in health with the UWM community.

1.4. Summarized Space Tabulation

Table 1.4.1. shows proposed program for the Student Health Services, organized by functional category. ASF represented in this table represents program, not fit plan square footages. Assignable Square Feet and Gross Square Feet presented in the budget summaries (Table 1.5.1 and in Section 9) are based on fit plans within the existing NWQ, and therefore differ from the program ASF presented in 1.4.1.

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>Existing</th>
<th>Proposed -2022</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>349</td>
<td>1,760</td>
</tr>
<tr>
<td>Medical Services</td>
<td>4,749</td>
<td>10,330</td>
</tr>
<tr>
<td>Counseling and Consultation Services</td>
<td>1,952</td>
<td>3,690</td>
</tr>
<tr>
<td>Health Promotion and Wellness Services</td>
<td>1,017</td>
<td>2,028</td>
</tr>
<tr>
<td>Shared Clinic Support</td>
<td>430</td>
<td>1,400</td>
</tr>
<tr>
<td>TOTAL ASF:</td>
<td>8,497</td>
<td>19,208</td>
</tr>
</tbody>
</table>

- Norris Health Center is currently located in multiple buildings across campus. Facility location changed during the duration of this study, causing Existing ASF numbers to fluctuate. The Merrill Hall, Union, and Norris Health Center locations are used here.
1.5. **Budget Summary**

Table 1.5.1 shows the budget summary for the Student Health Services project within the Northwest Quadrant. The ASF, Efficiency, GSF and Cost are based on the fit plans, which account for existing conditions and actual available space. The budget is based on 2013 dollars. The final budget needs to be verified and escalated once this is determined.

The scope of work for Student Health Services as a discrete project (as presented in this document) is presented first. The project GSF describes the area affected by this project only. The information following this top section outlines the SHS’ proportional share of costs from a separate infrastructure project.

The total gross square feet - the project GSF plus Student Health Services’ proportional share of building non-assignable square feet - follows the discrete project summary. Next, the infrastructure project allocation shows the SHS’ proportional share of costs from a separate infrastructure project that is proposed to be completed prior to the SHS project (see the NWQ Redevelopment Plan). Site work costs for NWQ-A are also extracted from the School of Education and General Assignment Classrooms Program Statement/Pre-Design and are proportionally allocated to NWQ-A-D users, as these users benefit from this work. SHS’ proportional share of these costs are presented here as well.

These costs are then combined to present a comprehensive view of costs for Student Health Services, including infrastructure allocations.

### Table 1.5.1. Project Budget Summary (Discrete Project Summary plus Infrastructure Allocations)

<table>
<thead>
<tr>
<th>Scope of work presented in this Program Statement/Pre-Design</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction</strong></td>
</tr>
<tr>
<td>Special Construction                                         $130,000</td>
</tr>
<tr>
<td>Design Contingency (10%)                                     $434,000</td>
</tr>
<tr>
<td>Escalation Factor (1.00)                                     $0</td>
</tr>
<tr>
<td>A/E Design and Other Fees                                    $418,000</td>
</tr>
<tr>
<td>DFD Management (4%)                                          $210,000</td>
</tr>
<tr>
<td>Project Contingency (10%)                                    $477,000</td>
</tr>
<tr>
<td>Hazardous Materials Abatement                                $41,700</td>
</tr>
<tr>
<td>Moveable Equipment                                           $706,000</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT COST (TPC)</strong>                                 $6,585,000</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pre-Design scope of work plus building non-assignable areas:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Cost (CC) / Project GSF</strong>                      $138</td>
</tr>
<tr>
<td><strong>Total Project Cost (TPC) / Project GSF</strong>                    $190</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infrastructure Project and NWQ-A Site Work Allocation Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Cost (CC) / Total GSF</strong>                        $118</td>
</tr>
<tr>
<td><strong>Total Project Cost (TPC) / Total GSF</strong>                      $163</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infrastructure Work Allocations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CC (Infrastructure Project Allocation)</strong>                    $2,507,181</td>
</tr>
<tr>
<td><strong>TPC (Infrastructure Project Allocation)</strong>                   $3,076,799</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>NWQ-A Site Work Allocations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CC (NWQ-A Site Work Allocation)</strong>                         $195,487</td>
</tr>
<tr>
<td><strong>TPC (NWQ-A Site Work Allocation)</strong>                        $248,629</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cumulative Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CC (Discrete Project + Infrastructure Allocations)</strong>        $7,476,368</td>
</tr>
<tr>
<td><strong>TPC (Discrete Project + Infrastructure Allocations)</strong>       $9,910,428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Total Gross Square Feet (GSF) (includes proportional allocation of building non-assignable areas):</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Cost (CC) / Total GSF</strong>                        $185</td>
</tr>
<tr>
<td><strong>Total Project Cost (TPC) / Total GSF</strong>                      $246</td>
</tr>
</tbody>
</table>
1.6. Schedule Summary

Table 1.6.1. shows the schedule summary for the Student Health Services project within the Northwest Quadrant. This schedule reflects the DFD guidelines for the typical duration of Design, Bid and Construction. As planned, the Student Health Services project can proceed only after the completion of the infrastructure project or concurrently with that project. See the Northwest Quadrant Redevelopment Plan for details.

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contract for A/E Services</td>
<td>4 Months</td>
</tr>
<tr>
<td>Develop/Review Budget</td>
<td>2 Months</td>
</tr>
<tr>
<td>Develop Preliminary Plans</td>
<td>2 Months</td>
</tr>
<tr>
<td>Complete/Review Design Report</td>
<td>1 Month</td>
</tr>
<tr>
<td>Complete Bid Documents</td>
<td>3 Months</td>
</tr>
<tr>
<td>Review Bid Documents (DFD)</td>
<td>1 Month</td>
</tr>
<tr>
<td>Bidding and Contracting</td>
<td>3 Months</td>
</tr>
<tr>
<td>Complete Construction</td>
<td>15-18 Months</td>
</tr>
<tr>
<td><strong>Estimated Total Time</strong></td>
<td><strong>32-35 Months</strong></td>
</tr>
</tbody>
</table>

Notes:
- Based on DFD Guide for Determining Time Required to Design, Bid, and Construct ($2.5 M-$5 M Construction Cost) (Contract for A/E Services revised to indicate 4 months which includes contract negotiation time)
- Based on average conditions with no unusual delay in delivery of materials or time lost to poor weather or other conditions.

1.7. Institution & Building Site Plan

Student Health Services’ proposed location is in the University of Wisconsin-Milwaukee’s Northwest Quadrant, on Floors 1 and 2 of NWQ-B and portions of NWQ-C Floor 2. Figures 1.7.1. through 1.7.4. describe the relationship between this proposed space and the broader institution, as well as the Northwest Quadrant site itself.
1. Executive Summary

Figure 1.7.1. University of Wisconsin-Milwaukee Kenwood Campus

Northwest Quadrant (NWQ)

Existing Norris Health Center

Existing Rooms within Merrill Hall

Existing Rooms within the Union

Proposed Site of the Student Health Services

Existing Rooms within the NWQ
Figure 1.7.2. Existing NWQ Site
Student Health Services is comprised of a wide range of services and programs serving the University of Wisconsin-Milwaukee community. Its proposed location is in portions of NWQ-B Floor 1, all of NWQ-B Floor 2, and portions of NWQ-C Floor 2.

Figure 1.7.3. NWQ Site
Figure 1.7.4. Proposed NWQ Users
General Problem Statement

2.1. Description of Problem History, Programmatic Context, Scope, & Nature of Problem
2.2. Major Goals and Objectives
2.3. Discussion of Budget or Schedule Limitations
2.1. **Description of Problem History, Programmatic Context, Scope, & Nature of Problem**

The existing Norris Student Health Center was built in 1961. Since then, various administrative functions and services of the Health Center have been relocated across campus. The original Norris facility was built as a health center only, for a student population of fewer than 9,000. Today, the University of Wisconsin - Milwaukee has grown to Wisconsin's second largest residential university, with a total student population of 29,768 and an undergraduate population of 24,678. Factors that influence demand on the campus healthcare system include increases in the number of students living on and around campus, international students, students from out of state, adult and returning students and veterans. UWM continues to serve its mission as an access institution, with many students being first-generation, and most facing financial challenges. These personal and family financial challenges can negatively impact access to adequate health insurance and healthcare.

All of these factors coupled with students with more complex medical and mental health issues arriving on campus have resulted in greater demand for a comprehensive, convenient healthcare system. In UWM’s National College Health Assessment Spring 2012 survey, 58% of UWM students report that they have been diagnosed with a medical condition in the past 12 months and 28% report being diagnosed with a mental health condition.\(^1\) This is an underestimate of the health needs of students as other students have not yet recognized an issue or understand how to navigate a healthcare system.

The UWM Student Health Center serves 65% of students during the time they are enrolled directly and additional students through outreach.\(^2\) Given modern health care delivery methods and campus needs, the existing Norris Health Center cannot adequately meet the demands for student medical services, counseling, and health promotion and wellness.

The primary goal of the project is to provide adequate space and centralize the three primary service areas of the Student Health Services - Clinical Services, Counseling and Consultation Services, and Health Promotion and Wellness. Centralized healthcare with a team approach will provide better services for the student population and result in student’s being able to concentrate on their academic success.

2.2. **Major Goals and Objectives**

**VISION**

The Student Health Services is a recognized and accredited leader in student health care providing high quality, affordable health care and promoting the physical and emotional well-being of the community.

**MISSION**

Student Health Services contributes to a student’s academic and personal success by assisting students in preventing, understanding and responding to physical and emotional health issues through medical and mental health care and health promotion and wellness programs and outreach. Student Health Services engages the campus community through collaborative health partnerships designed to enhance the university’s academic and community service mission.

**BASIC HEALTH MODULE**

The University of Wisconsin System recognizes that the present and future health of its students is among the most precious of its public resources. Students’ most pressing physical and
emotional health concerns influence academic achievement and affect civility, citizenship, and connectedness. Attention to these important health issues permits the university to educate and prepare learners as whole human beings.³

THE UWM DIVISION OF STUDENT AFFAIRS VISION STATEMENT
To be recognized as the premier Student Affairs Division, innovative in creating a thriving student-centered learning community that is dedicated to students’ well-being, success, personal growth, and professional development illustrates the commitment of the Division and University to student well-being and recognition of its’ foundation to a student’s success.

Addressing students’ health and wellbeing has been identified as a prioritized retention strategy through the University’s Best Place to Learn initiative and is a current focus within the strategic planning process. Student Health Services leads these efforts addressing the shorter range goals with a review of existing wellness and prevention trainings across campus community and the implementation of programs with an outcome of improving student’s overall physical and mental wellness. The longer term goal identified within this initiative, expansion of delivery of mental and physical health care on campus and of student’s access to care, will be able to be achieved through the construction of a new facility.

2.3. Discussion of Budget or Schedule Limitations

Norris Health Center has been identified as an issue during the 2006, 2009, and 2012 Accreditation Association for Ambulatory Healthcare visits with facility compliance issues that must be corrected. The ability to provide training programs for UWM students is severely limited by current space. The lack of placement locations that provide clinical experience is an increasing issue with academic partners.

Student Health Services is proposed to be located on Floors 1 and 2 of NWQ-B, and a portion of NWQ-C. The infrastructure of these floors - and the complex as a whole - has been studied during the NWQ Redevelopment Plan process, and it was determined that fire sprinklering and life safety upgrades must occur to allow logical redevelopment. Additionally, the building mechanical systems in NWQ-B are beyond their useful life and inefficient. The core infrastructure of the building must be modernized from a 1960’s hospital building to a modern academic building.

Given these necessary upgrades, the schedule of the SHS project is dependent on the funding and completion of the base building infrastructure improvement, as outlined during the NWQ Redevelopment Plan process. The NWQ-B specific scope includes core and shell upgrades, as well as a new mechanical penthouse. This project is currently planned as a separate project that would occur before or concurrently with the SHS interior build-out.
Analysis of Existing Occupants/User/Agency Operations & Programs

3.1. Analysis of Organization and Data Collection
3.2. Occupant/User Activities & Functional Categories
   3.2.1. Enrollment
   3.2.2. Utilization
   3.2.3. Employees: Type & Number
   3.2.4. Clinical Medical Services
   3.2.5. Mental Health and Counseling
   3.2.6. Health Promotion and Wellness
   3.2.7. Quality Improvement Program
3.3. Occupant/User Relationships & Adjacencies, Partnerships
3.1. Analysis of Organization and Data Collection

Norris Health Center provides direct service to over 9,000 students annually through 18,000 visits to the medical clinic and 7,000 visits to the counseling department. The Norris Health Center provides service to 65% of students with peak visits of 200 per day, or 25 visits per hour. Additional students, faculty, and staff are positively impacted by the outreach and training programs.

UWM students value the convenient, low-cost healthcare that they receive with minimal disruption to their lives and academic pursuits through Norris Health Center and recognize Norris Health Center’s broader public health responsibilities. In a 2011 survey, 89% of students reported it is important to them that there is a student health clinic on campus. An even higher percentage, 94%, responded it was important for Norris Health Center to monitor and communicate about disease outbreaks.4

The UWM student population has significant health, mental health, and prevention needs which an on-campus health center can address recognizing their needs as a student and coordinating with other campus resources. 33% of students reported they felt so depressed in the past 12 months it was difficult to function and 20% stated that a personal health issue was traumatic or very difficult to handle. Areas most frequently identified as negatively impacting academic success resulting in a lower grade in a class or on a project were stress (30.4%), sleep (22%), anxiety (21.5%), work (20.3%) and cold/flu (13.7%). Norris Health Center provides services that address these issues and help a student get back to work and back to class.

Norris Health Center is comprised of a wide range of services and programs serving the University of Wisconsin-Milwaukee community. There are three main service areas which form the Student Health Center—Clinical Services, Counseling & Consultation Services, and Health Promotion & Wellness:

**CLINICAL SERVICES**

Clinical Services provides a variety of primary and acute care health services to students. These services include:

- Care for illness and injury
- General men’s and women’s preventive health care
- Traveler’s health services
- Immunizations and injections
- Specialists care includes gynecology and sports medicine.
- Pharmacy
- Laboratory

**COUNSELING & CONSULTATION SERVICES**

The Norris Health Center Counseling & Consultation Service provides evaluation and short-term counseling for students with Mental Health and/or Alcohol and Other Drug Abuse (AODA) concerns. These services include:

- Crisis Intervention
- Individual, couples and group counseling
- Medication evaluation and management
- Outreach education and prevention programs
- Consultation to staff and faculty

**HEALTH PROMOTION & WELLNESS**

The Health Promotion and Wellness Department helps UWM’s highly diverse student population attain optimal health and academic achievement through:

- Health behavior assessment
- Evidence-based and data driven programs and resources
- Policy Development
- Immunization Clinics
The Health Promotion & Wellness Department focuses on alcohol, other drugs, and tobacco, mental health and wellness, nutrition and fitness, sexual health and healthy relationships and violence prevention.

3.2. Occupant/User Activities & Functional Categories

3.2.1. Enrollment

In 2012, UWM served a total student population of 29,768. The university has 24,678 undergraduate students and 5,090 graduate students, and enrolls more Wisconsin students than any other university in the state. In addition, students come from all 50 states and the District of Columbia, as well as 1,015 international students representing 80 countries.

In the 2010 American College Health Association 2010 National Survey of College Health Facility, responders that defined their space as adequate had an average gross sq. foot per student of 1.266 per student. For enrollment of 30,000 this translates into a 38,000 gross sq foot facility. In 2008 the President’s Commission on University Security Counseling Services Subcommittee Report made the recommendation that each campus should work toward meeting national standards which were identified as the Internal Association of Counseling Services standard of 1 counselor to every 1,500. In the 2008 UW System Audit a range of 1:1,492 to 1:4,289 was identified within System schools with UwM having the lowest ratio of counselors to students. Progress to date has resulted in an improved ratio of one counselor for every 3,658 students which is less than 50% of the staff needed to meet the recommendation. Benchmarking with other national data, the Sunbelt Survey results for a student population include a combined medical and nursing staff of 28.3 compared to Norris Health Center’s of 17 staff.

3.2.2. Utilization

Norris regularly assesses utilization data, patient satisfaction, population health, and patient outcomes. Monthly utilization reports regarding services through the medical clinic, counseling services, pharmacy, lab, and programs are reviewed and utilized to adapt services to better meet the needs of students. Norris Health Center Clinical and Counseling Services close at 5:00 p.m. Monday to Friday and is currently closed on the weekends. Hours can be extended in periods of high demand or campus emergencies. Norris Health Center’s Health Promotion and Wellness programming hours vary and include evening and weekend hours.

3.2.3. Employees: Type & Number

Norris Health Center has a total of 48 FTEs/73 Headcount Staff. The Executive Director serves as the Campus Health Officer and has responsibility for the leadership, strategic direction, and oversight of Norris Health Center and campus health. There are four members of the leadership team, the Director of Administration, Counseling Director, Director of Clinical Services, and Director of Health Promotion and Wellness. Norris clinical services are staffed by four primary care physicians and four nurse practitioners. Norris nursing department is overseen by a Nursing Manager and consists of four RNs and three Medical Assistants. The laboratory and pharmacy have managers with three additional medical technologists in the lab and one additional pharmacist. The patient support team is lead by a manager and has five staff that work with cashiering, reception, and health information.

The counseling department has a team of four psychologists, two licensed clinical social workers, three licensed professional counselors and two psychiatrists on staff. Health Promotion and Wellness staff include an Assistant Director and four additional health professionals. There are two athletic trainers that work out of the Pavilion. Administrative support services include an Assistant Director, IT staff, purchasing and support staff. In addition there are six student employees in Administration and up to 12 peer health advocates that are within Health Promotion and Wellness.
### 3.2.4. Clinical Medical Services

**MEDICAL**

In 2012-2013 Norris Health Center had over 18,000 in person visits to its medical services. In addition Norris triage nurses and other health care providers provide support and advice through 6,000 phone calls annually. Approximately 1/3 of medical visits are for preventive health with the additional 2/3 for illness or injury. The most common diagnosis are related to upper respiratory illness, sexually transmitted infections, preventive services, orthopedic and dermatologic problems. In addition depression and sleep disturbance are common complaints. SHS administers approximately 1,700 immunizations annually. In addition specialist physicians, gynecologist and a sports medicine physician see patients once a week.

The travel clinic is coordinated through the medical clinic and partners with the Study Abroad programs to provide vaccinations and advice for student travelling through UWM.

Having on-site laboratory and pharmacy services allows a student to receive all of their care in a single location. The laboratory annually processes over 15,000 tests annually of which 9,500 are completed within the facility. The pharmacy fills over 12,000 prescriptions annually, 4,000 over the counter medications, and consults with additional students related to medications.

<table>
<thead>
<tr>
<th><strong>Existing Staff Headcount (2012-2013)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Director</td>
</tr>
<tr>
<td>IT</td>
</tr>
<tr>
<td>Purchasing</td>
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<tr>
<td>Business/Financial/Billing/HR</td>
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<tr>
<td>Medical Records</td>
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<tr>
<td>Check-Out/Billing/Cashier</td>
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<tr>
<td>Patient Support Supervisor</td>
</tr>
<tr>
<td>Medical Provider</td>
</tr>
<tr>
<td>Medical Staff</td>
</tr>
<tr>
<td>Nursing Manager</td>
</tr>
<tr>
<td>Nursing Assistant</td>
</tr>
<tr>
<td>Director of Medical Services</td>
</tr>
<tr>
<td>Pharmacist</td>
</tr>
<tr>
<td>Counseling Director</td>
</tr>
<tr>
<td>Psychiatrist</td>
</tr>
<tr>
<td>Psychologists</td>
</tr>
<tr>
<td>Licensed Clinical Social Workers or Counselor</td>
</tr>
<tr>
<td>Medical Technologists</td>
</tr>
<tr>
<td>MHPW Director</td>
</tr>
<tr>
<td>Assistant Director</td>
</tr>
<tr>
<td>MH/ADA Coordinator</td>
</tr>
<tr>
<td>ACE Program Coord</td>
</tr>
<tr>
<td>Health and Immunization Outreach Coord</td>
</tr>
<tr>
<td>Graduate Student</td>
</tr>
<tr>
<td>Assit. Grad. Coord</td>
</tr>
<tr>
<td>Supervisor Peer Health Educators</td>
</tr>
<tr>
<td>Student Support/Peer Health Advocates</td>
</tr>
<tr>
<td><strong>Total</strong></td>
</tr>
</tbody>
</table>

**Table 3.2.3.1.** Existing SHS Staff Headcount (2012-2013)
3.2.5. **Mental Health and Counseling**

Over 7,000 of the Student Health Center’s visits in 2012-2013 were to members of the Counseling Department. The most common reasons for access to Counseling Services are depression, anxiety, and relationship issues. Norris Health Center provides individual and group therapy, and medication management through psychiatrists. The crisis counselor is available during operational hours for walk-in and telephone access. In addition the crisis counselor consults with faculty and staff related to emotionally distressed students. Faculty, staff, and student leaders within the campus community are all critical to response to students when they are struggling.

Counseling staff participate in outreach and screening initiatives and work to increase services to under served and minority populations on campus. Staff facilitates workshops with faculty and campus partners.

3.2.6. **Health Promotion and Wellness**

Priority areas for Health Promotion and Wellness include Alcohol and other drugs and tobacco, emotional wellbeing, sexual health, violence prevention, and nutrition/fitness. Developing and refining a comprehensive approach to Suicide Prevention and Alcohol and other Drugs are current major projects.

The University of Wisconsin-Milwaukee (UWM) Suicide Prevention Project aims to prevent suicide attempts and deaths within the UWM student population by establishing infrastructures for delivering and sustaining effective mental health prevention, screening, and treatment services. This project is lead from this department and is achieved through policy development; training, screening, and referral activities; creation of educational materials; and enhanced mechanisms for student engagement. 97% of the participants in this training agreed with the statement “I feel I can be effective in responding to an individual in crisis” an increase of 11% from their baseline.

Norris department’s approach to AODA is three-tiered targeting at risk individuals, the student population as a whole and the community. Annually approximately 500 individuals complete the Alcohol and your College Experience Program. The vast majority of ACE participants experienced positive changes in the behavioral variables that are known to impact high-risk alcohol and other drug use among college students, such as intention, outcome expectancies, attitude, and perceived norms. Over 80% of incoming UWM students complete the “Alcohol-Wise” program, an interactive online education program, annually. Participants displayed an increased understanding of the correlation between alcohol use and academic success, as well as the correlation between alcohol use and adverse effects on their peers’ quality of and an increased use of protective behaviors at follow-up. Annually this department through programs and trainings connect with thousands of students and other campus community members.

3.2.7. **Quality Improvement Program**

Norris Health Center has a Quality Improvement Program which includes a Quality Team, and Risk Management, Credentials, Utilization Review and Infection Control and Safety Committee.

Every three years Norris Health Center conducts a comprehensive assessment through the National College Health Assessment. This survey is designed to assess student health behaviors in order to provide better health and wellness services and support for UW-Milwaukee students. The Spring 2012 survey of students identified the following as the areas that affected over 10% of
UWM’s students and have the most negatively impact students’ performance: Stress (30.4%), sleep difficulties (22.2%), anxiety (21.5%), work (20.3%) colds and flu and depression (13.7%) and internet/computer use (12.6%).

In addition to the twice annual patient satisfaction survey, Norris Health Center assesses counseling outcomes and satisfaction with counseling services through participation with other UWS institutions in the Learning Outcomes and Satisfaction Survey. Data revealed that UWM counseling center clients reported a significantly lower level of well-being at the time they started counseling relative to the average client rating across the System. In addition, significantly more UWM counseling clients reported an improvement from the start of counseling relative to the average System improvement rating.

Through participation with other UWS institutions in the national Healthy Minds Survey, Norris Health Center obtained UWM data with respect to various student mental health problems, help seeking behaviors, barriers and facilitators to obtaining help and perceived supportiveness of the academic and social environment which will be used to develop programs.

3.3. Occupant/User Relationships & Adjacencies, Partnerships

Norris Health Center professionals and leadership are committed to facilitating awareness and partnerships related to the health behaviors, social and physical environment, and public health and healthcare systems that impact students’ ability to succeed.

STUDENTS

The majority of students during their years at UWM will seek services at Norris Health Center. Out of the 710 students who responded to a recent survey, 470 students (66.48%) reported that they have used Norris Health Center for health care which parallels data from the UWM Graduating Senior Survey with 65% of students having identified utilizing Norris Health Center. In the 2011 survey, 89% of students reported it was important that there was a health center on campus, and 94% of students identified equal access to all students to Norris Services as important. This survey included 34% of the respondents that had never used Norris Health Center, further supporting the widespread importance of Norris Health Center and healthcare access to the student community beyond those currently receiving care. Norris Health Center’s twice yearly Patient Satisfaction Survey of users show consistently outstanding results with 94% of students who would recommend Norris to a friend and 97% satisfied with Norris’ affordability. Approximately 400 students annually are surveyed with 68% reporting that visiting Norris Health Center had a positive effect on their class attendance and academic performance.  

PARENTS

Parents consider health and safety a high priority and having an on campus, easily accessible healthcare facility for their sons and daughters who are often new health care consumers. Routinely parents identify the health and safety orientation as providing valuable information that they will share with their student and keep as a resource for themselves.
Norris Health Center has an important role related to infectious disease monitoring, outbreaks, communication, and vaccination. The staff provides consultation to faculty and staff related to student medical and mental health issues and are members and leaders of campus committees focused on student wellbeing. These committees include the Chancellor’s Advisory Committee on Mental Health, CARE committee, Student Support committee, and Alcohol and other Drug Task force. The largest training and outreach for staff is the Suicide Prevention training. Over a two year period, over 1200 UWM faculty, staff, and students have participated in the Campus Connect Suicide Prevention Gatekeeper Training program. Individuals who have participated in the Campus Connect Suicide Prevention Gatekeeper Training Program have intervened to assist 773 UWM students, 197 UWM faculty/staff, and 411 individuals who are not affiliated with UWM. These and other trainings help to build a caring community.

Examples of collaborative initiatives with academic partners include campus flu clinics with College of Nursing and practicum placement for Health Informatics students. These are opportunities for students to learn and contribute to their own community. A grant award from Substance Abuse and Mental Health Administration for Suicide Prevention is a partnership between Norris Health Center and the Psychology Department that will allow expansion of the current Suicide Prevention Training. Norris Health Center currently serves as a training site for the College of Nursing and is developing plans to build the training relationship with other campus departments when space allows. Collaboration with other departments on campus include University Housing, Children’s Learning Center, University Recreation, Dean of Students and Union Programming.

The Norris Health Center partners and coordinates programs, speakers, awareness initiatives, trainings, participation in health and mental health related community events, and health resource fairs that are open to the community. Through leadership and involvement of campus comprehensive approach to Alcohol and other Drugs, emergency preparedness, suicide prevention, and tobacco. Norris Health Center works with neighbors, the surrounding community, local public health departments, and local healthcare systems. In addition Norris Health Center is currently a training location for the Medical College of Wisconsin, with additional healthcare systems requesting training partnerships which would be possible after relocating to a new facility. The Norris Health Center currently provides limited direct service to the greater community through vaccination clinics.

REFERENCES
1. UWM American College Health Association-National College Health Assessment Survey, March 2012, full survey results on file at Norris Health Center.
4. UWM Student Health Care Funding Survey, April 2011, full survey results on file at Norris Health Center.
8. Sunbelt Survey available at: http://student health.uncc.edu/general-information/sunbelt-surveys
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Analysis of Existing Physical Conditions

4.1. Site/Civil/Utilities/Transportation: Existing Conditions or Site Survey, Capacities, & Deficiencies
4.2. Building/Systems: Existing Conditions & Deficiencies
   4.2.1. Architectural Systems
   4.2.2. Structural Systems
   4.2.3. Mechanical Systems
   4.2.4. Electrical Systems
4.3. Special Planning Issues to be Resolved
This section summarizes the existing physical conditions of the Norris Health Center space that the proposed Student Health Services users currently occupy. It documents existing deficiencies that help frame project need. This section does not describe existing conditions of the proposed space within the Northwest Quadrant.

4.1. Site/Civil/Utilities/Transportation: Existing Conditions or Site Survey, Capacities, & Deficiencies

Student Health Services have been located in the Norris Health Center for the past 30 years, since its acquisition with the Milwaukee-Downer College purchase. It was built in 1961 to house student health and nursing for UWM and Milwaukee-Downer College when the UWM headcount was 8,713. Increases in student enrollment and changes in clinical and mental health care brought growth of staffing, needs for confidential work space, need for education work space which led to changes in Norris. In the late 1990’s the attic space was converted to bring the total space to 14,180 GSF. In 2005-2008 space constraints led to relocating four administrative functions: purchasing, IT, business and human resources to Merrill Hall. In a continuing effort to improve the situation, Student Health Promotion and Wellness was relocated to the Student Union. Even with these changes, the space constraints of Norris Health Center for the 2012 headcount of 29,768 has resulted in lines out the door and individuals sitting in hallways waiting to be seen. Additionally, space constraints have resulted in physicians’ offices doubling as exam rooms, without the traditional separation of use and efficiency of multiple exam rooms per provider. The UW-Milwaukee Master Plan indicated a need of an additional 10,000 ASF/20,000 GSF, citing model space guidelines for university clinics. The quality of the space is very poor with no elevator access to the Floor 3 requiring counselors to see clients outside of the normal environment and within the medical clinical service. In addition Norris HVAC is antiquated and the sensitivity of lab, pharmacy, and patient exam room space to temperature requires additional AC and space heaters. The three floor stacked floor model with a single hallway severely limits flow of patients and access to the nursing member of the team. The entrance is located within a few feet of the reception desk and the vestibule does not allow lines to form smoothly.
4.2. Building/Systems: Existing Conditions & Deficiencies

The current space of Norris Health Center can only serve the basic needs of UWM’s student population. Currently, demand exceeds capacity and space limits efficient visit flow. Because of the unique requirements of a healthcare facility as related to infection control, safety, and ambulance access, multiple services are not only impractical but inefficient and would compromise delivery locations, patient care, and the employee work environment.

The current space constraints limit both the center’s ability to serve the student community and to adapt to innovations in both education and clinical care that must be a part of the next decade in health care. A new, larger, facility will provide a modern environment incorporating the latest in healthcare design, equipment and other innovations. An updated facility will also insure continued accreditation from Accreditation Association for Ambulatory Health Care (AAAHC) and meet the standards of the International Association of Counseling Services (IACS) indicating quality care for students. An accreditation review has occurred in fall of 2012 and will occur again in 2015. An indication of a time line for improved facilities that meet the campus needs is highly desirable for the next accreditation.
4.2.1. **Architectural Systems**

The existing Norris Health Center is a brick-clad, concrete frame building located in the center of the northeast quadrant of the UWM Campus. It is located to the south of the Pavilion/Klotsche Center, however the access to the two buildings are not immediately apparent (the entrance to the Pavilion being one floor below and not off the same façade as the Norris Health Center). Enderis Hall, which currently houses the College of Health Science, is immediately to the south of the Norris Health Center, along Hartford Avenue. The Sandburg Residence Halls are to the west, separated by an open greenspace. The Norris entry is to the south, not clearly visible to the dorms.

Entrance and wayfinding to the Norris Student Health Center has been and continues to be a challenge of the current site. Students that are not familiar with Enderis or Holton Halls may not be aware of the location of the health center. Ambulance access to the mid-floor location at the lower level is confusing as well.

4.2.2. **Structural Systems**

The Facilities Condition Report prepared by UWM identifies that the structural system of the 1961 Norris Health Center is basically sound. It is a good candidate for re-use as a short-term or permanent renovation.

4.2.3. **Mechanical Systems**

The Facilities Condition Report prepared by UWM identifies that the mechanical systems in the Norris Health Center are beyond their useful life. Reuse of the facility, if planned, should allow for new mechanical systems.
4.2.4. **Electrical Systems**

The Facilities Condition Report prepared by UWM identifies that the electrical systems, while adequate for re-use, do not support current technological advancements in the equipment loads and emergency back-up capabilities required for a modern student health facility.

4.3. **Special Planning Issues to be Resolved**

The building is not historic, and the site is zoned to be consistent with future University use. WEPA characterization will depend on the scope of the proposed project in the building. The UWM Master Plan identifies this area to be within the main student services corridor proceeding south (UWM Union) to North (Pavilion/Klotsche) through campus.

![Image 4.2.6. Student Health Services existing patient desk](image1)

![Image 4.2.7. Student Health Services existing waiting room](image2)
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5 Changes & Projections

5.1. New Student Programs
5.2. Accreditation Standards
5.3. Healthcare Methodology
5.4. Enrollment
5.5. Staffing
5.6. Planned Utilization of Space
5.7. Unique Functions
5.8. Special Equipment
5.9. Benchmarking/Trends Analysis
5.1. New Student Programs

A new facility for Student Health Services will allow expansion of current mental health and counseling, medical and prevention services and better meet the needs of UWM students. The health center’s goal is to provide service for 50% of the student population annually and to provide service to 75% of students before they graduate. Utilization is expected to increase at least 10%. Additional service demands are a result of a changing and growing student population and additional residential students, out of state students, international students, and veterans. The travel clinic which works with the Center for International Education will expand its services as an increased number of students travel.

Providing care for mental health conditions and stress-related medical conditions and focusing on emotional well-being is a priority area with the clinic. Student Health Services will hire additional counselors to meet the increased demand of the student population and will offer on-site group therapy. Student Health Services will expand the Counseling Department’s training program which will further expand the capacity of the service delivery and provide additional academic partnerships.

Medical services will expand the number and type of procedures offered as well as hold patients for observation who require additional care. Appropriate facilities will be available for infectious diseases requiring specific infection control measures and in outbreaks. Additional outreach programs on alcohol and other drugs, stress management, nutrition and fitness, sexual health, and violence prevention will be delivered within this environment. Additional training programs that include adolescent medicine, gynecology, sports medicine, nutrition, and other areas will allow for more access to on-site care from specialists. The pharmacy location on Floor 1 will provide easier access to all students and will expand its operation. Also on Floor 1, a health and wellness resource area will serve as a resource to students and community members.

5.2. Accreditation Standards

Student Health Services delivers high-quality health care recognized by accreditation through the Association for Ambulatory Health Care (AAAHC), the leading accreditor of ambulatory health care facilities. NHC is one of four UW System student health centers that are accredited through AAAHC and one of 155 facilities that include medical clinics, Indian Health Centers, dental clinics, and ambulatory surgery centers accredited in the state of Wisconsin. The health center is reviewed through standards that advance and promote patient safety, quality, and value. Facilities and environment is a core standard that was recognized in previous Norris surveys as an area for improvement in order to provide optimal infection control and maximize patient’s privacy. The AAAHC Certificate of Accreditation is recognized as a symbol of quality by third party payers, medical organizations, liability insurance companies, state and federal agencies and the public. Continued accreditation is dependent on a facility that is appropriate for the scope and scale of the healthcare delivery operation.

5.3. Healthcare Methodology

The contribution of a student’s health to their academic and personal success is best outlined within the UW System document, the Basic Health Module, “UW System recognizes that the present and future health of its students is among the most precious of its public resources. Students’ most pressing health concerns influence academic achievement and affect civility, citizenship, and connectedness. Attention to important health issues permits the university to educate and prepare learners as whole human beings.”

Access to high quality, affordable healthcare and health information that is delivered with a focus on student success is increasingly important in the evolving, uncertain greater healthcare environment.
5.4. **Enrollment**

UWM is presently involved in implementing a Strategic Enrollment Management Plan. This plan will address the recent pattern of declining enrollments at the undergraduate and graduate levels. It will also tap into new markets for students, including, but not limited to, out-of-state students, international students, on-line students, and transfer students.

The projections for the next three to five years are:
- Stabilize first-year, first-time, traditional age student population at 4,000 (an increase of 15%);
- Double out-of-state student population from 8% to 16%;
- Recruit international students (both undergraduate and graduate) from new markets, thus increasing that population from 1,200 to 2,500;
- Strengthen student success activities to stabilize the first-to-second year retention rate at 75%;
- With the introduction of new graduate programs in the Schools of Freshwater Science and Public Health, enroll additional graduate students.

While each of these goals alone can and will impact the overall enrollment at UWM, collectively, they will have a significant impact in a short period of time. Thus, the university is confident that the overall enrollment at UWM will reach and be maintained at 31,000-33,000 by Fall 2020.

This will have a significant impact on UWM Student Health Services as an increased student population seeks counseling, health promotion & wellness, and medical care.

5.5. **Staffing**

Student Health Services staffing is expected to initially expand mental health counselors and administrative staff. Two additional staff members are anticipated as related to more complex financial and business practices as well as increased utilization of services. It is estimated that at least two additional mental health professionals are needed to meet the demands for services and decrease wait times. In addition, staffing will expand through additional student employees. This includes students in business and administration, health information, public health and outreach. The number of trainees is expected to increase in several areas of the clinic due to the demand for clinical experience with a young adult population.

### Table 5.5.1. Projected SHS Staff Headcount (2012-2013 & 2022)

<table>
<thead>
<tr>
<th></th>
<th>Existing (2012-2013)</th>
<th>Proposed 2022</th>
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<td>Administration</td>
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<td>Medical Services</td>
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</tr>
<tr>
<td>Health Promotion &amp; Wellness</td>
<td>19</td>
<td>23</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>73</strong></td>
<td><strong>86</strong></td>
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</table>
5.6. Planned Utilization of Space

Student Health Services’ plan for a healthcare facility updates the facility to current standards. The primary increases in space are related to separate office and exam rooms for clinicians, multiple exam rooms for each medical provider, adequate waiting and educational and program room space, and room for trainees. Most rooms are anticipated to be utilized over 95% of normal operating hours with Floor 1 meeting rooms available for evening programming. Opportunities for evening and weekend hours will be based on student’s needs. Counseling rooms are based on increasing the number of mental health professionals to adequately meet the demands.

5.7. Unique Functions

In order to meet current infection control standards, Student Health Services needs negative pressure rooms and areas for infectious waste. In addition counseling rooms to observe trainees and group rooms for counseling and trainee staff are essential. Student Health Services also needs a procedure room and area for temporary holding for observation due to the higher volume of patients. The lab requires adequate ventilation for equipment. Temperature control for lab, pharmacy, and patient care areas must be accessible and able to be controlled locally.
5.8. Special Equipment

Most specialized equipment is located in the Laboratory and includes the Coulter monitor and centrifuge. Norris has an EKG, medical exam room tables, diagnostic equipment, orthopedic supplies, and a colposcope and supplies. Emergency lighting, automatic external defibrillators (AEDs), emergency response equipment, external defibrillators, and oxygen tanks are located throughout the clinic. Refrigerators for storage of pharmaceuticals, lab reagents and specimens are present and need back-up power sources.

5.9. Benchmarking/Trends Analysis

Research indicates that properly designed healthcare buildings lead to positive patient outcomes (e.g., satisfaction, reduced anxiety, and quicker healing times). The following is a summary of special design considerations and healthcare design trends that help promote these outcomes.

WAITING AREAS
Waiting areas should offer calm, quiet space with subtle audio/visual distractions and children’s play areas. Quiet areas for private conversation are also valued. These features lead to higher satisfaction and reduced anxiety among patients. In addition, it is preferred that waiting areas are clearly demarcated and separated from busy circulation paths. This allows for better way-finding within the facility and lower levels of stress and anxiety. Some clinics have experimented with ‘self rooming,’ where patients are instructed to independently find their assigned examination room upon checking in. This strategy reduces the need of providing large waiting areas and gives nurses more time to focus on core responsibilities instead of ushering patients from waiting area to exam room.

CHECK-IN DESK
Check-in desk areas should be clearly separated from waiting areas in order to preserve privacy for patients and reduce anxiety within waiting areas. In some cases, self-service check-in kiosks have been viewed favorably by patients because they can reduce time spent waiting in lines.

EXAM ROOMS
Within patient rooms, high-quality walls and curtains are preferred to lower quality materials so that a quiet, safe environment is established. Patient privacy is essential, and exam and therapy rooms should be out of sight of public areas. Research also shows that logical, treatment-specific clusters of patient rooms are preferable. Inside the rooms themselves, computers should be oriented so that medical professionals can maintain eye contact with patients while also looking at computer monitors.

WAY-FINDING
Properly-designed way-finding has been proven to reduce patient anxiety. This includes clear signage and efficient connections between parking and the medical facility. Patients prefer health centers that are visible and located near activity nodes and public areas. In student health center settings, patients prefer that the facility is close to other student services and very accessible.

MATERIALS & AMENITIES
Research proves that attractive, sensibly designed healthcare settings lead to positive patient outcomes. Lighter, contemporary furnishings and decorations reduce anxiety, and views/sounds of nature are highly valued among patients and staff. In settings where actual incorporation of nature is impossible, plants, pictures of nature, and fountains can be substituted. Warm, indirect lighting reduces anxiety and rates highly in patient satisfaction. It is essential that healthcare buildings avoid products with high Volatile Organic Compounds (VOCs) (carpets, particleboard, etc.), and should only use plastic materials that do not contain hazardous additives.
REFERENCES

1. ‘Student Health and Wellness: Making Healthy Living the College Experience,” John Ruffo and Emil Rodolfa, PhD. Society for College and University Planning presentation.


5. ‘Creating Safe and Healthy Spaces: Selecting Materials that Support Healing,’ Mark Rossi, PhD and Tom Lent. Paper presented by The Center for Health Design and Health Care Without Harm, 2006.

BENCHMARKING

As part of its benchmarking process, the Student Health Core Team visited one student health center (University Health Services at the University of Wisconsin-Madison) and was exposed to other medical clinics (Yahara Clinic in Monona, Wisconsin and Student Health Centers from around the country). In addition, the core team suggested taking tours of Northwestern University and the University of Chicago during the next design phases.

The following is a brief review of key features and core team responses to the UHS (UW-Madison) and Yahara Clinic (Monona) benchmarking projects.

**Figure 5.9.1.** UW-Madison University Health Services & UWM Student Health Services (Note: UW-Madison UHS Provides different services from UWM SHS)

**Image 5.9.1.-5.9.5.** UW-Madison University Health Services
UW-MADISON UHS
- Services: Medical, Mental Health, Pharmacy, Prevention Services, Environmental Health, etc.
- 128,000 sq ft
- Located on four floors of new mixed-use development - 32,000 sq ft each floor

Medical Visits Statistics:
- Before: 50,000 visits/yr
- After: 65,000 visits/yr, 24,000 unique student visits/yr
- Why? Better Location, Looks Nicer/Better Perception of UHS Services

Key Features/Lessons:
- Increased synergy between departments (but potential conflicts)
- Waiting room times: 3-4 minutes
- Highlights the need to ‘plan for what will be, not for what is’
- Problems with Hallways, Private Offices vs. Work Stations for medical staff (wish they hadn’t designed private offices)
- Web-based check-in and appointments
- Self-Service Kiosks
- Near Student Services and UW ‘Town Hall’
- For New Facility: Project 15% increase in patients
- Computer Screen in Patient Rooms: Questions of orientation
- Where do patients sit in rooms?
- Where do patients prefer to wait?
- Way finding Conflicts

Core Team Feedback:
- Don’t like separate floors

UW HEALTH YAHARA CLINIC
- Architects: Kahler Slater
- About 50 employees
- 32,656 sq ft

Key Features:
- Self-Rooming
- Unique Wayfinding
- Huddle Rooms
- Patient Rooms
- Room Light System
- Minimal Time Spent in Waiting Room
- Multi-Purpose Meeting Room Upstairs
- Natural Light

Core Team Feedback:
- Question about the movable partition
- Room Indicators: Flags don’t work; lights have worked in their experience
- Self-Rooming probably wouldn’t work because students are first-time users

Image 5.9.6. UW Health Yahara Clinic
Figure 5.9.2. UW Health Yahara Clinic Plan

Image 5.9.7.- 5.9.9. UW Health Yahara Clinic
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### Space Description

6.1. **Space Type Narrative**
6.2. **Space Tabulation of Existing and Proposed Spaces, Number of Occupants or Stations**
6.3. **Graphic Analysis of Spaces**
6.4. **Adjacency Matrix**
6.5. **Spatial Organization of Activities and/or Rooms**
6.1. Space Type Narrative

The Student Health Services facility will be designed to meet the requirements of the following organizations:

- Accreditation Association for Ambulatory Health Care (AAAHC)
- International Association of Counseling Services (IACS)
- Applicable Codes, including the International Building Code and the Life Safety Code
- University of Wisconsin System Physical Planning Guide

The Student Health Services facility is comprised of the following seven distinct space types:

- Medical Clinic: Exam/Procedure/Clinical Support
  These spaces will be designed as a typical contemporary medical clinic. Patient comfort and safety will be considered in all areas. All spaces will be sized to meet requirements for staff and patient accessibility. Exam and treatment spaces will be designed to meet HIPAA privacy requirements. Staff work spaces will be designed for maximum collaboration opportunities, and will anticipate Electronic Health Records will be able to be accessed in all patient care spaces. (See the following sections for detailed room configurations and sizes.)

- Counseling and Consultation: Consult/Observation
  Mental Health Professionals’ Consult/Offices will be designed to meet contemporary consult clinic requirements, providing space for office and consultation within one environment. Patient/client comfort and safety will be considered in all areas. All spaces will be sized to meet requirements for staff and patient accessibility. All patient/client spaces will be designed to meet HIPAA privacy requirements. Additional security will be required for this space. (See the following sections for detailed room configurations and sizes.)

- Pharmacy
  A clinical dispensing Pharmacy will be included in this clinic, with a potential for a future small retail sales area. Medical clinic and public access is important. All spaces will be sized to meet requirements for staff and patient accessibility. All patient/client spaces will be designed to meet HIPAA privacy requirements. Additional security will be required for this space.

- Clinical Laboratory
  A Clinical Laboratory for on-site testing will be included in this clinic. All spaces will be sized to meet requirements for appropriate infection control requirements, and for staff and patient accessibility. All patient/client spaces will be designed to meet HIPAA privacy requirements. Additional security will be required for this space. Access for after-hours sample pick-up will need to be provided.

- Student Health and Wellness
  The Student Health and Wellness spaces will be designed to support wellness education programs, including stress management, general wellbeing, dietary education, health screenings, and clinical visits. These spaces should support staff, student volunteers and event coordination. Public access to Health & Wellness materials and resources is important.

- Multipurpose: Conference/Meeting/Group Therapy and Function spaces
  Multi-function rooms will be provided to meet the needs of both clinical functions and the Health and Wellness program, as well as being available for collaboration with programs scheduled by other groups/schools in the Northwest Quadrant. These spaces are to be designed with flexible, movable furniture allowing for many types of meetings, group therapy, and other Therapy staff. (See the following sections for detailed room configurations and sizes.)
student health center functions. (See the following sections for detailed room configurations and sizes.)

- **Office/Administration/Support**
  Offices and Administrative spaces will be designed for maximum flexibility and meet industry standards for medical clinics. Medical offices will be sized to match exam rooms to allow future potential conversion, if required. (See the following sections for detailed room configurations and sizes.)

### 6.2. Space Tabulation of Existing and Proposed Spaces, Number of Occupants or Stations

Table 6.2.1. shows proposed program for the Student Health Services, organized by functional category. ASF represented in this table represents program, not fit plan square footages. Assignable Square Feet and Gross Square Feet presented in the budget summaries (Table 1.5.1 and in Section 9) are based on fit plans within the existing NWQ, and therefore differ from the program ASF presented in 6.2.1.

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| Total (Assignable Space) |                          | 349       |          | 1,760      |               |           |            |           |            |               |           |
### Table 6.2.1. Student Health Services Space Tabulation - Existing and Proposed (Continued)

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4,749

UWM Student Health Services
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Table 6.2.1. Student Health Services Space Tabulation - Existing and Proposed (Continued)

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**Shared Clinic Support**

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TOTAL ASF: 8,497
TOTAL PROGRAM ASF: 19,208

(See Note)
### Table 6.2.1. Student Health Services Space Tabulation - Existing and Proposed (Continued)

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<td>800: Health Care Facilities</td>
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<tr>
<td>830: Nurse Station</td>
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<tr>
<td>840: Surgery</td>
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<tr>
<td>850: Treatment/Examination</td>
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<td>855: Treatment/Examination Service</td>
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<tr>
<td>860: Diagnostic Service Laboratory</td>
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<td>865: Diagnostic Service Laboratory Service</td>
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<tr>
<td>870: Central Supplies</td>
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<td>880: Public Waiting</td>
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<td><strong>WWW: Circulation Area</strong></td>
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<td><strong>YYY: Mechanical Area</strong></td>
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<td><strong>Existing</strong></td>
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<td><strong>Proposed -2022</strong></td>
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</tbody>
</table>

**Notes:**
1. Room Type Codes based on the Postsecondary Education Facilities Inventory and Classification Manual (FICM):
   - 300: Office Facilities
     - 310: Office
     - 315: Office Service
     - 350: Conference Room
   - 800: Health Care Facilities
     - 830: Nurse Station
     - 840: Surgery
     - 850: Treatment/Examination
     - 855: Treatment/Examination Service
     - 860: Diagnostic Service Laboratory
     - 865: Diagnostic Service Laboratory Service
     - 870: Central Supplies
     - 880: Public Waiting
   - WWW: Circulation Area
   - YYY: Mechanical Area
2. Norris Health Center is currently located in multiple buildings across campus. Facility location changed during the duration of this study, causing Existing ASF numbers to fluctuate. The Merrill Hall, Union, and Norris Health Center locations are used here.
### Table 6.2.1. Student Health Services Space Tabulation - Existing and Proposed (Continued)

<table>
<thead>
<tr>
<th>Room Type</th>
<th>NO. OF OCCUPANTS</th>
<th>ASF / OCC</th>
<th>NO. OF SPACES</th>
<th>TOTAL ASF</th>
<th>NO. OF OCCUPANTS</th>
<th>ASF / OCC</th>
<th>NO. OF SPACES</th>
<th>TOTAL ASF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Administrative</strong></td>
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<tr>
<td>315 Staff Toilet</td>
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<tr>
<td><strong>Medical Services</strong></td>
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<tr>
<td>315 Staff Toilet</td>
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<tr>
<td><strong>Counseling and Consultation Services</strong></td>
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<td>315 Staff Toilet</td>
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<tr>
<td><strong>Health Promotion and Wellness Services</strong></td>
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<tr>
<td>315 Staff Toilet</td>
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<td><strong>Shared Clinic Support</strong></td>
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<tr>
<td>870 Trash / Recycle Holding</td>
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<td></td>
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<tr>
<td>870 Housekeeping Closet</td>
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<td></td>
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<tr>
<td>YYY Server Closet</td>
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<tr>
<td>YYY Electrical Closet</td>
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<td>YYY Data Closet</td>
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<tr>
<td>315 Staff Toilet / Shower</td>
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<td></td>
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<tr>
<td>WWW Internal Circulating Stair</td>
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</tr>
</tbody>
</table>

**Total NASF:** 990
**Total Program NASF:** 990
6.3. **Graphic Analysis of Spaces**

Figure 6.3.1. describes proposed spaces for Student Health Services. All spaces should conform to UW System standards and be confirmed with existing space conditions.

**TYPICAL EXAM AND PROCEDURE**

**NOTES:**
- PROVIDE HAND-WASHING SINK OR PROCEDURE SINK AS SHOWN
- UPPER & LOWER CASEWORK AS SHOWN; FINAL CONFIGURATION TO BE CONFIRMED DURING DESIGN DEVELOPMENT
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED
PSYCHOLOGISTS’ AND COUNSELORS’ OFFICES / CONSULT CONCEPTS

COMMON CONFIGURATION FOR:
- CRISIS COUNSELOR OFFICE
- PSYCHOLOGISTS & COUNSELORS
- COUNSELING SPACE

NOTES:
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED
Figure 6.3.1. Student Health Services Graphic Program (Continued)

TYPICAL OFFICE ENVIRONMENTS

NOTES:
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED
RECEPTION / PATIENT SUPPORT SERVICES AND SUPPORT

NOTES:
- UPPER & LOWER CASEWORK AS SHOWN; FINAL CONFIGURATION TO BE CONFIRMED DURING DESIGN DEVELOPMENT
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED

Figure 6.3.1. Student Health Services Graphic Program (Continued)
Figure 6.3.1. Student Health Services Graphic Program (Continued)

TYPICAL CONFERENCE ENVIRONMENTS

NOTES:
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED
- AUDIO/VISUAL DESIGN TO BE DETERMINED IN DESIGN DEVELOPMENT
  (FLAT-PANEL OR OVER-HEAD PROJECTION WITH RETRACTABLE SCREEN)

CONFERENCE ROOM
(750 ASF)
25 ASF/Occupant

GROUP THERAPY
(360 ASF)
25 ASF/Occupant

MEETING ROOM
(300 ASF)
25 ASF/Occupant

TRAINING THERAPY/ OBSERVATION ROOM
(120 ASF)
25 ASF/Occupant

20 AT TABLE
36 TOTAL SEATS

EXAMPLE ENVIRONMENT:

25 ASF/Occupant
PEER ADVOCATES HOME BASE AND TRAINEE WORKROOM

NOTES:

- UPPER & LOWER CASEWORK AS SHOWN; FINAL CONFIGURATION TO BE CONFIRMED DURING DESIGN DEVELOPMENT
- ALL ITEMS SHOWN IN ROOM TO BE PROVIDED BY FURNITURE/EQUIPMENT ARE DASHED

Figure 6.3.1. Student Health Services Graphic Program (Continued)
6.4. Adjacency Matrix

Table 6.4.1. describes preferred adjacencies for the Student Health Services. This organizational tool informs the fit plan and represents ideal organizational relationships. Where rows meet columns, preferred adjacencies have been indicated (Strong (S), Medium (M), Weak (W), and No Adjacency (_).

<table>
<thead>
<tr>
<th>UW-Milwaukee Student Health Center Adjacency Requests</th>
<th>Administration</th>
<th>Medical Services</th>
<th>Counseling and Consultation Services</th>
<th>Health Promotion and Wellness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administration</td>
<td>Executive Director</td>
<td>Executive Director</td>
<td>IT Staff</td>
<td>Medical Director</td>
</tr>
<tr>
<td>IT Staff</td>
<td>W</td>
<td>M</td>
<td>W</td>
<td>W</td>
</tr>
<tr>
<td>Medical Services</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Reception</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Medical Waiting Area</td>
<td>M</td>
<td>M</td>
<td>M</td>
<td>M</td>
</tr>
<tr>
<td>Phone/Student Station</td>
<td>W</td>
<td>W</td>
<td>W</td>
<td>W</td>
</tr>
<tr>
<td>Clinic Manager</td>
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<td>W</td>
<td>W</td>
<td>W</td>
</tr>
<tr>
<td>Exam Rooms</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
</tr>
<tr>
<td>Minor Procedure/Holding</td>
<td>S</td>
<td>S</td>
<td>S</td>
<td>S</td>
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<tr>
<td>Triage Room</td>
<td>W</td>
<td>W</td>
<td>W</td>
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<tr>
<td>Director of Clinical Services</td>
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<td>W</td>
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<tr>
<td>Care Provider Station</td>
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<td>Phone Nurse</td>
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<td>Phone Nurse Consultation</td>
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<td>Patient Toilet</td>
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<tr>
<td>Lab Office</td>
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<td>Lab Waiting Area</td>
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<tr>
<td>Pharmacy</td>
<td>W</td>
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<td>Pharmacy Waiting</td>
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<tr>
<td>Counseling and Consultation Services</td>
<td>S</td>
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<td>Crisis Waiting Area</td>
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<td>Training Therapy</td>
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<td>Trauma Workroom</td>
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<tr>
<td>Health Promotion and Wellness</td>
<td>HPW Reception</td>
<td>W</td>
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<tr>
<td>HPW Director</td>
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<tr>
<td>MPH/MPH Program Coordinator</td>
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<tr>
<td>Health and Immunization Outreach Coordinator</td>
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<td>Graduate Student</td>
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<tr>
<td>Peer Health Advocates</td>
<td>S</td>
<td>W</td>
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</tr>
</tbody>
</table>

Table 6.4.1. Student Health Services Adjacency Matrix
6.5. **Spatial Organization of Activities and/or Rooms**

Figure 6.5.1. describes preferred organizational relationships for the UWM Student Health Services facility.

---

**Figure 6.5.1.** Student Health Services Conceptual Spatial Organization

- **Medical Services**
  - Counseling & Consultation Services
  - Shared Waiting Area
  - Pharmacy
  - Lab
  - Medical Provider Offices
  - Exam Rooms
  - Triage Rooms
  - Supervisor/Manager Offices
  - Clinical Support Spaces
  - Procedure Rooms

---
Figure 6.5.1. Student Health Services Conceptual Spatial Organization (Continued)
Figure 6.5.1. Student Health Services Conceptual Spatial Organization (Continued)

HEALTH PROMOTION AND WELLNESS SERVICES

PUBLIC ACCESS/TOWN SQUARE

MULTI-PURPOSE & CONFERENCE ROOMS

HEALTH & WELLNESS RESOURCE AREAS

PEER HELP ADVOCATES

SUPPORT SPACES

ADMINISTRATION
Figure 6.5.1. Student Health Services Conceptual Spatial Organization (Continued)

STUDENT HEALTH CLINIC SERVICES

- Administration
- Counseling & Consultation Services
- Medical Services
- Shared Reception/Waiting
- Health Promotion & Wellness Services
- Shared Clinic Support
- Public Access/Town Square
Planning Recommendations

7.1. Conceptual Site and Fit Plan
7.2. Site/Civil/Utilities Description
7.3. Building Organization Framework Diagram and Alignment with Planning Recommendations
7.4. Building/Systems Description
  7.4.1. Architectural/General Construction Systems
  7.4.2. Structural Systems
  7.4.3. Mechanical Systems
  7.4.4. Electrical Systems
7.1. **Conceptual Site and Fit Plan**

UWM Student Health Services’ proposed new location is in the Northwest Quadrant, a 10.9 acre site located directly northwest of the East Hartford Ave and North Maryland Avenue intersection on Kenwood Campus. Existing campus buildings are situated directly adjacent to the east, southeast, and south. A residential neighborhood surrounds the NWQ to the north and west.

The Northwest Quadrant is composed of buildings that had been used by Columbia - St. Mary’s Hospital before the institution relocated. The complex is an agglomeration of different buildings constructed between 1919 and 1993 as the hospital developed and space needs changed. Building heights range from one to eight stories tall.

The oldest buildings are located on the east side of the site. The hospital added wings to the west, and eventually a parking structure and mechanical buildings.

Due to its various stages of additions, understanding the former Columbia - St. Mary’s complex and its relationship to entrances/exits can be complicated. The site slopes from east to west so that the NWQ-A building (on the east end of the site) is entered on Floor 1. At the western end of the site (NWQ-C and NWQ-D), the complex is entered one floor below, on ground floor.

UWM Student Health Services’ proposed location is in portions of NWQ-B Floor 1, all of NWQ-B Floor 2, and portions of NWQ-C Floor 2. Figures 7.1.1. through 7.1.5. describe the relationship between this proposed space and the broader institution, as well as the Northwest Quadrant site itself. Figure 7.1.6. and Figure 7.1.7. is a conceptual space fit plan that addresses the issues of conforming to an existing facility while maximizing room adjacencies, operational efficiency, and flexibility of environments. The existing structural grid of the facility, common shafts and risers, location of exit stairs and access elevators provided a challenge in the organization of the clinic. This fit plan represents an example spatial test fit for Student Health Services. Final location and space plans will be determined in the Design Phase. The proposed fit plan is described below.

Floor 1 access to the clinic off of the Town Square provides a great opportunity for the Health and Wellness programs to interact with the community. This location grants immediate access to the pharmacy, enhancing the services line of this program. Multi-purpose rooms on this level allow public access to programs and meetings without having to access the main clinical floor, providing additional security to clinical records/supplies and reducing stigma of programs/seminars associating with the medical clinic (i.e. smoking cessation, dietary classes, etc.).

Floor 2 was organized into four support wings with one central reception and waiting area. Utilizing one reception (check-in/check-out) environment for all services reduces confusion for the patient/client, reducing the opportunity for anxiety of the clinical visit. The four wings have been organized into counseling & consultation, medical clinic, medical offices & general support, and general clinic administration. The medical clinic was located in the widest wing as the space provides the depth for central support to all exam rooms. Medical offices were located in the adjacent wing which allows for a back-of-house connection, providing access of providers to their offices without moving through the waiting room.

The counseling and consultation wing provides collaboration between its counselors, psychiatrists, and training/observation rooms. Locating this service on Floor 2 with the medical clinic provides the cross collaboration of services as patients/clients may utilize both services, allowing for immediate aid to the needs of the community.

Separating the administration suite from the clinics allows for visitors to come and go without having to enter the clinical environment, allowing for a higher level of privacy and security. Please see the conceptual space fit plan (Figure 7.1.6 and 7.1.7.) representing these thoughts.
Figure 7.1.1. Context: University of Wisconsin-Milwaukee Buildings and Facilities within Milwaukee County (source: uwm.edu)

Figure 7.1.2. Context: University of Wisconsin-Milwaukee Main Kenwood Campus and immediate context (source: uwm.edu)
Figure 7.1.3. University of Wisconsin-Milwaukee Kenwood Campus

- Proposed Site of the Student Health Services
- Northwest Quadrant (NWQ)
- Existing Rooms within the NWQ
- Existing Rooms within Merrill Hall
- Existing Rooms within the Union
- Existing Norris Health Center

Northwest Quadrant (NWQ)

Existing Norris Health Center

Existing Rooms within Merrill Hall

Existing Rooms within the Union
Figure 7.1.4. Existing NWQ Site
Student Health Services is comprised of a wide range of services and programs serving the University of Wisconsin-Milwaukee community. Its proposed location is in portions of NWQ-B Floor 1, all of NWQ-B Floor 2, and portions of NWQ-C Floor 2.
- Final design of the communicating stair requires adjustment to the goal of the communicating stair is to promote communication around the stair and reception areas (first & second floors).

- While maintaining necessary fire separations, use of fire shutters may be required.

**Figure 7.1.6. NWQ-B Floor 1**

Conceptual Fit Plan
(Note: Not to scale)
7.2. Site/Civil/Utilities Description

**UTILITY SERVICES**
All utility services for the Student Health Services project will be provided by means of interior connections to existing NWQ building services.

- **Natural Gas**  
  Interior connections to existing building mains.
- **Electricity**  
  See Electrical Basis of Design
- **Potable Water**  
  See Plumbing Basis of Design
- **Sanitary Effluent**  
  Every attempt should be made to consolidate interior plumbing stacks in the work area associated with the space to minimize and combine building laterals. Also see Plumbing Basis of Design.
- **Storm Water**  
  Every attempt should be made to consolidate roof conductors in the work area associated with the space to minimize and combine building laterals. Also see Plumbing Basis of Design.
- **Chilled Water**  
  See Mechanical/HVAC Basis of Design
- **Steam**  
  See Mechanical/HVAC Basis of Design

**NWQ-B AMBULATORY ENTRANCE**
The proposed SHS project includes minor site related work on the south side of NWQ-B to create a dedicated exterior entry and parking area on Hartford Avenue with access to the Floor 1 level at the old emergency room loading area. This entrance will be used exclusively for Student Health Services. Routine drop-off and pick-up will occur and occasional ambulatory transport.

**EXTERIOR IMPROVEMENTS**
It is recommended that this entrance meet the current standards for ADA accessibility. Re-striping of the concrete parking area will include a van accessible aisle in front of the existing handicap ramp. The handicap ramp should be replaced to include additional width to accommodate an ambulatory gurney and include tactical surfaces for the visually impaired.

**SITE DRAINAGE**
The existing storm inlet will remain in place and is connect to the City combined sewer.

**PAVEMENT CONDITION**
The existing concrete pavement is in fair condition with a remaining service life of 10-15 years. Replacement is not anticipated with the SHS project.

**LANDSCAPING**
The landscaping adjacent to south face of the SHS should be removed and replaced in a manner consistent with the Hartford Avenue street yard.

**SITE SIGNAGE & WAYFINDING**
The parking area should include restricted use and wayfinding signage in a manner consistent with the UWM campus standards.
7.3. **Building Organization Framework**
**Diagram and Alignment with Planning Recommendations**

The 2010 University of Wisconsin-Milwaukee Master Plan outlined a vision for land and building use and established a planning framework to make that vision a reality. It was the first campus master plan completed since 1972, and the report analyzed current campus use, prescribed design guidelines for future development, and set sustainability goals. Much of the report involved visioning future development of UWM’s main **Kenwood Campus**, located in Milwaukee’s Eastside neighborhood.

In addition, the report identified a number of ‘opportunity sites’ in Milwaukee County. These sites were chosen for their potential to address the university’s projected 1,164,000 assignable square footage (ASF) space deficit. Several projects were identified to help alleviate UWM’s large space deficit, but much more space is needed to amend critical shortfalls on Kenwood Campus. These projects included:

- The Zilber School of Public Health Campus located at The Brewery, a new site close to downtown
- The School of Freshwater Science and the Research Vessel located at The Harbor, a new site located in the Fifth Ward
- The Innovation Park Interdisciplinary Research Center located in a medical research cluster site in Wauwatosa
- The Kenwood Interdisciplinary Research Center located on UWM’s main Kenwood Campus

These sites will help alleviate UWM’s large space deficit, but much more space is needed to amend critical shortfalls on Kenwood Campus.
To address these shortfalls, another ‘opportunity site’ was described in the Master Plan:

- Columbia - St. Mary’s Hospital, located in the northwest quadrant directly adjacent to UWM’s main Kenwood Campus.

When the Master Plan Report was published (early 2010), the hospital was in the process of relocating to a new complex, and the old Columbia - St. Mary’s Hospital had not yet been purchased by the State on behalf of UWM. The purchase was completed later that year, adding 10.9 acres and approximately 850,000 GSF to the Kenwood Campus.

Although a specific planning framework for developing the CSM site was not established in the 2010 Master Plan (the purchase of the site was not yet official at that time), the site was identified for its potential to accommodate any combination of the following campus facilities and services:

- Student health services
- Relocated childcare facilities
- Academic space
- Student life facilities
- Parking
- Housing
- Recreation
- Open space
- Back office functions
- Other high-need uses of the university

The Master Plan acknowledged that further study would be necessary to fully evaluate the NWQ site’s potential.

In 2011, further study was granted and the Northwest Quadrant (NWQ) Space Planning Study analyzed potential uses of the new space. This study specifically considered redeveloping the Columbia - St. Mary’s complex instead of building new structures on the site. The redevelopment of the site was found to have great potential. A wide range of possible users were considered for varying terms of tenancy:

- Long-Term Users: permanent occupants
- Mid-Term Users: 3-10 year occupants
- Short-Term Users (or surge space users): temporary occupants lasting 1-3 years

The NWQ Space Planning Study put forth a ‘Preferred Option’ for potential users of the site. Four Long-Term Users with urgent space needs were identified:

- Student Health Center
- UWM Children’s Center
- Honors College
- Restaurant Operations

Other Long-Term Users were designated as Core Users for their potential to establish beneficial synergies and collaborations between departments in the NWQ. These users were recommended to be located in NWQ, where they could help form a cohesive academic cluster and strengthen their own programs. They included:

- School of Education
- School of Information Studies
- Teaching/Learning Space
- University Information Technology Services
An extensive list of other Variable/Miscellaneous Needs was identified by the Space Planning Study. The following departments, programs, and centers (in alphabetical order) were outlined as possible fits for the NWQ, but specific time-lines and lengths of tenancy were not established:

- Bursar’s & Cashier’s Offices
- Biomedical Informatics
- Campus Police
- College of Health Sciences
- Clinical Services
- Conference Center
- Emergency Operations
- English as a Second Language (ESL)
- Executive Training Center
- Facility Services
- Hefter Center Staff
- Helen Bader School of Social Welfare
- Long Term Surge Space
- L&S IT Support
- Math Department
- Medical Imaging
- Parking and Transit
- Public Health Wet Labs
- Revenue Generators
- Residential Space
- Student Services
- Women’s Studies

Following the Northwest Quadrant Space Planning Study, the Quorum Architects team began work on the NWQ Redevelopment Plan and nine associated Program Statements/Pre-Designs.

Projects underway or completed in the NWQ at the time of writing include: the Children’s Learning Center (11C2L), a Greenhouse (part of the Kenwood IRC project - 10D2Q), and a Classroom Renovation/Instructional Technology Improvement project in NWQ-D (12C2U). Additionally, infrastructure upgrades to the complex have begun in the form of Telecommunication and Fire Alarm projects (12B1R), a Central Utilities Project (11A3M), and a Multi-Building Elevator Renovation Upgrade (12A1A). The Honors College has moved to NWQ-F, occupying a portion of that building as academic offices, office support space, and general assignment classrooms. NWQ-B is occupied as campus surge space.

STUDENT HEALTH SERVICES
The NWQ Space Planning Study identified the Student Health Services as an urgent, preferred Long-Term User of the NWQ site for a number of reasons. The study found that the current Norris Health Center is grossly undersized and unable to handle its approximately 30,000 yearly visits. Additionally, the old Columbia - St. Mary’s hospital site was identified as a viable option for relocation because of some existing building features on the site that could accommodate healthcare services. The previous 2010 Campus Master Plan also cited growth in counseling and mental health programs and the strong need for additional health and wellness space.

It is recommended that the Student Health Center relocate to a space that can accommodate their needs and embody a modern health care delivery approach. This will enable the Health Center to continue to fulfill its mission of providing quality health care and wellness services to the UWM student population.
Figure 7.3.1. Proposed NWQ Organization Framework
7.4. Building/Systems Description

The following is a review of the Northwest Quadrant’s building and systems as they relate to the proposed site of Student Health Services.

7.4.1. Architectural/General Construction Systems

SUMMARY
UWM Student Health Services is a recognized and accredited leader in student health providing excellent healthcare in partnership with the campus community. The new location of the Student Health Services in the Northwest Quadrant project promotes the center’s mission of assisting students in identifying, understanding and responding to current health issues through medical and mental health care and health promotion programs. The new facility will:

- Encourage Collaboration
- Allow Patient-Focused Care in all Areas
- Enhance the Patient and Staff Experience
- Positively Impact the UWM Community
- Be Warm and Inviting
- Be Efficient yet Comfortable
- Provide Openness, Balanced with Privacy
- Flexible / Adaptable for New Programs

ACCREDITATION
- The Student Health Center is accredited by the Ambulatory Health Care Commission for Ambulatory Health Care Centers. All guidelines for accreditation are to be followed.

GENERAL
- Final selection of Clinical, Office, and Support space wall, floor, and ceiling surfaces must be compatible with the function of the rooms and must yield satisfactory acoustical and infection control environments.

INTERIOR PARTITIONS
- Metal studs and gypsum wall board, reinforced as required to support wall hung devices. Walls to be built from deck to deck, sealed/caulked at top and bottom.
- Sound attenuating insulation required for all walls.
- Wall outlets/boxes to be offset to prevent sound transfer.
- Wall penetrations to be sealed to prevent sound transfer.
- All drywall to be held ½” off floor.
- Fire ratings are to be determined during code review.

DOORS
- Minimum Width: Doors from corridors to clinical spaces shall be 3’6”. Office, Conference, and Support Space doors shall be 3’-0” wide.
- Minimum Height: 7 feet
- Main and ambulance entrances should be a minimum of 3’-6” to accommodate gurney traffic.
- Vision Panels: Clinical Rooms and Consult Rooms, and other rooms requiring privacy, will not require vision panels. Provide vision panels in all other doors wherever feasible to bring natural light into the interior spaces.
- Key Card requirements and security level details: To be determined in Design Development; Areas such as Laboratory, Pharmacy, Medication Alcove and any medical record storage will require special security considerations.

CEILINGS
- Minimum Ceiling Height: 9’-0”
- Ceiling Type: Lay-in acoustical ceiling tile to be used in all areas.
- Areas such Laboratory, Pharmacy, Toilet Rooms, Clean and Soiled Work Rooms, and Procedure Rooms require, smooth surfaced, scrubable tiles, clipped or secured in place.
FLOORING
- Carpet shall be used for Offices, Consult Rooms, Conference and Meeting Rooms, Staff Support Spaces, Waiting Rooms, and Public Spaces.
- Sheet Vinyl with welded seams shall be used for Clinical spaces, including Exam Rooms, Laboratory, Pharmacy, Procedure Rooms and support space.
- Rubber base to be provided for all carpeted and hard surface floors; Wood base (or other to match building public spaces) may be used in public areas such as Reception/Waiting and Health & Wellness Resource spaces.
- VCT (static dissipative flooring when required), vinyl base, paint should be provided.
- VCT may be used as an alternate in storage and other back of house environments.

FINISHES
- In general, interior paint is a satisfactory material for the majority of spaces with an egg shell, satin, or other low-sheen finish.
- Special finishes are to be used for architectural design considerations or to satisfy program needs.
- Pharmacy retail area may require a slat-wall system.
- Waiting and Public areas will require special finishes.
- Waiting and public areas/corridors may utilize vinyl (or similar) wall-covering for added wall protection.
- Solid surface material to be used at all wet locations, pharmacy, lab and reception areas.

WINDOW COVERINGS
- Campus standard window treatments at all windows to be provided consistent with adjacent occupants.

WALL PROTECTION
- Provide chair rail at all areas as required per chair/furniture placement.
- Corner guards to be placed on all exposed corners in corridors/hallways and any other locations as needed per equipment use.
- Rigid vinyl wall protection (or similar) should be provided at all locations of high cart traffic or cart storage.

LIGHTING (ARCHITECTURAL COMMENTS - ALSO SEE ELECTRICAL)
- Direct/Indirect lighting fixtures will be appropriate in most areas. Lighting is to be uniform in nature, and glare free.
- Task lighting is required at all workstations and locations where work requires immediate lighting; light level range from 20-50 fc at desk level.
- Procedure rooms, Laboratory, and Pharmacy spaces will require fully lensed fixtures.
- The introduction of natural light into interior spaces provides an opportunity for visual relief and is important in creating a comfortable work environment. Whenever possible, staff work spaces and offices are to be located to maximize natural daylight or borrowing light by use of clerestories or interior windows.
- Care should be given to ensure that excessive glare does not result from natural daylight.
- Fluorescent fixtures shall be wired for two level light at all exterior rooms and in all patient exam/treatment spaces.
- Exit and emergency lighting should be integrated into fixture and designed per code.
- Meeting, Multi-Purpose, Conference and Group Therapy rooms should provide flexibility in lighting; general room illumination and dimmable lighting should be provided allowing for appropriate levels of lighting during presentations, etc.
HARDWARE / ACCESSORIES

- All paper towel and soap dispensers to be provided by owner and installed by general contractor, unless otherwise directed by owner.
- All chart holders, blood pressure cuffs, Otoscopes and Sharps containers to be provided by owner and installed by general contractor, unless otherwise directed by owner.
- All mirrors, coat hooks, toilet tissue dispensers and other miscellaneous hardware to be provided and installed by general contractor, unless otherwise directed by owner.
- All hardware/accessories to be installed per code requirements.
- Sharps containers to be installed 56” to the top of the container.
- Keyboard trays and monitor arms to be provided by owner and installed by general contractor, unless otherwise directed by owner.
- Monitor arms to allow for screen to be lowered to desk surface.
- All grommet locations to be field located by owner and installed by general contractor.
- Wall-mounted alcohol-based gel hands sanitizing dispensing units are not to be installed in corridors or other routes of egress and otherwise determined by code.
- Fire extinguisher cabinets are not to be lockable; finishes to match building/UWM standards.

FURNISHINGS & EQUIPMENT CRITERIA

- Casework:
  - Plastic laminate casework with solid surface tops.
  - Upper cabinets to be at least 14” deep to accommodate binder storage.
  - Shelving: The shelves shall be adjustable height, heavy weight, laminate finish.
  - Upper cabinets to have two adjustable shelves each.
  - Sinks to have a height of 34” at all public access and break room environments.
  - To be designed at 30”, 36” and 40” high as needed for function.
  - Depth of casework to be 24”, 30” or 36” as required for function or equipment.
  - Sinks and cup sinks will be epoxy resin as required by program.
  - Flammable storage cabinets. If required, provide cabinets Factory Mutual (FM) approved or Underwriters Laboratories (UL) listed. Cabinet shall not be ventilated unless required by local authorities. Vent openings shall be sealed with plugs, supplied by the manufacturer.
  - Corrosives storage cabinets: If required, provide cabinets Factory Mutual (FM) approved or Underwriters Laboratories (UL) listed. Provide polypropylene vent piping. Under-counter cabinet vent piping to extend above the hood work surface and into the hood.

- Laboratory Fume Hood:
  - Locate fume hood in an area of minimum turbulence away from personnel traffic and supply air. Coordinate supply diffuser locations during Design Development to reduce cross-draft issues.
  - Type of fume hood to be confirmed in Design Development.

- Procedure Room
  - Provide floor outlet for power table/chair.
  - Electrical outlet above ceiling for ceiling mounted exam light.

VERTICAL CIRCULATION – ELEVATORS & NEW INTERNAL CIRCULATING STAIR

- Elevators: The red elevators will be fully modernized by an infrastructure upgrade. Below is a summary of how the elevators should function from a control perspective:
  - The South elevator #14 and Center elevator #13 would operate as a 2-car group, with public access to the
Student Health Services floors 1-2. Secure access will be provided to floors B-G and 3-8 by key switches or via an access control system provided by others. This will enable restricted access to the Greenhouse and new Penthouse levels.

- North elevator #12 would be removed from the present 3-car group and altered to operate independently from elevators #13-14 as a simplex elevator serving all floors from B-G-1 to 8. A wall would be constructed by others between existing elevators #13 and #12, and a new riser of corridor call stations installed on the elevator #12 side of the partition.

**Internal Stair:** A new internal circulating stair would connect Floors 1 and 2 for Student Health Services Only. The stair would consist of metal guardrails and balusters with terrazzo or tile tread and metal risers. Final location of the stair from Floor 1 to Floor 2 reception areas requires additional considerations for maintaining necessary fire separations, which may require use of fire shutters, fire-rated glass, or similar solutions. It should promote openness and communication between the two levels while maintaining privacy for check-in/out.

**PLUMBING DESIGN & FIRE PROTECTION:** (ARCHITECTURAL COMMENTS) ALSO SEE PLUMBING AND FIRE PROTECTION

- **Life Safety Systems:**
  - The Clinics will be fully sprinklered as part of this project. No special requirements.
- **Local Fire Extinguishers:**
  - Dry chemical or CO2 hand extinguishers shall be placed inside each lab area and in designated safety niches in the corridors.
- **Emergency Shower/Eyewash Stations:**
  - Verify specific requirements with the facility’s Environmental Health & Safety group.
  - Locate combination drench-hose/eyewash units at each major sink in the Laboratory, Pharmacy, and Soiled Utility.
  - Eyewash to be double spray-headed, hands-free operation.
- **Laboratory Drug-Test Toilet Rooms:**
  - Shut-off capabilities to toilets and sinks for drug testing to be electronic solenoids with controls accessible in labs.
  - Toilet shutoffs to be chrome plated brass fittings; no plastic shut-off devices.

**HVAC DESIGN:** (ARCHITECTURAL COMMENTS) ALSO SEE HVAC SYSTEMS

- **Air systems:**
  - Air returns and duct systems to be designed to avoid sound transfer from room to room.
  - Two exam rooms shall be negative pressure rooms with at least 12 air exchanges per hour. The system is to be active when facility is occupied (HVAC start-up) to prevent user error.
  - Procedure Rooms to be designed to ASHRAE Requirements for air exchange.
  - Laboratory and Pharmacy spaces to be designed to ASHRAE Requirements for air exchanges.

**7.4.2. Structural Systems**

**SUMMARY**

The Student Health Services project would utilize portions of NWQ-B’s Floor 1 and Floor 2, as well as a small portion of NWQ-C’s Floor 2. The occupancies and functions within the proposed SHS space will require the underlying structure to be capable of supporting uniform design live loads ranging from 40 pounds per square foot (psf) to 100 psf, as determined by the functions of individual rooms. It appears that the existing structure at the affected areas of NWQ-B and NWQ-C will generally be capable of supporting the intended loads without the need for significant structural upgrades.
The retail pharmacy area at NWQ-B Floor 1 would require a 100 psf design live load. Based on a review of structural plans for NWQ-B, it is believed that the existing structure provides the required structural capacity for this space. For the nearby Health and Wellness Resource Room at NWQ-B Floor 1, it is also believed that the existing structure is adequate, provided that this space is intended as a “reading room” rather than a library-style stack room.

The schematic floor plan adds a new corridor at NWQ-B Floor 1, for access to several individual offices. Floor 1 corridors generally require a 100 psf design live load. After reviewing the NWQ-B Floor 1 structural plans for the affected area in detail, it is believed that the existing structure will accommodate the 100 psf design live load as-is.

There are several exam rooms and lab spaces on NWQ-B Floor 2 that require the underlying structure to be capable of supporting 60 psf design live load. Most of these fall on areas that were originally designed for 50 psf live load. However, due to changes to the load factors used in the applicable design codes, an analysis of the existing structure using contemporary / current design methods indicates that a 60 psf design live load can be satisfied without the need for structural upgrades or modifications.

The schematic floor plan includes several relocated corridors at NWQ-B Floor 2. Corridors on upper floor generally require 80 psf design live load, whereas the available documentation indicates that the circa-1963 “upper floors” of NWQ-B were designed for a general live load of 50 psf. However, an analysis of the existing reinforced concrete pan joist structure indicates that the building has the capacity to accommodate the relocated corridors that have been shown, without the need for structural modifications.

There are a few individual rooms at NWQ-B Floor 2 that may require a design live load of greater than 60 psf depending on the interpretation of the building code official. Generally, these are small areas and not likely to necessitate structural modifications. Specific concerns with individual rooms are noted herein.

The SHS plans include a new circulating stair between NWQ-B Floor 1 and Floor 2.

The affected area of NWQ-C is within an area originally designed to accommodate 150 psf live load, and thus there are no concerns with any of the occupancies shown within NWQ-C.

DISCLAIMER FOR ALL PROGRAM STATEMENT/PRE-DESIGN COMMENTS
These Program Statement/Pre-Design comments are intended to identify the major challenges that would need to be addressed in order for the referenced project to proceed through further design development, creation of construction documents, and into construction. The available structural and architectural drawings for the NWQ buildings have been used as primary references to develop these comments. An attempt has been made to identify any significant remaining “unknowns” that may require further investigation.

PROGRAM STATEMENT/PRE-DESIGN DOCUMENTATION
All comments within this document are based on the room names and general layout as shown on the “Pre-Design Schematic Floor Plan | UWM NWQ Quadrant | Student Health Center” drawings dated 2/7/13 and 3/5/13 received from Quorum Architects on 5/14/13. Previous versions of this plan used in the initial development of these comments include a version dated 1/24/13. The 3/5/13 SHS plan shows the same room layout as the 2/7/13 plans but removes the “Health and Wellness Resource Room” from Floor 1 and adds a circulating stair going up to Floor 2. These comments include a discussion of the potential structural implications of creating an opening in the Floor 2 slab and adding the stair shown on the 3/5/13 plans.
DESIGN LIVE LOADS – EXISTING SPACE

The design live loads in pounds per square foot (psf) originally assumed for the affected floors of NWQ-B and NWQ-C were shown on Sheets S101 and S102 included with the previously-issued “Structural Narrative for NWQ Redevelopment” document dated September 20, 2012. Please reference that report for further comments regarding how the design live loads shown on these sheets were identified and/or calculated based on available information.

As will be discussed herein, it is believed that the affected areas of NWQ-B have an actual design live load capacity greater than what the available reference documents specifically indicate, due to changes in the applicable design codes.

Sheet S101 as previously issued included a conservative interpretation of the circa-1963 design live load value used for NWQ-B Floor 1. Specifically, it was unclear based on the initial review of the documents if this floor was designed for the 50 psf live load that was used for “Upper Floors and Rooms” or the 100 psf live load for “Basement and Ground Floor” levels. Within the area affected by the SHS project, evidence the structure was designed for 100 psf live load was found. At this time it has not been verified if the other areas of NWQ-B Floor 1 were also designed for 100 psf live load rather than the 50 psf previously showed on S101.

FLOOR FRAMING SYSTEMS

The floor framing systems for the affected floors of NWQ-B and NWQ-C were shown on Sheets S201 and S202 included with the “Structural Narrative for NWQ Redevelopment” document dated September 20, 2012. Please reference that report for further comments regarding how the floor framing systems shown on these sheets were identified.

EXISTING CONSTRUCTION DOCUMENTS USED FOR REFERENCE

The following construction documents were used for reference to analyze the existing structure’s suitability for the intended loads:

- NWQ-B Floors 1 and 2: These levels were part of the original NWQ-B building as shown on Eschweiler Eschweiler & Sielaff Sheets S-1 to S-12 and S-101 dated 9/25/1963, with revisions dated 9/12/1964 and 10/26/1964 (Sheets S-6 and S-7), and additional revision dates as shown on S-101. “Design Live Loads” are provided on Sheet S-1. Floor 1 framing is shown on S-4. Floor 2 framing is shown on S-5. Basement Floor Framing on Sheet S-2 was also used for reference, as explained within the “Discussion” section of this report.

- NWQ-C: The proposed project would affect only a portion of Floor 2 that was added as part of the 1993 NWQ-C expansion / addition project. Structural drawings developed by Arnold & O’Sheridan and dated 3/15/1993 were used for reference, including Sheet S-2 listing design live loads and Sheet S-6 showing Floor 2 framing.

Additional information was obtained through fieldwork conducted as part of the development of the Structural Narrative dated September 20, 2012. No in-depth research, demolition, or testing of any kind has been performed to date in order to confirm or update the information obtained from the sources listed above, which were received from Quorum Architects without any guarantee of their accuracy.

DESIGN LIVE LOADS – REDEVELOPED SPACE

Table 7.4.2.1 lists the room-by-room occupancy classifications and the corresponding required minimum uniform design live loads for each of the major rooms shown in the Program Statement/Pre-Design drawings. Please note that ALL occupancy classifications shown in Table 7.4.2.1 are based on the team’s judgment alone and are intended for initial discussion purposes only; in actual practice, the occupancy classification for any given space shall be subject to review and approval by the local building code officials. The first column of the table lists the suggested Room Name. The
second column lists the Occupancy or Use per IBC 2012 Table 1607.1 that is believed to best align with the proposed function of the individual room.

For both IBC 2009 and 2012, Section 1607.2 indicates that “for occupancies or uses not designated in Table 1607.1, the live load [requirements] shall be determined in accordance with a method approved by the building official”. There are many common occupancies that are not directly addressed within the IBC; for example, there is no IBC category for bathrooms. One source for design live loads beyond the IBC categories is the American Society of Civil Engineers (ASCE) standard #7, entitled “Minimum Design Loads for Buildings and Other Structures”. The 2005 edition (ASCE 7-05) is referenced by IBC 2009 for many design criteria. The 2010 edition (ASCE 7-10) is referenced by IBC 2012.

Both ASCE 7-05 and ASCE 7-10 include Table C4-1 as part of their commentary section; this table gives design live loads for many categories not included in IBC (e.g. “Rest rooms” are listed in Table C4-1, with a design live load of 60 psf). However, because this table appears in the commentary section to the standard, it is offered “as a guide in the exercise of” the authority of the local officials, and does not have the full force of provisions that are given within the code itself.

ASCE 7 Table C4-1 has been cited in certain specific cases in the tables on the following pages to give us an idea of the required design live loads for individual rooms within the proposed SHS space. In other cases, there does not appear to be a clear match within either IBC or the ASCE standard. These are listed in the table, and described within these comments for cases where the possible load requirements may have an impact on where individual rooms are located in the final layout.

The required design live load from IBC or suggested live load from ASCE 7 (subject to approval by the building code official) is listed in the third column of each table, next to the design live load originally used for those spaces, as shown on the reference drawing indicated. However, for NWQ-B Floor 1 please note that an updated value of 100 psf design live load is used rather than the 50 psf live load shown on S101. The last two columns of Table 7.4.2.1 state whether or not the underlying structure appears to be suitable to support the design live loads indicated (in which case the phrase “Acceptable As-Is” appears in that column). If there appears to be a possibility that further analysis or structural upgrades may be required, a more detailed explanation is provided in the final column of the table. This “Comments” column also includes notes regarding particular concentrated loads, such as from individual pieces of equipment, or other concerns that may be specific to individual rooms.

Table 7.4.2.1 shows that many of the proposed SHS spaces could be considered structurally acceptable in their current state based on the design live loads considered in the original designs. Areas or rooms of specific interest were noted in the “Executive Summary” at the beginning of this document.
<table>
<thead>
<tr>
<th>Room Name (Alphabetically)</th>
<th>Occupancy or Use (IBC 2012 Table 1807.1)</th>
<th>Required Design Live Load (psf)</th>
<th>Existing Design Live Load (psf)</th>
<th>Reference</th>
<th>Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACE Program Coordinator, Assistant Grant Coordinator, Conference Room, Copy / Work, Grad Student, Ground Floor Greeter, Group Therapy / Mig. Room, Health &amp; Immun. Outreach Coordinator, HPW Director, MH / AODA Coord., Multi-purpose Room, Peer Health Advisor, Home, Supervisor, Peer Health Ed., Urgent Care Doc</td>
<td>Office Buildings - Offices</td>
<td>50</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td>SEE DISCUSSION SECTION OF NWQ-B FIRST FLOOR DESIGN LIVE LOADS</td>
</tr>
<tr>
<td>Corridor</td>
<td>Corridors - First Floor</td>
<td>100</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Health and Wellness Resource Room</td>
<td>Libraries - Reading Rooms</td>
<td>60</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Health and Wellness Storage</td>
<td>File Room, Letter (per ASCE 7, Table C4-1)</td>
<td>80</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Pharmacy, Pharmacy Consult., Pharmacy Sub-Wait, Pharmacy Storage, Pharmacy Retail</td>
<td>Stores, Retail - First Floor</td>
<td>100</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Storage (by Sub Wait)</td>
<td>File Room, Letter (per ASCE 7, Table C4-1)</td>
<td>80</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Urgent Care Exam</td>
<td>Hospital - Patient Rooms</td>
<td>40</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Vestibule, Waiting Areas</td>
<td>Office Buildings - Lobbies and First-Floor Corridors</td>
<td>100</td>
<td></td>
<td></td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
</tbody>
</table>

Table 7.4.2.1. Student Health Services Occupancy / Use Summary for NWQ-B Floor 1
<table>
<thead>
<tr>
<th>Room Name</th>
<th>(Alphabetically)</th>
<th>Occupancy or Use (IBC 2012 Table 1607.1)</th>
<th>Required Design Live Load (psf)</th>
<th>Existing Design Live Load (psf)</th>
<th>Reference</th>
<th>Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blood Draw, Lab, Lab Office, Lab Sub-Wait, Procedure (2 Total), Triage (2 Total), Vision Test / Wheelchair Scale</td>
<td>Hospital - Operating Rooms, Laboratories</td>
<td>60</td>
<td>50 / 80</td>
<td></td>
<td>S102</td>
<td>See Comments</td>
<td>It appears possible to satisfy the requirement of 60 psf for these areas originally designed for 50 psf. See Discussion: Exam Rooms and Lab Spaces at NWQ-B Second Floor</td>
</tr>
<tr>
<td>Care Provider Station, Clinic Manager, Copy / Work, Counseling Director, Counseling and Consultation Waiting, Crisis Counselor Office, Director of Clinical Services, Janitorial, Medical Services Waiting, Nurse Mgr, Patient Support / Billing, Phone Nurse, Phone / Student Station, Provider (10 Total), Psychiatrist (2 Total), Psychologists / Counselors (9 Total), PT Support Supervisor, Shared Computer Workstations (Multipurpose), Shared Reception, Staff Break with Lockers, Train. Therapy / Obasey, Room (4 Total), Trainee Workroom</td>
<td>Office Buildings - Offices</td>
<td>50</td>
<td>50 / 80</td>
<td></td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td>---</td>
</tr>
<tr>
<td>Clean Linen (2 Total), Clean Storage, Clean Utility (2 Total), Lab Storage, Soiled Utility, Storage (all)</td>
<td>STORAGE (NOT LISTED IN IBC)</td>
<td></td>
<td></td>
<td></td>
<td>S102</td>
<td>See Comments</td>
<td>Storage loads need to be defined. Existing structure should be sufficient for small areas of storage such as 80 psf &quot;Tile Room&quot; per ASCE 7 / Table C4-1</td>
</tr>
<tr>
<td>Corridors, Typical</td>
<td>Office Buildings - Corridors Above First Floor</td>
<td>80</td>
<td>50</td>
<td></td>
<td>S102</td>
<td>See Comments</td>
<td>Acceptable in the locations as shown. See Discussion: Reallocated Corridors at NWQ-B Second Floor</td>
</tr>
<tr>
<td>EMR Transition / Consult, Exam Room (18 Total), Exam / Holding</td>
<td>Hospital - Patient Rooms</td>
<td>40</td>
<td>50 / 80</td>
<td></td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td>---</td>
</tr>
<tr>
<td>Lab Toilet, Staff Toilet / Shower, Toilet (4 Total),</td>
<td>Toilet rooms (per ASCE 7, Table C4-1)</td>
<td>60</td>
<td>50</td>
<td></td>
<td>S102</td>
<td>See Comments</td>
<td>It appears possible to satisfy the requirement of 80 psf for these toilet rooms where the floor was originally designed for 50 psf live load, simply by analysis of the existing structure, particularly with respect to load factors. See Discussion: Exam Rooms and Lab Spaces at NWQ-B Second Floor for explanation, applicable here.</td>
</tr>
</tbody>
</table>

Table 7.4.2.1. Student Health Services Occupancy / Use Summary for NWQ-B Floor 2 (continued)
### Table 7.4.2.1. Student Health Services Occupancy / Use Summary for NWQ-C Floor 2 (continued)

<table>
<thead>
<tr>
<th>Room Name</th>
<th>Occupancy or Use (IBC 2012 Table 1607.1)</th>
<th>Required Design Live Load (psf)</th>
<th>Existing Design Live Load (psf)</th>
<th>Reference</th>
<th>Result</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin. Support (3 Total), Administrative Staff, Bus / Fin. / HR / Billing (2 Occupants), Copy / Work, Executive Director, Executive Director Administrative Support, Meeting Room, Purchasing (2 Total)</td>
<td>Office Buildings - Offices</td>
<td>50</td>
<td>150</td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Corridor</td>
<td>Office Buildings - Corridors Above First Floor</td>
<td>80</td>
<td>150</td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>IT</td>
<td>Computer Equipment (ASCE 7, Table C4-1)</td>
<td>150</td>
<td>150</td>
<td>S102</td>
<td>See Comments</td>
<td>Existing structure should be sufficient for anticipated loads. However, the positioning of specific pieces of new equipment should take into consideration the location of underlying supports.</td>
</tr>
<tr>
<td>Public Restrooms</td>
<td>Rest rooms (ASCE 7, Table C4-1)</td>
<td>60</td>
<td>150</td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>STORAGE (NOT LISTED IN IBC)</td>
<td>---</td>
<td>150</td>
<td>S102</td>
<td>See Comments</td>
<td>Type of storage needs to be defined. Existing structure is sufficient for fairly heavy storage loads.</td>
</tr>
<tr>
<td>Telecom Room</td>
<td>Depends on Type of Equipment Required</td>
<td>Say 100 psf</td>
<td>150</td>
<td>S102</td>
<td>See Comments</td>
<td>Existing structure should be sufficient for anticipated loads. However, the positioning of specific pieces of new equipment should take into consideration the location of underlying supports.</td>
</tr>
<tr>
<td>Toilet</td>
<td>Toilet rooms (per ASCE 7, Table C4-1)</td>
<td>60</td>
<td>150</td>
<td>S102</td>
<td>Acceptable As-Is</td>
<td></td>
</tr>
</tbody>
</table>
The retail pharmacy area at NWQ-B Floor 1 was one of the team’s major concerns when reviewing a preliminary plan for the SHS space. IBC Table 1607.1 requires a design live load of 100 psf for “retail” spaces. The “Retail Pharmacy” room itself could be subject to this requirement; very likely, the “Pharmacy”, “Pharmacy Sub-Wait”, and other related spaces could also be required to support a design live load of 100 psf. Sheet S-1 of the structural plans from the 1963 original construction indicate that a design live load of 100 psf was originally used for the “Basement and Ground Floor” levels, whereas a design live load of 50 psf was used for the “Upper Floors and Rooms”. There is some potential for confusion based on the naming convention used in 1963 versus the current NWQ floor naming system. Specifically, the lowest level of NWQ-B is referred to in the 1963 architectural documents as a “sub-basement” level, but by current convention is referred to as the “basement” level. The next level up is referred to in the 1963 structural plans as the “basement” level (see Sheet S-3), but is referenced in

![Figure 7.4.2.1. Approximate extents of SHS fit plan sketched over NWQ-B 1963 Floor 1 Framing North](image-url)
the 1963 architectural plans as the “basement (ground floor)” level. This is the “Ground Floor” by current convention. It was assumed that the “Basement and Ground Floor” loading requirement indicated on S-1 of the 1963 drawings applied to these lowest two levels, and that the “Upper Floors and Rooms” criteria applied for the levels above. In some cases, that assumption may be valid. However, in looking at the reinforced concrete pan joists in the Floor 1 area affected by the SHS plans, it was noticed that the joists indicated were identical to those indicated for the 1963 “Basement” (current “Ground Floor”) level. Specifically: spanning from approximately Grid A to Grid B on both levels in this area are Type J-1 joists; spanning from approximately Grid B to Grid C on both levels in this area are Type J-2 joists, spanning from approximately Grid C to Grid E on both levels in this area are Type J-3 joists. The reinforced concrete beams supporting the pan joists appear to be identical on both levels as well. Figure 7.4.2.1. shows the circa 1963 First-Floor framing supporting the SHS footprint, and Figure 7.4.2.2. shows the 1963 Basement (current “Ground Floor”) framing one level below, for comparison.

Figure 7.4.2.2. NWQ-B 1963 Basement (Current “Ground Floor”) Framing - Designed for 100 psf Live Load Footprint of Floor 1 SHS space shown - Note Similarities to Figure 2 - Same Pan Joists (Circled), Same Beams
Reinforcing for the J-1, J-2, and J-3 pan joists is shown in the joist schedule on Sheet S-11, see Figure 7.4.2.3, for reference. There is no indication anywhere on the schedule to suggest that the First-Floor instances of these joist types were to be reinforced differently than the same types when called out on the Basement (current "Ground Floor") level. Furthermore, on Floor 2 and above, more lightly reinforced joists are called out for the same areas.

Sample calculations were run on the J-1, J-2, and J-3 joist types and found them to be suitable for supporting design live loads of 100 psf. In calculations, a superimposed dead load of about 35 psf was accounted for due to 2.5" of terrazzo flooring indicated on the 1963 architectural plans (typical for both levels where J-1, J-2, and J-3 are specified), as well as an allowance of an additional 10 psf dead load for mechanical, electrical, or plumbing runs. To be

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Figure 7.4.2.3. Portion of 1963 NWQ-B Pan Joist Schedule

Figure 7.4.2.4. Typical 1963 Pan Joist Detail
conservative, each joist span was considered as a “simple span”, neglecting any reduction in the imposed flexural moment within a given span due to the continuity of adjacent spans. Even under those conditions, the J-1, J-2, and J-3 designs appeared to be sufficient to support 100 psf.

Analysis of the J-1, J-2 and J-3 joist types considered both the load factors that would have been used at the time of the original design or with more contemporary load factors. The impact of revised load factors will be explored more fully in a later section of this report.

The Health and Wellness Resource Room falls within the SHS footprint shown in Figure 7.4.2.1. This space is assumed to be similar to a library “reading room.” As such, a 60 psf design live load would apply. Per the discussion on the preceding pages, it is believed that the reinforced concrete pan joists and supporting structure at this area of NWQ-B Floor 1 is capable of supporting a 100 psf design live load.

The main SHS Floor 1 corridor is shown running north-south through the programmed space, beginning at the vestibule area. This is located at the same location as the circa-1963 NWQ-B first-floor corridor in this area. East of this main corridor is a second corridor, which circles two small offices and a storage area. This second corridor is at a location that was not a corridor location at the time of the original NWQ-B construction. First-floor corridors are currently required per IBC to support 100 psf design live load. Based on the team’s analysis of the pan joists under the new corridor as described on the preceding pages, it is believed that the existing structure can be shown to support 100 psf live load as-is. Please note that the live load capacity for NWQ-B Floor 1 beyond the SHS footprint has not been reviewed at this time. The 100 psf capacity indicated is for the specific area indicated only. Other portions of NWQ-B Floor 1, including portions where two-way reinforced concrete floor slab is used, have not yet been studied in detail. The design live load values shown on S101 of the Structural Narrative may be used for those areas until a more thorough analysis and review is completed.

Exam Rooms and Lab Spaces at NWQ-B Floor 2

Floor 2 of NWQ-B was designed to support a live load of 50 psf in typical areas and 80 psf in corridors, based on Sheet S-1 of the 1963 structural drawings. The typical 50 psf design live load is suitable to meet IBC’s requirements for “Office Buildings / Offices”, which is felt to be applicable to many of the rooms shown in the schematic Program Statement/Pre-Design drawings. However, the approximately 20 exam rooms indicated might better be classified as “Hospital – Operating Rooms, Laboratories”, where a 60 psf live load requirement would apply. For the “lab” spaces indicated, this same 60 psf design live load requirement can be used. In this case, it is assumed that the 100 psf recommendation of ASCE 7 Table C4-1 for “Laboratories, Scientific” is beyond what the intended use (routine medical lab work) would actually require. That gives us a number of scattered locations where it is believed 50 psf live load was used in the original design but it is now felt that 60 psf live load would be required. It is believed that the existing structure can be shown to be capable of supporting the increased loading without modification.

Sheet S-1 of the 1963 drawings indicates that the design was performed in accordance with the Wisconsin State Building Code, as well as the American Concrete Institute (ACI) Building Code. ACI’s “Building Code” is their Standard #318, which was titled “Building Code Requirements for Reinforced Concrete” in both the 1956 edition (ACI 318-56) and 1963 edition (ACI 318-63); the current title is “Building Code Requirements for Structural Concrete”.

The 1956 edition of the ACI code was the first edition to introduce the concept of load factors to concrete design, specifically in the code’s Appendix describing what it called “Ultimate Strength Design”. The main body of the 1956 code discussed the conventional approach of the time, in which unfactored (i.e. “service”) loads were used but a factor of safety was introduced by only allowing stresses in the concrete and reinforcing steel to reach a specified portion of the actual stress at which they would begin to yield. This conventional approach was known as Allowable Stress Design or Working Stress Design.
To understand the differences between Ultimate Strength Design and Allowable Stress Design, consider the concrete pan joists at NWQ-B Floor 2 (refer to Figure 7.4.2.4, for an illustration) to be designed as a series of T-shaped beams 15” deep by 6” wide at their base, spaced at 26” on center, spanning 30 feet. In this example, say that each individual T-Shaped beam is supporting a superimposed Dead Load of 35 psf due to the combined effects of terrazzo flooring as well as ductwork, conduit, piping, and ceiling components suspended from the structure. The beams must also support their own weight, roughly equivalent to a distributed dead load of 75 psf across the floor area. These dead loads must then be combined with a design live load, which for this example can be equal to 50 psf. The tributary area supported by any one individual beam is 26” wide. In this example, the total unfactored service load on an individual pan joist per linear foot of span can then be calculated as follows:

Dead = \left[ \frac{26” \times 1\text{ft}}{12\text{ in}} \right] \times [35\text{ psf} + 75\text{ psf}] = 238.3\text{ pounds per linear foot (plf)}

Live = \left[ \frac{26” \times 1\text{ft}}{12\text{ in}} \right] \times [50\text{ psf}] = 108.3\text{ plf}

Total = 346.7\text{ plf distributed load on pan joist}

If it is assumed that each pan joist acts a simply-supported beam, the maximum positive bending moment from the distributed load “w” will occur at the middle of the span and can be calculated as equal to wL^2 / 8, where L is the length of the span (note that in the actual NWQ-B design, provisions for continuous span were likely used to reduce the bending moment used in design, e.g. for an “interior” span where the flexural reinforcement is continuous with adjacent spans, the bending moment is permitted to be taken as wL^2 / 16). As a simplification for this example, we’ll assume that this moment is resisted by a pair of forces as illustrated in Figure 7.4.2.5.: compression in the upper section of the T-shaped beam, and tension in the reinforcing steel. The nominal moment resistance is calculated by T x (moment arm), where in this case the tension force T is equal to the area of reinforcing steel at the bottom of the section, multiplied by the allowable stress in the steel. The actual yield stress of the steel specified in the design was 60,000 pounds per square inches (psi). However, in the main text of ACI-56 the “Allowable Stress” for this reinforcing steel was limited to 20,000 psi.

Solving the example using the “Working Stress” (or Allowable Stress) Design provisions gives a value for the cross-sectional area of reinforcing steel (A_{steel}) that would need to place at the bottom of the pan joist to resist the applied loads.

In contrast to the Allowable Stress Design, Ultimate Strength Design would permit using the actual yield stress of 60,000 psi for the steel, but would require us to increase the applied loads by specified factors. In 1956, the recommended factors 5 were
1.2 for dead loads and 2.4 for live loads, or 1.8 for both dead and live loads. Using the inputs from the previous example, the total factored load on the sample pan joist, per foot of span, is the greater of the two possible combination (1.2D + 2.4L or 1.8D +1.8L).

Combination (I)
Dead = 1.2 \times 238.3 \text{ plf}
Live = 2.4 \times 108.3 \text{ plf}
Total = 545.9 \text{ plf}

Combination (II)
Dead = 1.8 \times 238.3 \text{ plf}
Live = 1.8 \times 108.3 \text{ plf}
Total = 623.9 \text{ plf} (use this)

The factored load per linear foot “w_u” of about 624 plf can be input into \( w_u L^2 / 8 \) to find the maximum positive bending moment, and the remaining steps in the analysis are similar except that in this case the actual 60,000 psi yield strength of this steel can be used. By this Ultimate Strength Design approach, the required steel to be calculated is significantly less than what had been obtained using Allowable Stress Design. Indeed, the cost savings from using smaller cross-sections and less reinforcing steel was one of the main advantages of the “new” method of Ultimate Strength Design when it was first introduced. For NWQ-B, if the structure was originally designed with Allowable Stress Design, an analysis using Ultimate Strength Design could be expected to show the structure to have significantly additional capacity beyond what the Allowable Stress Design method would have indicated during the original design.

It is not known whether Allowable Stress Design or Ultimate Strength Design was used in the design of NWQ-B. It would be conservative to assume that Ultimate Strength Design was used, thereby producing what would have been the most efficient design possible circa 1963. Indeed, the Ultimate Strength Design had been published in 1956 and would likely have been understood by most engineers by 1963, and used by many. Even if it is assumed that the designers for NWQ-B used Ultimate Strength Design, there have been refinements in design methods since 1963 that can be used to “find” additional capacity in the structure. Indeed, even with the publication of ACI 318-63, the “Ultimate Strength Design” concept introduced in 1956 had already evolved a bit into an early form of what would now be called Load and Resistance Factor Design (LRFD). The LRFD approach is similar to Ultimate Strength Design but adds a “resistance factor” depending on the type of stress being considered, in addition to factors on dead, live, and other types of loads. For example, ACI 318-63 presents a load combination of 1.5D + 1.8L that needs to be used with a resistance factor of \( \phi = 0.9 \) for flexural (bending) strength. With the same inputs as in the example, \( 1.5 (238.3) + 1.8 (108.3) = 552.4 \text{ plf} \), although the yield strength of the steel needs to be reduced to \( 0.9 \times 60,000 \text{ psi} = 54,000 \text{ psi} \) when calculating the area of steel that is required. Table 7.4.2.2. shows how load combinations have continued to evolve since 1963. The resistance factor of \( \phi = 0.9 \) for flexure has not changed since it was first introduced, although it is worth noting that resistance factors for shear and other parameters have been adjusted over time.

The ACI 318-56 load combinations assumed that the dead load component included any loading introduced from “volume change due to creep, elastic action, shrinkage, and temperature” in addition to the self-weight of the structural elements and permanent building components. ACI 318-63 uses “dead loads” in the same sense as current methods, so to be sure an appropriate comparison is examined, it is assumed that ACI 318-63 could have been used in the design of NWQ-B. This is also especially convenient since it is not known that the resistance factor for flexural bending has been constant since ACI 318-63. Thus, the comparison can be simplified to identifying how the load factors used have changed.

If an overall dead load of 35 psf + 75 psf = 110 psf and a live load of 50 psf is assumed, the total factored load using ACI 318-63 would
be 1.5 x 110 psf + 1.8 x 50 psf = 255 psf. Using current methods, the factored total load as 1.2 x 110 psf + 1.6 x 50 psf = 212 psf are calculated. As long as the total factored load is less than the 255 psf it is assumed that the structure was originally designed for, no structural modifications are necessary. In this case, a 60 psf live load gives us a combined factored load of 2 x 110 psf + 1.6 x 60 psf = 228 psf. This suggests that areas requiring 60 psf live load can be accommodated by the existing structure as-is.

Figure 7.4.2.6. is a graphical representation of how the changes in load factors affect the overall factored load (applicable to the simplified example only, and assuming a constant dead load of 110 psf). Beginning with 50 psf live load, Line A takes us to the combined load of 255 psf that we’d obtain from using the circa 1963 1.5D + 1.8L combination. By travelling to the right along Line B, the current 1.2D + 1.6L combination results in the same total combined load can be found. Following Line C back down to the x-axis indicates that the value of live load at which 255 psf combined live load is reached using the current combinations is somewhere around 77 psf (checking that result: 1.2 x 110 psf + 1.6 x 77 psf = 255.2 psf).

This exercise indicates that due to changes in load factors, the structure may have more capacity than originally assumed by the designers. Please note that in addition to flexural bending, there are several other aspects of the design that would need to be verified as part of a complete analysis. The calculations presented here are for illustrative purposes only, and deal with an idealized and vastly simplified case (for example, the effects of live load reduction, continuity between adjacent spans, partition loads, etc have not been considered). In broad terms were are comfortable with stating now that rooms requiring with a design live load of 60 psf can be located anywhere on NWQ-B’s Floor 2, even though the original design live load as stated on the drawings was only 50 psf.

### Table 7.4.2.2. Load Combinations for Design of Concrete Beams in Bending, 1956 - Present

<table>
<thead>
<tr>
<th>Building Code and Method</th>
<th>Load Combination (Beams in Bending)</th>
<th>Stress in 60 ksi Steel (Beams in Bending)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACI 318-56 Working Stress</td>
<td>D + L</td>
<td>20,000 psi</td>
</tr>
<tr>
<td>ACI 318-56 Ultimate Strength</td>
<td>1.2D + 2.4L</td>
<td>60,000 psi</td>
</tr>
<tr>
<td>ACI 318-63 Section 1506  (Load and Resistance Factor Design)</td>
<td>1.8D + 1.8L</td>
<td>60,000 psi</td>
</tr>
<tr>
<td>ACI 318-71 to ACI 318-99 (Load and Resistance Factor Design)</td>
<td>1.5D + 1.8L</td>
<td>0.9 x 60,000 psi</td>
</tr>
<tr>
<td>ACI 318-02 and Later (Load and Resistance Factor Design)</td>
<td>1.2D + 1.8L</td>
<td>0.9 x 60,000 psi</td>
</tr>
</tbody>
</table>

**RELOCIATED CORRIDORS AT NWQ-B FLOOR 2**

As noted in the previous discussion section, Floor 2 of NWQ-B was designed to support a live load of 50 psf in typical areas and 80 psf in corridors. Sheet S102 in Appendix B shows how these design live loads were likely distributed on this level, based on the interpretation of the locations of “corridors” as indicated on the 1963 architectural plans. The schematic Program Statement/Pre-Design drawings provided for review show corridors in a vastly different arrangement than what was used in the 1963 plans.

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However, as the corridors are relatively narrow and mainly run perpendicular to the spans of the pan joists, the effect on any one individual pan joist is minimal. As an example, consider a pan joist spanning about 21 feet with a corridor about 6 to 8 feet wide located near the middle of the span. We’ll assume the rooms on either side of the corridor require 60 psf design live load; the corridor itself would require 80 psf design live load. The applied distributed load is similar to what is shown in Figure 7.4.2.7. The maximum positive bending moment will depend on continuity with adjacent spans; for illustrative purposes the joist in Figure 7.4.2.7. is shown simply supported at each end.

In Figure 7.4.2.7., the width of the corridor is represented by the “b” dimension, while the “a” and “c” dimensions locate the corridor along the span. By analysis, this has shown that the maximum bending moment produced for typical or expected combinations of a, b, and c using current load combinations (1.2D + 1.6L) and the assumed future live loads of 60 psf for typical exam rooms and 80 psf along the corridors will result in a lower applied load than what is obtained using circa 1963 load combinations (1.5D + 1.8L) and an overall design live load of 50 psf. Thus it appears that the corridors can be relocated as needed, provided that the surrounding rooms
do not require greater than 60 psf design live load. The analysis further suggests that the corridor could potentially be much wider than is currently shown, if desired.

NEW STAIR BETWEEN NWQ-B FLOOR 1 AND SECOND FLOOR
The 3/5/13 SHS plans show a new circulating stair starting at NWQ-B Floor 1 level near the Student Health Services entrance. As shown on those plans, the stair would go north for a few steps to an intermediate landing, then turn and head west for the remainder of the stairs’ rise. Framing for the first few steps could sit directly on the Floor 1 structural slab. Adding the longer span of stairs would require creating an opening in the Floor 2 slab. The proposed stair location is depicted in Figure 7.4.2.8.

Comments “A” through “D” corresponding to Figure 7.4.2.8. are as follows:

- **Comment “A”:** Typical construction in this area is concrete pan joists spaced at 26” on center, spanning east-west. As many of these joists as needed for this stair can be cut out. Based on the size shown in Figure 8 it appears that only 2 or 3 pan joists would need to be removed. For simplicity, it is recommended to remove the entire pan joist spanning between the beams discussed in Comments “B” and “C”. A guardrail or other physical barrier around the resulting opening would need to be installed, which may require reconfiguration of Floor 2 spaces beyond what is shown on the plans dated 3/5/13 provided for reference.

- **Comment “B”:** The reinforced concrete (R/C) beam along Grid B is 50” wide by 15” deep and should remain undisturbed. Quorum has indicated that there should be adequate headroom for someone heading up to the 2nd floor from the intermediate landing.

- **Comment “C”:** The R/C beam on the edge of the 1963 building is 20” wide x 24” deep. The west edge of this beam aligns with the west edge of the columns below, as shown in the sketch. This beam should be left as-is.

![Figure 7.4.2.7. Load Diagram for Corridor at Middle of Span](image)

**Figure 7.4.2.7. Load Diagram for Corridor at Middle of Span**
• Comment “D”: The shaded area is the upper stair landing. After removing existing pan joists per Comment “A”, new steel beams running north-south can be added to create the landing without necessarily adding new columns below. At this time it is unclear how the multipurpose room below the proposed stair would be adjusted to accommodate the stair. The concepts shown in Figures 7.4.2.9. and 7.4.2.10. could potentially be used to help frame the stair landing and preserve the multi-purpose room below as a column-free space. Either concept would require further development, including coordination with the architectural detailing of the stairs and associated landing area above.

![Figure 7.4.2.9.](image)

**Figure 7.4.2.9.** New beam for stair landing, mounted below existing slab level (with decking and slab, stair landing elevation is flush with existing slab level)

![Figure 7.4.2.10.](image)

**Figure 7.4.2.10.** New beam for stair landing, mounted above existing slab level (installation simpler than Figure 7.16 but results in stair landing above existing slab level)
7.4.3. Mechanical Systems

PLUMBING SYSTEM DESCRIPTION

Interior sanitary drainage systems will include:
- Waste and vent piping system are existing and will be modified as needed for the renovations of new rooms. Above ground waste and vent piping to be cast iron no hub w/ heavy duty couplings and hard type M copper piping.

Interior storm & clearwater drainage systems will include:
- Storm & Clearwater drain, waste, and vent system is existing, any connections required by the remodel will connect to this system. Above ground piping to be cast iron no hub with/ heavy duty couplings and hard type M hard copper pipe. All horizontal above ground piping will be insulated.

Interior water systems will include:
- Potable water riser system that is existing, supplied from the City of Milwaukee Water Utility. Cold, hot and circulated water will be supplied to all water closets, urinals, lavatories, sinks, mop basins, electric water coolers, and HVAC equipment if required. Piping will be insulated, hard type L copper. Hot water is supplied from the units in Mechanical Room G399.

Plumbing Specialties to include:
- Floor drains will be installed in all mechanical equipment rooms, in all toilet rooms larger than two fixtures, and in all Janitors’ Closets.
- Hub drains will be installed at all HVAC equipment with condensate discharge.
- Drinking fountains with bottle water fill to be provided as required by code, with a minimum of one ADA compliant high/low height unit per floor.
- Mop basins will be located in janitor closets to facilitate area clean up.
- Carriers will be supplied for all wall-hung fixtures.

Fixtures:
- Commercial grade wall hung, low flow, plumbing fixtures will be provided in public areas for ease of cleanup. Low flow wall hung water closets will be 1.28 GPF. Lavatory aerators will be 0.5 GPM. Sink aerators will be 1 GPM. Urinal flush valves will be 0.125 GPF.
- Medical exam type sinks with 1GPM aerators in the exam rooms

Emergency Shower/Eyewash Stations:
- Verify specific requirements with the facility’s Environmental Health & Safety group.
- Locate combination drench-hose/eyewash units with backflow preventer at each major sink in the Laboratory,

Pharmacy and Soiled Utility:
- Eyewash to be double spray-headed, hands-free operation

Laboratory Drug-Test Toilet Rooms:
- Shut-off capabilities to toilets and sinks for drug testing to be electronic solenoids with controls accessible in labs.
- Toilet shutoffs to be chrome plated brass fittings; no plastic shut-off devices.

FIRE PROTECTION SYSTEM DESCRIPTION
- The existing system will be modified as needed for new room layouts.
- Concealed sprinkler heads will be used in acoustical and gypsum board ceilings.
- Wet sprinkler system engineered in accordance with NFPA 13.
HVAC SYSTEM DESCRIPTION

Special Requirements

- Comply with requirements of ASHRAE 170 for all space design temperatures, relative humidity, and ventilation rates.
- Provide ducted returns for lab spaces, patient care spaces, and procedure rooms.
- Design all duct systems to avoid sound transfer from room to room.
- Design one exam room for negative pressure airborne infection isolation including 12 air changes per hour of continual exhaust. Include room pressure monitor with local alarm.
- Procedure rooms to include the following features:
  - Series fan power VAV boxes for zone temperature control with MERV 14 final filters in the discharge ductwork.
  - Low return grilles.
  - Local humidification system using electric steam generators with duct mounted steam distributor.
- 24/7/365 continuous cooling and ventilation for the pharmacy.
- For the lab on Floor 2, provide a six-foot fume hood and connect it to the building lab fume exhaust system. Provide a constant volume venturi lab exhaust air valve in the branch exhaust ductwork.

Major Infrastructure Upgrade of NWQ-B

- All of the existing mechanical systems serving the NWQ-B will be replaced under a separate infrastructure project. For Student Health Services areas located in NWQ-B, extend new HVAC work to the following upgraded systems:
  - Supply and return air ductwork
  - General exhaust ductwork
  - Lab fume exhaust ductwork
  - Hot water heating supply and return piping
  - DDC temperature controls

Floor 2 of NWQ-C

- Serve spaces in NWQ-C from the following existing air handling system:
  - Air Handling Unit S54 (NWQ-C):
    - Description: Variable air volume reheat air handling system, serving portions of the ground floor, first floor and second floor. AHU S54 is located in Floor 2 equipment room and was installed in 1993 with a 60,000 CFM capacity. The unit controls were upgraded as part of the Children’s Learning Center Renovation project (DFD #11C2L).
    - Scope of Work: Disconnect, remove and cap all existing air distribution ductwork, air terminals, piping and controls presently supplying spaces located within the construction limits. AHU S54 to remain in full operation serving spaces outside the construction limits. Provide VAV reheat air terminals for all areas complete with associated ductwork, piping, and controls. Provide hot water fin radiation with two-way valves for all spaces with exterior walls. Use the spaces above suspended ceilings as a return air plenum. Extend general exhaust to toilet rooms from existing exhaust systems.

Main Air Distribution Systems:

- Air distribution systems include the following:
  - New sheet metal ductwork.
  - Corrosion resistant fume exhaust ductwork.
  - Ceiling plenum returns except where duct returns are indicated under Special Requirements.

Air Terminals

- Provide all spaces with variable air volume reheat air terminals, associated ductwork, hot water piping, modulating two-way control valves with electric actuators, room temperature sensors and DDC controls. One room per zone.
Heating Terminals
- For all rooms with exterior walls, provide perimeter hot water fin radiation with two way modulating electric control valves for zone temperature control.

Telecom Room Cooling
- Provide a ductless split cooling system for the new Telecom Room.

Temperature Control System:
- The existing NWQ is served from a combination of pneumatic and direct digital control (DDC) system. All existing pneumatic controls and actuators within the project limits shall be upgraded to new digital controls. The new temperature control system for this part of the building will be an open-protocol (BACnet) direct digital control (DDC) type system, not JCI N2. All new equipment and systems will be equipped with compatible devices and fully integrated into the existing campus JCI building automation system (BAS). Provide new DDC controls for all HVAC upgrades.

Emergency Power for HVAC Equipment:
- Serve the following HVAC equipment from the emergency power system:
  - Temperature control system
  - Lab fume exhaust fans provided under the infrastructure project
  - Telecom Room cooling system

7.4.4. **Electrical Systems**

**MAJOR INFRASTRUCTURE UPGRADE OF NWQ-B**
- All of the existing electrical systems serving the NWQ-B shall be replaced under a separate infrastructure project. The Student Health Services area of work is a Services shell space with existing telecommunication and electrical rooms.

**LOAD CALCULATION CRITERIA**
- Maximum Design Connected Watts Per Square Foot
  - Office:
    - Lighting - 0.9
    - Receptacle - 4.0
  - Break Room/Dining Area:
    - Lighting - 1.1
    - Receptacle - 3.0
  - Exam/Treatment/Procedure:
    - Lighting - 1.2
    - Receptacle - 4.0
  - Pharmacy:
    - Lighting - 1.0
    - Receptacle - 2.0
  - Active Storage:
    - Lighting - 0.7
    - Receptacle - 0.5
  - Conference/Meeting:
    - Lighting - 1.0
    - Power - 4.0
  - Toilet:
    - Lighting - 0.8
    - Receptacle - 0.5
- Laboratory:
  - Lighting - 1.1
  - Receptacle - 10.0
- Reception Area / Waiting
  - Lighting - 1.0
  - Receptacle - 1.0
- Nurse Station:
  - Lighting - 0.8
  - Receptacle - 4.0
- Utility Spaces:
  - Lighting - 1.5
  - Receptacle - 0.5
- Corridor / Stair:
  - Lighting - 0.8
  - Receptacle - 0.5
- Egress Lighting
  - Lighting - 0.2
- Mechanical Areas:
  - Lighting - 1.2
  - Power - Actual Motor Full Load Amps

**EQUIPMENT SIZING CRITERIA:**

- **Secondary Design Voltages**
  - Motors 1/2 hp and larger: 480V, 3 phase, 3 wire
  - General Lighting: 277V, 1 phase, 2 wire
  - Receptacles, Motors less than 1/2 hp and Specialty Lighting: 120V, 1 phase, 2 wire

- **Equipment Sizing Criteria**
  - **Branch Circuit Load Calculations**
    - Lighting: Actual Installed VA
    - General Purpose Receptacles: 180 VA per outlet
    - Multiple Outlet Assemblies: 180 VA per 2'-0"
    - Special Outlets: Actual Installed VA of Equipment Served
    - Motors: 100% of Motor Full Load Amps
  - **Demand Factors**
    - Lighting: 100% of Installed VA
    - Receptacles: 100% of First 10 kVA Installed plus 50% of Balance
    - Motors: 100% of Total Motor Full Load Amps
    - Dedicated Receptacles: 100% of Total VA and Fixed Equipment Installed
  - **Minimum Bus Sizes**
    - 480Y/277V Equipment /Lighting Panels: -225A
    - 208Y/120V Equipment/Panels: -225A
    - 208Y/120V General Receptacle Panels: -225A

**DISTRIBUTION EQUIPMENT NOMENCLATURE:**

- Provide new nameplates for all existing Low Voltage distribution equipment including all distribution circuit breakers which receive nameplates. Provide information per DFD standards and utilize new NWQ room numbers.
- Provide temporary printed labels for all existing equipment indicating old Columbia Hospital designations to help UWM personnel identify equipment as the system is upgraded and replaced.
Nomenclature shall be Floor, Building / Branch of Power, Voltage, Sequence. An example of panel nameplates are as follows:

- **GC/NlA** – Branch Panelboard, Ground, NWQ-C, Normal Power, 208Y/120V, 3P, 4W, First Panel. A subsequent panel would be GC/NLB.
- **9B/QHB** – Branch Panelboard, Ninth Floor, NWQ-B, Equipment Power, 480Y/277V, 3P, 4W, Second Panel. There would be a panel 9B/QHA on the floor already.
- **DP/BANHA** – Distribution Panelboard, Basement, NWQ-A, Normal Power, 480Y/277V, 3P, 4W, First Panel. A subsequent distribution panel would be DP/BANHB.
- **MSB/GDNlA** – Main Switchboard, Ground, NWQ-D, Normal Power, 208Y/120V, 3P, 4W, First Switchboard. A subsequent switchboard would be MSB/GDNLB.
- **T/GCNlA** – Transformer serving GC/NlA.

Nomenclature definitions are as follows:

- **Floor Designations:**
  - Basement – B
  - Ground – G
  - First Floor – 1
  - Second Floor – 2
  - Third Floor – 3
  - Fourth Floor – 4
  - Fifth Floor – 5
  - Sixth Floor – 6
  - Seventh Floor – 7
  - Eighth Floor – 8
  - Ninth Floor – 9
  - Penthouse – P

- **Building Designations**
  - NWQ-A – A
  - NWQ-B – B
  - NWQ-C – C
  - NWQ-D – D
  - NWQ-E – E
  - NWQ-F – F
  - NWQ-G – G

- **Branches of Power:**
  - Normal – N
  - Emergency, Generator – G
  - Emergency, Article 700 – E
  - Emergency, Article 701/702 – Q

- **Voltages:**
  - 480V, 3 Phase, 3 Wire – H
  - 480Y/277V, 3 Phase, 4 Wire – H
  - 208Y/120V, 3 Phase, 4 Wire – L

- **Sequence:**
  - A, B, C, D, etc. as required to provide unique identifier.

**NORMAL POWER SERVICE AND DISTRIBUTION:**

**System Description**

- **NWQ-B**
  - An infrastructure project will be replacing all the vintage Columbia Hospital equipment in the NWQ-B on the floor with a new Electrical Room.
  - Utilize existing branch panelboards located in the existing electrical room.
  - Utilize existing circuit breakers or provide new as required.
  - Provide new panelboards as required, feed from existing bus duct located in core electrical room.

- **NWQ-C**
  - Either provide new panelboards or reuse / refurbish existing 1993 vintage distribution.
• Equipment and Material
  ○ Power distribution panelboards shall be deadfront construction utilizing thermal magnetic circuit breakers and copper bus bars. All panels shall be fully rated for the available short circuit current. All trims shall be door in door type. All panels shall be provided with copper ground busses. The capacity of the panels shall be sufficient for an additional 25% future connected load. Feeder circuit breaker space shall be provided for the addition of 25% future circuit breakers.
  ○ Branch circuit and lighting panelboards shall be deadfront construction utilizing thermal magnetic circuit breakers and copper bus bars. All panels shall be fully rated for the available short circuit current. All trims shall be door in door type. The panelboard connected load shall be limited to provide an additional 25% future connected load. The panelboards shall contain 25% spare 20A branch circuit breakers, and space for the addition of 25% future circuit breakers.
  ○ Point-of-use power connection devices shall include power receptacles, furniture connections, and other equipment connections as required.
• Distribution
  ○ Raceway for feeders and branch circuits less than 600V shall be metallic, electrical metallic tubing (EMT) subject to the restrictions of the National Electrical Code, minimum size 3/4". EMT shall not be used in concrete construction or where subjected to mechanical damage.
  ○ 600-volt feeders shall be single conductor, aluminum or copper 600-volt rated with XHHW, XHHW2, or THHW insulation, feeders shall be color coded using color type at all connections and in all pull and junction boxes.
  ○ Aluminum feeder conductors shall be allowed per DFD Guidelines. Only where compression termination can be used. No mechanical lugs shall be accepted. All distribution equipment enclosures shall be sized to accommodate these compression lugs. If compression lugs cannot be used, then copper conductors are only allowed.
  ○ All feeders shall be installed in conduit.
  ○ Branch circuit conductors shall be single conductor copper 600-volt rated with THWN or THHN insulation with continuous color-coding. Branch circuits shall utilize dedicated neutrals.

EMERGENCY SERVICE AND DISTRIBUTION:
• System Description
  ○ Utilize existing branch panelboards located in the existing electrical room.
  ○ Utilize existing circuit breakers or provide new as required.
  ○ Provide new Article 701/702 panelboards as required, feed from Basement distribution panel.
• Emergency branch loads include emergency egress lighting, exit signs, the fire alarm system, and the sprinkler bell.
• Equipment branch loads include refrigerators, freezers and general receptacles as required per program.
• Equipment and Material
  ○ See normal power system description for additional information on equipment construction.
• Distribution
  ○ The entire emergency power distribution system shall consist of conduit and wire. See normal power system description for additional information.
  ○ Feeders and branch circuit wiring to emergency loads shall be in a dedicated raceway for each branch of the emergency system.

GROUNDING SYSTEM:
• System Description
  ○ A complete equipment grounding system shall be provided such that all metallic structures, enclosures, raceways, junction boxes, outlet boxes, cabinets, machine frames, and all other conductive items operate continuously at
ground potential and provide a low impedance path to ground for possible fault currents. All grounding system connections shall be made using exothermic welds.

- Bonding jumpers shall be provided as required across pipe connections to water meters, dielectric couplings in a metallic cold water system, and across expansion/deflection couplings in conduit and piping systems.
- A separate insulated green grounding conductor shall be provided for each single and 3 phase feeder and branch circuit. Grounding conductor shall be run with the related phase and neutral conductors. Panel feeders installed in more than (1) raceway shall have individual, full sized, green grounding conductor in each raceway. The equipment grounding system shall not rely on the metallic raceways for grounding continuity.

**Equipment and Material**

- Wall-mounted copper ground bus shall be located in the main electrical room, floor electrical rooms, and voice/data rooms. The main electrical room ground bus shall be connected to the grounding system.

**Distribution**

- A separate, insulated #4/0 AWG ground wire shall be provided from the main electrical room ground bus to each floor’s electrical room ground bus.
- The main service entrance neutral shall be bonded to the system ground bar within the switchboard by a removable bus bar link.
- A code-sized, unbroken bond leader shall connect the electrical room ground bar to the XO terminal of local transformers.
- A bare copper, grounding electrode conductor shall be extended to all voice/data room ground.

**LIGHTING SYSTEMS:**

- All new lighting shall be hung from the building structure independently of ceiling support system. All lighting fixtures shall be complete with T8, T5, or T5HO lamps, electronic ballasts, hangers, lenses, etc. 8’0” fluorescent lamps shall not be allowed.

  - Lighting shall be fluorescent or LED. Incandescent lighting shall not be used.

  - The style of light fixtures shall be as follows:
    - Fixtures in classrooms shall be high efficiency direct/indirect linear pendant mounted luminaires (example: Focal Point Verve).
    - High efficiency volumetric type recessed troffers shall be utilized in private offices and conference rooms (example: Focal Point Equation).
    - Fixtures in corridors shall be 2’x2’ high efficiency volumetric type recessed troffers (example: Focal Point Equation).
    - Fixtures in the lobby and other special areas shall consist of LED downlights and LED accent lighting.
    - Fixtures in utility spaces shall be lensed type recessed fluorescent fixtures where a ceiling is present and industrial type suspended fluorescent fixtures with wire guards where a ceiling is not present.

  - All lighting levels shall conform to the Illuminating Engineering Society’s recommendations and in general, shall be as follows in footcandles (FC). Actual ambient levels may be adjusted due to power density considerations and supplemented with task lighting. This shall be determined as the project progresses and surface finishes are selected.
    - Office: 30 to 40 FC
    - Conference room: 30 to 40 FC
    - Laboratory at desk height: 30 to 50 FC
    - Laboratory at bench height: 50 to 65 FC
    - Classroom at desk height: 30 to 50 FC
    - Support areas (toilet, corridor, stair, storage, mechanical/electrical room): 15 to 20 FC
    - Lobby / Foyer: 15 to 20 FC
• Provide interior emergency egress lighting levels to meet IBC requirements. All interior egress lighting shall be controlled and shut off with other lighting in the respective zone when unoccupied utilizing UL 924 emergency power control devices with automatic diagnostics (for example, LVS EPC-A-1). Locate devices adjacent to respective panelboards.

• Provide exterior emergency egress lighting levels to meet IBC requirements. All exterior lighting shall be controlled via low voltage relay and shall shut off during daylight hours utilizing UL 924 emergency power control devices with automatic diagnostics or relay panel transfer capabilities. Locate UL 924 devices adjacent to respective panelboards.

• Controls shall be provided as follows:
  ○ All areas shall be provided with ceiling-mounted occupancy sensors to automatically control lighting. Sensors shall be provided as follows:
    - Janitor’s closets, small storage rooms, single-occupant toilet rooms: Wall-mounted infrared.
    - Multi-occupant toilet rooms: Ceiling-mounted dual technology infrared / microphonic.
    - Large storage rooms: Ceiling-mounted infrared.
    - Individual offices, conference rooms, classrooms, corridors, lobbies: Ceiling-mounted dual technology infrared / ultrasonic or microphonic.
    - All ceiling mounted occupancy sensors shall be provide with power packs capable of interfacing with the HVAC for system setback.
    - All rooms with occupancy sensors shall have manual override to positively shutoff light fixtures as needed.
  ○ Local dual-level switching shall be provided in classrooms, offices and conference room areas to allow occupant selection of lighting level.
  ○ Mechanical and electrical rooms shall controlled via line voltage switches for safety.
  ○ Exterior lighting (if applicable) shall be controlled by a microprocessor-based lighting control panel consisting of line-voltage relays controlled through the microprocessor based on remote low-voltage switch station, photocell and astronomical time clock input.

VOICE/DATA SYSTEM:
• Provide horizontal voice and data wiring, racks and terminations per DFD and UWM requirements.
• Provide horizontal data wiring to wireless access points per UWM spacing requirements.
• All horizontal cable shall be terminated in respective existing Telecommunications Room serving the area of renovation. Provide patch panels and cross connects within existing racks.
• Existing Telecommunications Room Risers
  ○ A Telecommunications Room riser in NWQ-A will be created in an Infrastructure Project, the intent is for it be completed prior to the build-out of NWQ-A.
  ○ UWM has created a Telecommunications Room riser in NWQ-B.
  ○ Project 12B1R has created Telecommunications Room risers in NWQ-C and NWQ-D.
  ○ NWQ-E shall be served by NWQ-B.
  ○ A telecommunications room in NWQ-F was created by UWM
  ○ NWQ-G shall be served by NWQ-D.
  ○ The respective floors shall be served from the following rooms as follows:
    - NWQ-A, 2nd Floor IDF - NWQ-A, Floors G, 1, 2
    - NWQ-A, 4th Floor IDF – NWQ-A, Floors 3, 4, 5
    - NWQ-B, Ground Floor IDF #G530 – NWQ-B, Floors B, G, 1, NWQ-E
    - NWQ-B, 3rd Floor IDF #3522 – NWQ-B, Floors 2, 3, 4
    - NWQ-B, 6th Floor IDF #6415 – NWQ-B, Floors 5, 6, 7
- NWQ-C, Ground Floor IDF #G614 – NWQ-C, Floors B, G, 1
- NWQ-C, 2nd Floor IDF #2645A – NWQ-C, Floors 2, 3, 4
- NWQ-D, Basement IDF #B890 – NWQ-D, Floors B, G, NWQ-G
- NWQ-D, 2nd Floor IDF #2999 – NWQ-D, Floors 1, 2
- NWQ-D, 4th Floor IDF #4939 – NWQ-D, Floors 3, 4, 5
- NWQ-D, 7th Floor IDF #7950 – NWQ-D, Floors 6, 7, 8, 9
- NWQ-F, Basement IDF – NWQ-E, All Floors

**Raceways shall be provided for a complete system within the area of renovation.**

- Minimum raceway size shall be 1" conduit with end bushings and metallic grounding clamps to terminate conduit to accessible ceiling spaces.
- Provide flexible cable tray along main corridors for distribution of horizontal cabling. Flexible tray shall be a minimum of 12"x 4". Coordinate exact sizing with UITS.
- A flush, two-gang box with plaster ring shall be provided at each voice/data outlet location where located in walls. Wall plates shall be provided.
- Slab-on-grade floor outlets shall be flush on slab style with carpet flange on floors scheduled for carpeting.
- Coordinate voice/data outlet requirements for specialty systems such as medical equipment, headwalls, exam rooms, etc.

**DISTRIBUTED ANTENNA SYSTEM (DAS):**

- A DAS system unique to this project is not desired. Implementation of a large scale DAS system in the NWQ is being considered by UWM. This project shall discuss the need for DAS antenna system distribution within this area of work. Consideration should be given to Milwaukee Fire Department wireless coverage (discussed further below), UWM's needs as well as cellular phone coverage.

**FIRE ALARM SYSTEM:**

- **System Description**
  - Project 12B1R replaced the existing JCI 2020 system with a new JCI 3030 system. Most existing devices remained and need to be replaced within the respective area of work.
  - Project 12B1R created a Fire Command Center in NWQ-B, Room 1470. This room shall be equipped as a true Fire Command Center as the renovations progress. Coordinate system requirements with all other trades.
  - An infrastructure project is planned to remove the Existing Smoke Control System (ESCS) which is located in NWQ-A, B and C, an ADT sprinkler monitoring system located in NWQ-A, B and C, and add full sprinklering to NWQ-A, B, C and D. This project will also add fire alarm infrastructure for NWQ-A and NWQ-B. In the absence of this project, each renovation will be required to fix the ECSC or provide other means to comply with code. Coordinate exact design requirements with design team, specifically Architectural, Mechanical and Fire Protection.
  - The existing JCI 3030, two -way voice communication addressable fire alarm system shall be expanded to serve the project area.
  - All devices in project shall be new and compatible with JCI 3030 system.
  - Provide new transponder panel in existing Telecommunications Room serving the area as required for project in NWQ-A and NWQ-B.
  - Provide new amplifiers and NAC panels as required under this renovation to serve all new audio/visual devices.
  - The installation of new devices shall comply with DFD standards as well as all applicable codes listed above.
  - System shall be integrated into UW Milwaukee Campus Mass Notification system.
- **Design Criteria**
  - The fire alarm system shall comply with requirements of NFPA 72, Life Safety Codes and State Building Code.
○ Audio/visual devices shall be installed in all areas of the building in accordance with the NFPA and ADA guidelines. All areas of the building shall be covered by audible device coverage as required by NFPA 72 and the International Building Code as adopted in Wisconsin. Visual devices shall be installed in those public and common areas as recognized by ADA such as corridors, bathrooms, classroom, laboratories, conference rooms, waiting rooms, break areas, and lobbies. Visual devices shall also be provided in mechanical areas as a supplement to the audible devices.

○ Smoke detectors shall be installed as required by the National Fire Protection Association and the International Building Code. Smoke detectors shall be installed in, but not limited to, the following locations: air handling units, elevator shafts, elevator lobbies, elevator machine rooms, and electrical equipment rooms.

○ Heat detectors shall be installed in areas that are not suitable for smoke detectors.

○ Dual-action manual pull stations shall be installed adjacent to all exit doors, each elevator lobby, and at floor exit stairwells. Pull stations shall have covers.

○ Fire fighter phones shall be installed in each elevator lobby.

○ Fire fighter phones are not required in the stairwells per the Milwaukee Fire Department (MFD) as the MFD utilizes wireless communications. However, the coverage of the system within the scope of work should be tested. The previously mentioned DAS system would alleviate coverage gaps, but it may not be installed at the time of this project. Coordinate this item with the MFD.

• Equipment and Material
  ○ Remote transponder panels shall be used to provide supervised amplifiers and signal circuits for audio/visual devices and magnetic door holders.
  ○ The system shall utilize individual addressable, photoelectric smoke detectors, heat detectors, addressable manual pull stations, and addressable monitor and control modules. The system shall monitor all sprinkler supervisory and water flow switches and shall interface with elevators, HVAC smoke control, and smoke fire dampers.

• Distribution
  ○ All initiating and signaling devices shall operate at 24VDC and shall be installed in accordance with manufacturer’s specifications.
  ○ All wiring shall be installed in conduit per DFD Standards.

SECURITY SYSTEM:

• System Description
  ○ Project 12B1R installed the basic Andover infrastructure for the NW Quad. This project shall expand the system to serve the areas of renovation.
  ○ Wiring, head end equipment and rough-in shall for a security system shall be provided that shall consist of the following items:
    - CCTV (Closed Circuit Television)
    - Card Readers
    - Door Contacts
    - Passive Infrared Motion Detectors
    - Digital Keypad/Annunciators
    - Glass Break Sensors at perimeter windows, Pharmacy
    - Panic button in each exam room and office to alert UWM Police
    - Control/Communicator
    - Auxiliary Power Supplies
    - Wiring
  ○ System shall be compatible with existing Andover system.

• Design Criteria
  ○ Exact configuration of security systems to be determined by UWM and UWM Police requirements. The electrical drawings shall reference the security drawings or reproduce device locations. Exact method to be determined.
**NURSE CALL SYSTEM:**

- **System Description**
  - Provide a Nurse Call system to serve the Student Health Services area of work only.
  - The Nurse Call system shall be a complete modular-constructed, solid-state unit consisting of a central control master station, patient stations, emergency stations, corridor lights, zone lights, staff stations, duty stations, a centralized control assembly with a minimum 24V DC power supply, and system cabling.
  - Central logic, power supplies, and other control equipment required to serve each area shall be located within the telecom rooms serving the area. The equipment installed in each telecom room shall only serve the area in which it is located.

- **Design Criteria**
  - Audible and visible annunciation of all calls (available at the centralized nurse station and the duty stations).
  - Visible annunciation at the corridor lights and zone lights.
  - Equipped to interface with interpersonal communication system (Similar to Vocera or Spectralink). Include VoIP Interface/Gateway.
  - Ability to communicate with all areas of the clinic.
  - Ability to communicate via pocket pager.

- **Equipment and Material**
  - Control panel: Equivalent to Jeron 640.
  - Initiation and annunciation devices shall be manufactured by the same company as the nurse call control panel and be UL listed for use with the control panel.
  - The low voltage portion of this system may be installed in a partial raceway system, utilizing flexible cable tray for horizontal distribution.

**Wireless Communication System:**

- **System Description**
  - Provide a wireless phone system to allow mobile voice communication between centralized nurse station and the duty stations.
  - System shall be interfaced with the Nurse Call system via VoIP Interface / Gateway

- **Equipment and Material**
  - Provide all materials and licensing required for an operational wireless phone system. Materials include server, base / repeater stations, phones, charging stations, etc.
  - System shall be equal to Spectralink KIRK 7010.

**Clock System:**

- The NWQ is served by a Primex XR Series Transmitter located in NWQ-B. Provide a clock compatible with system in each room as required by User.

**Audio/Visual System:**

- Power and empty raceway shall be provided as required by the audio/visual consultant. The electrical drawings shall reference the audio/visual drawings for coordination purposes.
Design Criteria and Facility Metrics to Ensure Project Success

8.1. Summarized Decisions (Design Principles and Objectives)
8.2. Special Design Requirements/Parameters
8.3. Applicable Codes, Regulations, & Design Guidelines
  8.3.1. Zoning
  8.3.2. Wisconsin Environmental Policy Act (WEPA) / Environmental Criteria
  8.3.3. Applicable Codes and Regulations
  8.3.4. DFD Design Standards
  8.3.5. UW System Facilities Planning Guidelines
  8.3.6. UWM - Northwest Quadrant Design Guidelines
  8.3.7. Universal Design
  8.3.8. Historical Analysis
8.4. DFD Sustainability Standards Checklist
8.1. Summarized Decisions (Design Principles and Objectives)

Objectives of the new space were restated throughout the planning process by staff and personnel. These goals were implemented in the programming of the Student Health Services project and reflected in the space program. The following are the objectives:

- The center encourages collaboration
- Allows patient-focused care in all areas
- Enhances the patient and staff experience
- Positively impacts the UWM community
- Warm and inviting
- Efficient yet comfortable
- Provides openness, balanced with privacy
- Flexible / Adaptable for new programs

8.2. Special Design Requirements/Parameters

NWQ-B is a seven-story brick clad concrete frame structure in the heart of the former hospital building. It is bound by the historic “A” building to the east, which is proposed in the Northwest Quad Redevelopment Plan to be adaptively re-used as the UWM School of Education, and the “C” and “D” Buildings to the west, a majority of which will be adaptively re-used as the College of Health Science. Floor 1 of the “B” Building is proposed to be largely restaurant operations funded student commons space, described in the Redevelopment Plan as the NWQ “Town Square”. The town square connects down to proposed ground floor teaching and learning classroom spaces.

It is off this vibrant Town Square that the Student Health Services entry is proposed. The wellness component of the SHS is largely open to, and becomes one with, the Town Square. Healthcare and mental health counseling are provided on Floor 2, accessed by elevators within the suite or through an open stair (add alternate to the base bid). A special design requirement would be the need for occasional, somewhat discrete, ambulance pick up for mental health or student health cases beyond the treatment capabilities of the Student Health Services. Such access is proposed off Hartford Avenue utilizing the earlier Columbia ambulance drop-off for emergency room access.

CURRENT USE

The NWQ-B was re-classified from Group I-2 to Group B (Business) to accommodate its use as Surge Space for offices and classrooms relocated from other campus facilities by on-going construction and alteration projects. This change was made in March of 2011 by Occupancy plans submitted to DSPS by HGA Architects. The design and construction architect/engineer of record is responsible for verifying the listed current occupancy use with DSPS and UWM.

A portion of NWQ-C and NWQ-D was converted to Use Group I-4 (Day Care) for the relocation of the UWM Children’s Center in the fall of 2013.

The balance of the main complex is vacant and is still under the I-2 classification until such time as it is altered or submitted for occupancy as-is. Proposed uses are additional temporary surge space and long-term classroom/lab/department office space. The University is currently discussing use of a portion of the NWQ-A and/or NWQ-D as surge space.

PROPOSED USE

The Student Health Services project is proposed to occupy portion of NWQ-B at Floor 1 and 2 and NWQ-C at Floor 2 by the Brown elevators. Student Health Services provides a variety of services to assist UWM student with their health issues including:
• Medical Clinic
• Counseling
• Health Promotion and Wellness
• Laboratory
• Pharmacy
• Sports Medicine
• Travel Information/Consultation

Refer to Appendix 11.1 for project-specific building evaluations and preliminary code notes and observations.

8.3. Applicable Codes, Regulations, & Design Guidelines

At a minimum, the following published codes and standards are applicable for this project:
• Comply with all federal, state and local laws and regulations governing materials, installation, health, safety, fire, HVAC and electrical requirements within the applicable jurisdiction.
• Comply with Standards of ADA, AGA, ASHRAE, ASME, NEMA, NEC, NFPA #17A, 54, 70, and 96, NSF, OSHA and UL.
• All principal items of equipment shall bear the NSF seal.
• Use UL Listed electrical components and include UL labels.

8.3.1. Zoning

The NWQ site is identified in Milwaukee city records as being located at 2015 E Newport Avenue, Milwaukee, Wisconsin 53211. The owner is listed as the UW System Board of Regents (address: 1220 Linden Drive, Madison, Wisconsin 53706 1525). It is located in Aldermanic District 3 – Nik Kovac, alderperson. It is not in a city designated historic district.

The property is currently zoned Institutional District (TL). The institutional district is established to accommodate largely institutional and institutional/residential uses, along with supporting uses that occupy multiple buildings, often in a campus-like setting.

Allowed uses in a TL district are schools (elementary & secondary), colleges, specialty instruction schools, libraries, cultural institutions, dormitories, religious facilities, public safety facilities, general and government offices, artist studios, medical research laboratories, medical offices, accessory use parking lots, among others.

Health clinics are listed as a special use in TL districts. Use of a portion of the NWQ as a health clinic will need to be submitted to the City of Milwaukee Board of Zoning Appeals for review and approval by the City of Milwaukee Common Council.

8.3.2. Wisconsin Environmental Policy Act (WEPA) / Environmental Criteria

To conform with WEPA, all state agency projects are to prepare environmental impact statements (EIS) with major activities that will significantly affect the human environment. UW System has developed a Project Type Action List to assist in determining the need for an EIS.

8.3.3. Applicable Codes and Regulations

In addition to State/DOA/DFD requirements, guidelines and standards, the below entities may be the Authority Having Jurisdiction (AHJ) over the project design and construction. All agencies and the facilities that are owned and operated by the State of Wisconsin are subject to following the currently adopted Wisconsin Administrative Code and model codes listed below:
STATE GOVERNMENT AGENCIES

• Department of Safety and Professional Services (DSPS - Plan Review & Permits)
• Division of Facilities Development (DFD)

INSTITUTION

• UW System Facilities Planning Guidelines
• Physical Environment Review Committee
• UWM Campus Design Standards
• UW-Milwaukee Facilities, Planning, and Management (UW-Milwaukee Construction Project Design Information)

NATIONAL ACCREDITATION, PHYSICAL ENVIRONMENT REQM'TS.

• Accreditation Association for Ambulatory Health Care, Inc. (AAAHC)

LOCAL GOVERNMENTAL AUTHORITIES

• Local Zoning Office: Zoning Ordinance - City of Milwaukee
• Local Fire Department or Fire Marshall
• City of Milwaukee Public Works Standard Specification
• Local Historic Preservation Commission
• City of Milwaukee Water & Sewer Departments
• Local Health Department – City of Milwaukee

BUILDING CODES AND STANDARDS

• Building Code: International Building Code (IBC) and International Existing Building Code (IEBC) as adopted by WI Administrative Code, Chapters SPS 360-366
• Safety and Health: NFPA Standards as adopted by WI Administrative Code, Chapters SPS 330 & 332.
• Elevator Code: WI Commercial Building Code, Chapter SPS 318.
• Mechanical Code: International Mechanical Code, as adopted by WI Administrative Code, Chapters SPS 364.
• Fuel & Gas Code: International Fuel & Gas Code, as adopted by WI Administrative Code, Chapters SPS 365.
• Plumbing Code: WI Commercial Building Code, Chapters SPS 381-384.
• ACGIH Industrial Ventilation – A manual of recommended practice.
• ANSI/AIHA Z9.5-2012 – Laboratory Ventilation Standard.
• NFPA 30 – Flammable and Combustible Liquids Code.
• NFPA 72 – National Fire Alarm and Signaling Code.
• NFPA 90A – Standard for the Installation of Air Conditioning.
• NFPA 90B – Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
• NFPA 99 – Standard for Health Care Facilities.
• NFPA 780 – Standard for Installation of Lightning Protection.
• ASHRAE Standard 62.1- Ventilation for Acceptable Indoor Air Quality
• ASHRAE Standard 90.1-Energy Standard for Buildings, Except Low-Rise Residential Buildings
• ASHRAE Standard 170 – Ventilation of Health Care Facilities.
• IEEE – Institute of Electrical and Electronics Engineers.
• IESNA – Illuminating Engineering Society of North America.
• NEC – National Electrical Code as adopted in Wisconsin
• NECA – National Electrical Contractors Association
• NEMA – National Electrical Manufacturers Association.
• UL – Underwriters Laboratories.
• IFC – International Fire Code
• TIA – Telecommunications Industry Association

PLAN REVIEW
The Department of Safety and Professional Services, Safety and Buildings Division is responsible for the administration of the Wisconsin Commercial Building code. Administration and applicability of the code is detailed under SPS 361. All commercial buildings must comply with all applicable administrative codes, whether or not plan review is specifically required. The code requires submission of building, HVAC and some fire protection plans. Authority for approval is as follows: For all commercial buildings, except nursing homes and hospitals, the Department of Safety and Professional Services, Division of Safety and Buildings is responsible for reviewing plans. Dave Wallace, P.E., DSPS Integrated Services Building Plan Reviewer in Madison (phone: 608-261-6540; david.wallace@wisconsin.com) has been reviewing all plans related to the NWQ site. It is highly suggested that a preliminary plan consultation be scheduled with DSPS when a schematic plan has been prepared to address code issues.

Note: The City of Milwaukee Fire Marshall also has jurisdiction for fire and life safety issues. While not a required plan review, it is highly suggested that a preliminary review be conducted with the Milwaukee Fire Marshal for gaining their conditional approval as that entity will be responsible for on-going on-site fire inspections.

8.3.4. DFD Design Standards

The State of Wisconsin Department of Administration’s Division of Facilities Development (DFD) administers all construction projects for the UW-Milwaukee campus. DFD maintains design standards for all State facilities.

The project must be designed and documented according to the most current DFD Policy and Procedure Manual for Architects/Engineers and Consultants.

• http://doa.wi.gov/divisions/facilities-development/ae-design

Also refer to DFD Master Specification Templates and Guidelines

• http://doa.wi.gov/divisions/facilities-development/document-library/master-specifications-design-guidelines

Commissioning shall be part of the design phases and construction phases. UWM and DFD shall determine the level of commissioning based on the size and complexity of the project.

8.3.5. UW System Facilities Planning Guidelines

The project must be designed and documented according to the most current UW System Facilities Planning guidelines.

http://www.uwsa.edu/capbud/facplan.htm
8.3.6. **UWM - Northwest Quadrant Design Guidelines**

The University of Wisconsin-Milwaukee maintains design standards and construction project design information specific to development in the Northwest Quadrant. Information is available from UWM Campus Planning.

8.3.7. **Universal Design**

Applicable Laws, regulations, and codes include:
- Department of Justice (DOJ) 28 CFR Parts 35 and 36
- Americans with Disabilities Act (ADA)
- Wisconsin Comm 62
- ADAAG (2004)
- DFD Accessibility Guidelines

The Agency is required to perform a self-evaluation and have a plan for achieving accessibility, remove architectural barriers and operate facilities so that they are accessible.

For renovation and alterations, up to 20% of the construction budget shall be used to achieve accessibility per applicable laws, regulations, codes, and guidelines with priority given to accessible route to the building and to primary function spaces within the building.

Refer to project-specific issues discussed in the preliminary plan review comments in Appendix 11.1.

8.3.8. **Historical Analysis**

The Northwest Quadrant are buildings originally owned by Columbia - St. Mary’s Hospital and the Columbia College of Nursing. Originally built in 1917, portions of NWQ-A and NWQ-F could be considered historic. The proposed location of Student Health Services is not in one of the historic areas.

8.4. **DFD Sustainability Standards Checklist**

Table 8.4.1. lists the DFD Checklist to be followed during the next phases of the UWM Student Health Services project:
Table 8.4.1. DFD Sustainability Standards Checklist (Provided by DFD and shown here for reference)

<table>
<thead>
<tr>
<th>Applicable?</th>
<th>Requirements</th>
<th>Primary Responsibility</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1. Portfolio Management &amp; Assessment of Need</td>
<td>** Portfolio Management &amp; Assessment of Need</td>
<td>A</td>
</tr>
<tr>
<td>Yes</td>
<td>2. Program Development</td>
<td>** Program Development</td>
<td>A</td>
</tr>
<tr>
<td>Yes</td>
<td>3. Integrated Design</td>
<td>** Integrated Design</td>
<td>D, DSF</td>
</tr>
<tr>
<td></td>
<td>4. Sustainable Site Requirements</td>
<td>** Integrated Design</td>
<td>D</td>
</tr>
<tr>
<td>SS W1/P1</td>
<td>* Construction Site Erosion &amp; Sedimentation Control</td>
<td>D/C</td>
<td></td>
</tr>
<tr>
<td>SS C1</td>
<td>Site Selection</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>SS C2</td>
<td>Development Density &amp; Community Connectivity</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>SS C3</td>
<td>Brownfield Redevelopment</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>SS C4.1</td>
<td>Alternative Transportation Public Transportation Access</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>SS C4.2</td>
<td>* Alternative Transportation Bicycle Storage &amp; Changing Rooms</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>SS C4.3</td>
<td>* Alternative Transportation Low Emitting &amp; Fuel Efficient Vehicles</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>SS C4.4</td>
<td>Alternative Transportation Parking Capacity</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>SS C5.1</td>
<td>Site Development, Protect or Restore Habitat</td>
<td>A/D</td>
<td></td>
</tr>
<tr>
<td>SS C5.2</td>
<td>Reduced Site Disturbance Development Footprint</td>
<td>A/D</td>
<td></td>
</tr>
<tr>
<td>SS C6.1</td>
<td>Permanent Stormwater Management (Discharge Rate &amp; Vol - DNR 151)</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>SS C6.2</td>
<td>* Permanent Stormwater Management (Quality Treatment - DNR 151)</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>SS C7.1</td>
<td>Heat Island Effect: Non-Roof</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>SS C7.2</td>
<td>LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS C8</td>
<td>Light Pollution Reduction</td>
<td>D</td>
<td></td>
</tr>
</tbody>
</table>
### 5. Water Efficiency Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>WE C1.1</td>
<td>Incorporated into WE C1.2</td>
<td></td>
</tr>
<tr>
<td>WE C1.2</td>
<td>Water Efficient Landscaping  No Potable Use or No Irrigation</td>
<td>D</td>
</tr>
<tr>
<td>WE C2</td>
<td>LEED Credit Not Used</td>
<td></td>
</tr>
<tr>
<td>WE C3.1</td>
<td>Water Use Reduction, 20% Reduction</td>
<td>D</td>
</tr>
<tr>
<td>WE C3.2</td>
<td>LEED Credit Not Used</td>
<td></td>
</tr>
</tbody>
</table>

### 6. Energy & Atmosphere Requirements

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>EA P1</td>
<td>* Commissioning</td>
<td>D, C Indicate DSF Level 1 or Level 2</td>
</tr>
<tr>
<td>EA P2</td>
<td>Minimum Energy Performance</td>
<td>D</td>
</tr>
<tr>
<td>EA P3</td>
<td>* CFC Reduction in HVAC&amp;R Equipment</td>
<td>D</td>
</tr>
<tr>
<td>EA C1</td>
<td>* Optimize Energy Performance for Projects &gt; $2 million</td>
<td>D</td>
</tr>
<tr>
<td>EA C2</td>
<td>* Renewable Energy</td>
<td>D</td>
</tr>
<tr>
<td>EA C3</td>
<td>Incorporated into EA P1</td>
<td></td>
</tr>
<tr>
<td>EA C4</td>
<td>LEED Credit Not Used</td>
<td></td>
</tr>
<tr>
<td>EA C5</td>
<td>* Measurement &amp; Verification</td>
<td>D, O</td>
</tr>
<tr>
<td>EA C6</td>
<td>Green Power</td>
<td>A, O</td>
</tr>
</tbody>
</table>

### DSF Requirement / LEED Credit Comparison

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Description</th>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as LEED 2.1 or 2.2 Credit</td>
<td></td>
<td>A Agency - Planning, Budget Analyst</td>
</tr>
<tr>
<td>* DSF variation of LEED 2.1 or 2.2 Credit</td>
<td></td>
<td>D Architect/Engineer</td>
</tr>
<tr>
<td>** DSF only Standard</td>
<td></td>
<td>C Contractor</td>
</tr>
<tr>
<td>LEED Credit Not Used, Incorporated into another Standard or not supported</td>
<td></td>
<td>O Agency - Operation &amp; Maintenance</td>
</tr>
</tbody>
</table>
## Table 8.4.1. DFD Sustainability Standards Checklist (Continued)

<table>
<thead>
<tr>
<th>Applicable?</th>
<th>Requirements</th>
<th>Primary Responsibility</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>7. Materials &amp; Resources Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR P1 Storage &amp; Collection of Recyclables</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C1.1 Building Reuse</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C1.2 Incorporated into MR C1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C1.3 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C2.1 Construction Waste Management</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C2.2 Incorporated into MR C2.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C3.1 Resource Reuse</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C3.2 Incorporated into MR C3.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C4.1 Recycled Content</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C4.2 Incorporated into MR C4.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C5.1 Local/Regional Materials</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C5.2 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C6 Rapidly Renewable Materials</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR C7 Certified Wood</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>MR W1 ** Durable Buildings</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>8. Indoor Environmental Quality Requirements</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>EQ P1 Minimum IAQ Performance</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ P2 * Environmental Tobacco Smoke (ETS) Control</td>
<td>O</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C1 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C2 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C3.1 Construction IAQ Management Plan During Construction</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C3.2 Construction IAQ Management Plan Before Occupancy</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C4.1 Low-Emitting Materials Adhesives &amp; Sealants</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C4.2 Low-Emitting Materials Paints</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C4.3 Low-Emitting Materials Carpet</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C4.4 Low-Emitting Materials Composite Wood</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C5 Indoor Chemical &amp; Pollutant Source Control</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C6.1 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C6.2 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C7.1 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C7.2 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C8.1 * Daylight &amp; Views</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td></td>
<td>EQ C8.2 LEED Credit Not Used</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### 9. Operation & Maintenance Requirements

| AR   | **Operation & Maintenance** | O |

### 10. Purchasing of Furniture, Fixtures and Equipment Requirements

| AR   | **Purchasing of Furniture, Fixtures and Equipment** | A |

### 11. Accountability, Verification, and Reporting Requirements

| AR   | **Accountability for Sustainability** | DSF |
| AR   | **Verification during Project Design** | DSF |
| AR   | **Verification during Project Construction** | DSF |
| AR   | **Verification following Construction** | DSF |
| AR   | **Reporting on Construction Results** | DSF |

### LEED Goals

| Yes | LEED EB (Agency Operations Equal to LEED Existing Building) | A |

### DSF Requirement / LEED Credit Comparison

<table>
<thead>
<tr>
<th>Primary Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Agency - Planning, Budget Analyst</td>
</tr>
<tr>
<td>D Architect/Engineer</td>
</tr>
<tr>
<td>DSF Division of State Facilities</td>
</tr>
<tr>
<td>C Contractor</td>
</tr>
<tr>
<td>O Agency - Operation &amp; Maintenance</td>
</tr>
</tbody>
</table>
## Budget

### Budget Section

#### 9.1. DFD Budget Worksheet

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASF: Construction Cost (building &amp; site)</td>
<td>$138</td>
</tr>
<tr>
<td>GSF: Construction Cost (building &amp; site)</td>
<td>$138</td>
</tr>
<tr>
<td>ASF: Total Project Cost</td>
<td>$190</td>
</tr>
<tr>
<td>GSF: Total Project Cost</td>
<td>$190</td>
</tr>
</tbody>
</table>

#### 9.2. NWQ Infrastructure Allocation

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>WSQ Student Health Services</td>
<td></td>
</tr>
<tr>
<td>University of Wisconsin Milwaukee Northwest Quadrant</td>
<td>$706</td>
</tr>
</tbody>
</table>

### Total Project Budget Estimate

$6,585,000
9.1. DFD Budget Worksheet

Table 9.1.1. summarizes the budget for redeveloping part of the NWQ to accommodate the programmatic needs and scope of work identified and discussed in this report. The ASF, Efficiency, GSF and Cost are based on the fit plans, which account for existing conditions and actual available space. Discrepancies between program square footages (shown in Table 6.2.1.) and fit plan square footages (as presented in the budget) reflect the approximate architectural realities of fitting the program into the existing building. The budget is based on 2013 costs. The final budget needs to be verified and escalated once this is determined. Further detail can be found in 11.3. Budget Detail.

### Table 9.1.1. Major Project Budget Summary

<table>
<thead>
<tr>
<th>THE UNIVERSITY OF WISCONSIN SYSTEM</th>
<th>MAJOR PROJECT BUDGET SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT TITLE: NWQ Student Health Services</td>
<td>Date Prepared: 05/07/14</td>
</tr>
<tr>
<td>LOCATION: University of Wisconsin Milwaukee Northwest Quadrant</td>
<td>Prepared By: XXX</td>
</tr>
<tr>
<td></td>
<td>Revised By: XXX</td>
</tr>
<tr>
<td>OPTION NO.: 0</td>
<td>TOT PROJ COST EST: 6585000</td>
</tr>
</tbody>
</table>

#### NEW BUILDING AREA

- **ASF New Const**: 0
- **GSF New Const**: 0, 0.00% Efficiency

- **Base Date**: 07/2014
- **Base Index**: 5697
- **Projected Bid Date**: 07/2014
- **Projected Bid Index**: 5697

#### REMODELING AREA

- **GSF Remodeling**: 34,587
- **GSF Total Bldg**: 34,587, 100.00% Remodeling

- **Est. Occp. Date**: 07/2016

| |  |
| $138 | /ASF: Construction Cost (building & site) |
| $138 | /GSF: Construction Cost (building & site) |
| $190 | /ASF: Total Project Cost |
| $190 | /GSF: Total Project Cost |
Table 9.1.1. Major Project Budget Summary (Continued)

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>NEW CONSTRUCTION</td>
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</tr>
<tr>
<td>REMODELING</td>
<td>4,168,000</td>
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<tr>
<td>DEMOLITION</td>
<td>0</td>
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<tr>
<td>HAZMAT ABATEMENT</td>
<td>41,700</td>
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<tr>
<td>SPECIAL CONSTRUCTION</td>
<td>130,000</td>
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<tr>
<td><strong>SUBTOTAL CONSTRUCTION COST</strong></td>
<td><strong>4,340,000</strong></td>
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<tr>
<td>DESIGN CONTINGENCY</td>
<td>10.0%</td>
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<tr>
<td><strong>SUBTOTAL UN-ESCALATED CONSTRUCTION COST</strong></td>
<td><strong>4,774,000</strong></td>
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<tr>
<td>ESCALATION FACTOR</td>
<td>1.00</td>
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<tr>
<td><strong>TOTAL CONSTRUCTION COST</strong></td>
<td>&gt;&gt;&gt;&gt; $ 4,774,000</td>
</tr>
<tr>
<td>A/E BASIC SERVICES</td>
<td>8.0%</td>
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<tr>
<td>A/E ADDITIONAL SERVICES</td>
<td>21,000</td>
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<tr>
<td>PROJECT CONTINGENCY</td>
<td>10.0%</td>
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<tr>
<td>DFD MANAGEMENT FEE</td>
<td>4.0%</td>
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<tr>
<td><strong>TOTAL FEES</strong></td>
<td>&gt;&gt;&gt;&gt; $ 1,105,000</td>
</tr>
<tr>
<td>SPECIAL &amp; MOVABLE EQUIPMENT</td>
<td>&gt;&gt;&gt;&gt; $ 706,000</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT BUDGET ESTIMATE</strong></td>
<td>&gt;&gt;&gt;&gt; $ 6,585,000</td>
</tr>
</tbody>
</table>
Table 9.1.1. Major Project Budget Worksheet - Page 1

<table>
<thead>
<tr>
<th>THE UNIVERSITY OF WISCONSIN SYSTEM</th>
<th>MAJOR PROJECT BUDGET WORKSHEET</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROJECT TITLE:  NWQ Student Health Services</td>
<td>Date Prepared : 05/07/14</td>
</tr>
<tr>
<td>LOCATION : University of Wisconsin Milwaukee Northwest Quadrant</td>
<td>Prepared By : XXX</td>
</tr>
<tr>
<td>OPTION NO. :</td>
<td>Revised By: XXX</td>
</tr>
<tr>
<td>TOT PROJ COST EST: $6,585,000</td>
<td></td>
</tr>
</tbody>
</table>

**NEW BUILDING AREA**

- **ASF New Const**
- **GSF New Const**

<table>
<thead>
<tr>
<th>Category</th>
<th>Base Date</th>
<th>Base Index</th>
<th>Projected Bid Date</th>
<th>Bid Date Index</th>
<th>Escalation Factor</th>
<th>Est. Occup. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>07/2014</td>
<td>5697</td>
<td>07/2014</td>
<td>5697</td>
<td>1.00</td>
<td>07/2016</td>
</tr>
</tbody>
</table>

**REMODELING AREA**

- **GSF Remodeling**
- **GSF Total Bldg**

<table>
<thead>
<tr>
<th>Category</th>
<th>Base Date</th>
<th>Base Index</th>
<th>Projected Bid Date</th>
<th>Bid Date Index</th>
<th>Escalation Factor</th>
<th>Est. Occup. Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>07/2014</td>
<td>5697</td>
<td>07/2014</td>
<td>5697</td>
<td>1.00</td>
<td>07/2016</td>
</tr>
</tbody>
</table>

- **0.00% Efficiency**
- **100.00% Remodeling**

- **Trade Categories**
  - **General**
    - **Surface Treatment**
    - **Minor**
    - **Partial**
    - **Complete**
  - **Plumbing**
    - **Minor**
    - **Partial**
    - **Special Laboratory Needs**
  - **Heat/Vent/Air Cond**
    - **Minor**
    - **Partial**
    - **Complete**
  - **Electric**
    - **Minor**
    - **Partial**
    - **Complete**

**Subtotal: $4,168,000**

**SUBTOTAL REMODELING COST**

**SUBTOTAL BUILDING / REMODELING COST** $4,168,000
### Table 9.1.1. Major Project Budget Worksheet - Page 1 (Continued)

#### NEW CONSTRUCTION BY SPACE TYPE

<table>
<thead>
<tr>
<th>Space Category</th>
<th>ASF</th>
<th>Eff</th>
<th>GSF</th>
<th>$/GSF</th>
<th>Category Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
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<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
<td>Subtotal: $ 0</td>
</tr>
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</table>

#### SUBTOTAL CONSTRUCTION COST

$ 0

#### REMODELING BY SPACE TYPE

<table>
<thead>
<tr>
<th>Space Category</th>
<th>ASF</th>
<th>Eff</th>
<th>GSF</th>
<th>$/GSF</th>
<th>Category Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Health Services</td>
<td>19,509</td>
<td>0.56</td>
<td>34,587</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Function</td>
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<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Function</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
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</tr>
<tr>
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<td>0</td>
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<td>0</td>
<td></td>
<td>Subtotal: $ 0</td>
</tr>
</tbody>
</table>

#### REMODELING BY TRADE

<table>
<thead>
<tr>
<th>Trade Category</th>
<th>GSF</th>
<th>$/GSF</th>
<th>Trade Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Surface Treatment</td>
<td>0</td>
<td>$0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Minor</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Partial</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Complete</td>
<td>34,587</td>
<td>$56.53</td>
<td>1,955,200</td>
</tr>
<tr>
<td>Plumbing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Minor</td>
<td>0</td>
<td>$0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Partial</td>
<td>0</td>
<td>0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Complete</td>
<td>34,587</td>
<td>$5.17</td>
<td>178,900</td>
</tr>
<tr>
<td>-Special Laboratory Needs</td>
<td>0</td>
<td>$0.00</td>
<td>0</td>
</tr>
<tr>
<td>Heat/Vent/Air Cond</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Minor</td>
<td>0</td>
<td>$0.00</td>
<td>0</td>
</tr>
<tr>
<td>-Partial</td>
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<td>0</td>
</tr>
<tr>
<td>-Complete</td>
<td>34,587</td>
<td>$20.75</td>
<td>717,700</td>
</tr>
<tr>
<td>Electric</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Minor</td>
<td>0</td>
<td>$0.00</td>
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<tr>
<td>-Partial</td>
<td>0</td>
<td>$0.00</td>
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</tr>
<tr>
<td>-Complete</td>
<td>34,587</td>
<td>$38.06</td>
<td>1,316,200</td>
</tr>
</tbody>
</table>

#### SUBTOTAL REMODELING COST

Subtotal: $ 4,168,000

#### SUBTOTAL BUILDING / REMODELING COST

$ 4,168,000
Table 9.1.1. Major Project Budget Worksheet - Page 2

<table>
<thead>
<tr>
<th>PROJECT TITLE: NWQ Student Health Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBTOTAL BUILDING / REMODELING COST (from page 1)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ADDITIONAL CONSTRUCTION / REMODELING COSTS:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demolition</td>
<td>0</td>
</tr>
<tr>
<td>- Building Demolition</td>
<td></td>
</tr>
<tr>
<td>- Selective Demolition</td>
<td></td>
</tr>
<tr>
<td>2. Hazardous Materials Remediation</td>
<td>41,700</td>
</tr>
<tr>
<td>- Asbestos Abatement</td>
<td>0</td>
</tr>
<tr>
<td>- 1% of Construction Cost</td>
<td>41,680</td>
</tr>
<tr>
<td>3. Additional Site Costs</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>4. Special Construction</td>
<td>130,000</td>
</tr>
<tr>
<td>- New Stair</td>
<td>105,000</td>
</tr>
<tr>
<td>- Dedicated Entry/Sitework</td>
<td>25,000</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
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<tr>
<td>- Specify</td>
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<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>5. Utility Extensions</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>6. Special Mechanical / Electrical Systems</td>
<td>0</td>
</tr>
<tr>
<td>- NWQ-B Infrastructure Work - Plumbing, HVAC, Electrical</td>
<td></td>
</tr>
<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>7. Fixed Furnishings and Equipment</td>
<td>0</td>
</tr>
<tr>
<td>- Equipment</td>
<td>0</td>
</tr>
<tr>
<td>- Furniture and Fixtures</td>
<td>0</td>
</tr>
</tbody>
</table>

| SUBTOTAL CONSTRUCTION/REMODELING COST | >>>>>> | >>>> $ 4,340,000 |
| DESIGN CONTINGENCY | 10.0% | 434,000 |

| SUBTOTAL UN-ESCALATED CONSTRUCTION COST | >>>>>> | >>>> $ 4,774,000 |
| ESCALATION FACTOR | 1.00 |

| TOTAL CONSTRUCTION COST | >>>>>> | >>>> $ 4,774,000 |
### Table 9.1.1. Major Project Budget Worksheet - Page 3

**PROJECT TITLE:** NWQ Student Health Services  
**TOTAL CONSTRUCTION COST (from Page 2)** $4,774,000

1. **Architect/Engineer Basic Services**  
   - Basic Services 8.0% 381,900  
   - Reimbursable costs 4.0% 15,300

2. **Additional Design Services**  
   - Pre-planning 0.0% 0  
   - LEED™ certification 0  
   - Systems Furniture design 6.0% 21,200  
   - Commissioning (specify level) 0  
   - EIS/EIA consultant 0  
   - Construction Testing 0  
   - Testing & Balancing 0  
   - Specify 0

3. **Project Contingency**  
   - 10.0% 4,774,000 477,400 477,000

4. **DFD Project Management**  
   - 4.0% 5,251,000 210,000 210,000

5. **Movable Equip. Allowance**  
   - 7.4% 4,774,000 353,300 353,000

6. **Special Equipment**  
   - Audio-Visual 0  
   - Equipment 0  
   - Systems Furniture 353,300  
   - Food Service 0  
   - Waste Management Equipment 0

**TOTAL PROJECT BUDGET ESTIMATE** $6,585,000

$138 /ASF: Construction Cost (building & site)  
$138 /GSF: Construction Cost (building & site)  
$190 /ASF: Total Project Cost  
$190 /GSF: Total Project Cost
9.2. **NWQ Infrastructure Allocation**

A selective infrastructure upgrade is planned for the NWQ and is distinct from the project scope indicated in this report. In order to analyze costs overall in the complex, the Redevelopment Plan proportionally allocates the cost of this separate infrastructure project to the users in NWQ-A through NWQ-D. Additionally, NWQ-A site work costs are extracted from the School of Education and General Assignment Classrooms discrete project budget and are proportionally allocated to NWQ-A-D users.

To calculate this, the overall building Non-Assignable Square Feet is calculated and proportionally allocated to each proposed NWQ-A through NWQ-D user based on that user’s percentage of space used in each respective building (See Table 11.2.1.1 in the NWQ Redevelopment Plan). Table 9.2.1. summarizes Student Health Services’ non-assignable space allocation.

Table 9.2.2. shows the proportional share of costs from the separate infrastructure project. The NWQ-A Site work cost allocation is also indicated. These costs are then combined to present a comprehensive budget summary for Student Health Services, with infrastructure allocations applied over the total gross square footage. (See the NWQ Redevelopment Plan for more detail).

### Table 9.2.1. Student Health Services Non-Assignable Space Allocations

<table>
<thead>
<tr>
<th>NWQ Building</th>
<th>Total Proposed GSF</th>
<th>Total Proposed GSF minus building Non-assignable GSF</th>
<th>Total building non-assignable by building</th>
<th>% of Building</th>
<th>Student Health Services</th>
<th>Non-Assignable GSF Allocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>NWQ-A</td>
<td>204,557</td>
<td>187,163</td>
<td>17,394</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWQ-B</td>
<td>277,124</td>
<td>239,065</td>
<td>38,059</td>
<td>12.99%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWQ-C</td>
<td>147,167</td>
<td>119,736</td>
<td>27,431</td>
<td>2.94%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NWQ-D</td>
<td>152,935</td>
<td>134,309</td>
<td>18,626</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Subtotal GSF per User (Fit Plan)</td>
<td>34,587</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Subtotal Non-Assignable GSF Allocation</td>
<td>5,753</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Total GSF (incl. allocation)</td>
<td>40,340</td>
</tr>
</tbody>
</table>

### Table 9.2.2. Student Health Services Infrastructure Budget Allocation

<table>
<thead>
<tr>
<th>Infrastructure Project and NWQ-A Site Work Allocation Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC (Infrastructure Project Allocation): $2,507,181</td>
</tr>
<tr>
<td>TPC (Infrastructure Project Allocation): $3,076,799</td>
</tr>
<tr>
<td>CC (NWQ-A Site Work Allocation): $195,487</td>
</tr>
<tr>
<td>TPC (NWQ-A Site Work Allocation): $248,629</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Infrastructure Work Allocations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Gross Square Feet (GSF) (includes proportional allocation of building non-assignable areas): 40,340</td>
</tr>
<tr>
<td>Construction Cost (CC) / Total GSF: $67</td>
</tr>
<tr>
<td>Total Project Cost (TPC) / Total GSF: $82</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cumulative Total Project Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC (Discrete Project + Infrastructure Allocations) $7,476,368</td>
</tr>
<tr>
<td>TPC (Discrete Project + Infrastructure Allocations) $9,910,428</td>
</tr>
<tr>
<td>Total Gross Square Feet (GSF) (includes proportional allocation of building non-assignable areas): 40,340</td>
</tr>
<tr>
<td>Construction Cost (CC) / Total GSF: $185</td>
</tr>
<tr>
<td>Total Project Cost (TPC) / Total GSF: $246</td>
</tr>
</tbody>
</table>
10 Schedule

10.1 Schedule Detail
10.1. Schedule Detail

Table 10.1.1. shows the schedule summary for the Student Health Services project within the Northwest Quadrant. This schedule reflects the DFD guidelines for the typical duration of Design, Bid and Construction.

As proposed, this project can proceed only after separate infrastructure upgrades are completed or concurrently with that project. Figure 10.1.1. describes these necessary NWQ infrastructure upgrades. See the Northwest Quadrant Redevelopment Plan for details.

Note on construction staging strategies: The three bay loading dock between NWQ-C and NWQ-D is the primary entry point for material distribution and deliveries for the complex. It is recommended that areas adjacent to the loading dock be used for material staging, not only of incoming, but also outgoing materials. It is anticipated that the dock would be managed by UWM to facilitate logistical movement of materials for not only existing users but also future build-outs. Portions of the buildings at this site will be occupied during construction. During future construction phases, it is important to coordinate efforts with DFD/UWM to minimize conflicts and facilitate usage. It will be imperative that work does not interfere with Owner’s Operations. Noisy work such as core drilling, hammer drilling, cutting on structure are limited to non-business hours: 10pm to 7am weekdays and on weekends as approved by DFD Construction Representative. Noisy work will be coordinated and scheduled with the DFD Construction Representative.

NWQ is adjacent to a residential neighborhood, therefore it is recommended that work be conducted during normal working hours from 7:00 A.M. to 10:00 P.M. daily, Monday Through Friday, in coordination with User Agency and DFD’s Project Representative. Weekend or after-hour work should only be permitted if coordinated with and approved by UWM Facilities and Campus Security. Arrangements for after-hours work must be made 48 hours in advance with UWM Facilities and DFD’s Project Representative. Parking consideration should also be taken into account. No dedicated parking area will be reserved for workers personal vehicles. Refer to www.uwm.edu/parking for available public parking resources.

<table>
<thead>
<tr>
<th>Duration</th>
<th>4 Months</th>
<th>2 Months</th>
<th>2 Months</th>
<th>1 Month</th>
<th>2 Months</th>
<th>1 Month</th>
<th>3 Months</th>
<th>3 Months</th>
<th>15-18 Months</th>
<th>32-35 Months</th>
</tr>
</thead>
</table>

- Based on DFD Guide for Determining Time Required to Design, Bid, and Construct ($2.5 M-$5 M Construction Cost) (Contract for A/E Services revised to indicate 4 months which includes contract negotiation time)
- Based on average conditions with no unusual delay in delivery of materials or time lost to poor weather or other conditions.
Figure 10.1.1. NWQ Interdependency of Infrastructure Work
Appendix

11.1. Zoning and Code Detail
11.2. Equipment List
11.3. Budget Detail
11.1. Zoning and Code Detail

GENERAL
All state facilities must be constructed in compliance with all applicable state and federal laws, rules, codes and regulations. State facilities are exempted from local codes and regulations including county and municipal codes with 2 exceptions:

• County and municipal land-use zoning regulations apply to state facilities.
• County or municipal officials are the state’s enforcement agents: example – county land water agents enforce the Department of Agriculture and Consumer Protection animal waste regulations.

From DFD Policy and Procedure Manual (Nov. 17, 2008), Section 4.D.1

The purpose of this preliminary code review memo is to help identify existing code or life-safety non-conformities of the existing NWQ-A through D areas that could impact the lease, use and development of a portion of the UW- Milwaukee Northwest Quadrant facility as Student Health Services space for the University. This review was based on a preliminary walkthrough visual inspection of the facility, review of prints of original construction drawings, the schematic design building and site plans prepared by Quorum Architects, the current Wisconsin adopted 2009 International Building Code (IBC), 2009 International Existing Building Code (IEBC) and City of Milwaukee Zoning Code. This review is preliminary and should not be construed as a final and complete document. Code interpretation is subjective and the interpretations presented are based on past experience using the codes, previous acknowledged interpretations and industry standard practices. State of Wisconsin Plan Examiner and Building Inspector interpretations may differ. A preliminary meeting with an official from the Wisconsin State Department of Safety and Professional Services (DSPS) is suggested during development of construction documents in order to minimize conflicting interpretations.

General Note
• Items and passages within this report that are in quotation marks or in italicized font are typically verbatim references lifted from the indicated code or regulation section.

BUILDING HISTORY
The Northwest Quadrant building was originally constructed as a hospital – most recently owned by Columbia - St. Mary’s Hospital (CSM) – and is located at the northwest intersection of Hartford and Maryland Avenues in Milwaukee, Wisconsin. The site is bordered on the south and east sides by the University of Wisconsin-Milwaukee and on the north and west sides by residential neighborhood.

The existing building structures were constructed in phases between 1919 and 1993. The complex was used continuously as a hospital until 2009. The building has been mostly vacant but heated since 2009. The buildings range in height from one to eight stories. The buildings are generally in good condition, due to an extensive maintenance program that was run by CSM when it owned the complex.

All of the structures on the south half of the Northwest Quadrant (NWQ) campus are physically connected and linked by a common corridor running the length of the complex from east to west. In addition, it is linked to the parking structure by a skywalk. This complex of buildings served as the main hospital and was built incrementally over the years. The oldest portion of the building (NWQ-A) stands at the southeast corner of the NWQ campus. Subsequent additions (NWQ-B, NWQ-C & NWQ-D) were made to the west. The hospital operated an emergency room, clinics, medical labs, physicians’ & administrative offices, and a pharmacy. Other functions included a nursing school (NWQ-F), physical plant (NWQ-E), kitchen & cafeteria, and an auditorium. A 700+ car
parking structure (NWQ-G) at the northwest corner of the complex and surface parking lots serviced the complex. The old School of Nursing (NWQ-F) has recently been occupied as the home of UW-M Honors House.

The main complex (NWQ-A through D) is of Type IA construction per the International Building Code and was classified as a Group I-2 (Hospital) use at the time the NWQ was purchased by the University from Columbia - St. Marys. Since acquiring the facility, renovations by UWM have changed the use group of certain portions of the building (see the Building Information summary below). NWQ-A through D is separated by 2-hour minimum fire-resistance rated fire barriers into four separate fire zones – roughly demised by demarcations between the building areas. It is protected by a partial sprinkler system (see chart below for breakdown by fire area). There is also a smoke evacuation system from the 1980’s that 77 zones separated by 1-hour rated walls that was installed to address non-compliant shaft and floor penetrations. The smoke evacuation system was agreed to by the old Department of Health & Family Services that oversaw construction in hospitals and was not been reviewed by the Department of Commerce/Safety & Buildings (formerly DIHLR – now DSPS).

BUILDING INFORMATION

Existing Building:  
(Sources: NWQ Surge Space Occupancy Submission 02/21/2011 and NWQ Children’s Center Plan Review Submission)

Previous Use and Occupancy Classification:  Medical (I-2)

Proposed Occupancy: Business Group B in Fire Area 1 (East Wing), Fire Area 2 (West Wing), and a combination of Group B and Child Care Group I-4 in Fire Area 3 (Clinical Building) & Fire Area 4 (Medical Arts Building). (Institutional I-4 in Fire Areas 3 & 4 on Ground Level & 1st Floor in demised Children’s Center area)

Construction:
Fire Area 1 (East Wing): Type 1A (NC)
Fire Area 2 (West Wing): Type 1A (NC)
Fire Area 3 (Clinical Bldg.): Type 1A (DIHLR Type A No. 1)
Fire Area 4 (MAB): Type 1A (DIHLR Type A No. 1)

Height and Area:
Building Footprint Area: 142,163 SF
Total Building Area: 760,967 SF UL (Unlimited) for Type IA per IBC Table 503
Number of Stories: 8 STORIES UL for Type IA per IBC Table 503
Height: 127’-8” UL for Type IA per IBC Table 503
Building Perimeter: 3,110 FEET
Automatic Sprinkler System: PARTIAL (see below for breakdown by Fire Area)

Existing Building Areas & Sprinkler Coverage:
FIRE AREA 1 - NWQ-A (East Wing): Occupancy Group I-2 (Partial Sprinkler System)

DSPS Facility No. 722491 212,233 Gross Sq. Ft.

FIRE AREA 2 - NWQ-B (West Wing): Occupancy Group B (Partial Sprinkler System)

DSPS Facility No. 720505 260,717 Gross Sq. Ft.

FIRE AREA 3 - NWQ-C (Clinical Bldg.): Occupancy Group I-2 & I-4 (Complete Sprinkler System)
DSPS Facility No. 720506 138,509 Gross Sq. Ft.

FIRE AREA 4 - NWQ-D (Med. Arts): Occupancy Group I-2
(Complete Sprinkler System)

DSPS Facility No. 720508 149,547 Gross Sq. Ft.

Main NWQ Complex Total Sq. Ft.: 761,006 Gross Square Feet

Proposed Building Use in Student Health Services Work Area:
FIRE AREA 2 – NWQ-B – 1st floor: 6,770 Gross Sq. Ft. Occupancy Group B
FIRE AREA 2 – NWQ-B – 2nd floor: 21,700 Gross Sq. Ft. Occupancy Group B
FIRE AREA 3 – NWQ-C – 2nd floor: 2,838 Gross Sq. Ft. Occupancy Group B

Work Area Total Sq. Ft.: 31,033 Gross Square Feet

Use and Occupancy Classifications:
Group B, Business per IBC 304.1.

Existing I-2, Hospital per IBC 308.3.

Group I-4, Day Care Facilities (Child) per IBC 308.5.2.

Possibly Group A-3, Lecture halls where not meeting the exceptions for being classified as an accessory area to a Group B use (limit of 750 square feet or 50 persons or more) per IBC 303.1.

Type of Construction: IA per IBC table 601
Maximum Allowable Area per Floor: Unlimited for Type IA per table 503

Maximum Height Allowed: Unlimited per IBC table 503
Increase in area and height allowed if sprinklered: No change for unlimited area

Mixed Occupancy Separation:
The existing complex has been separated into four fire areas with fire separation walls and opening protectives. Required separation between use group occupancies is as follows per IBC Table 508.4:

- Occupancy I-4 and B: 1 hour
- Occupancy I-4 and I-2: 2 hours
- Occupancy I-4 and A: 1 hour
- Occupancy A and B: 1 hour
- Occupancy B and I-2: 2 hours

Fire-resistive rating requirements for building elements (IBC table 601):

<table>
<thead>
<tr>
<th>Building Element</th>
<th>Type IA Fire Resistive Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural Frame</td>
<td>3 hour</td>
</tr>
<tr>
<td>Bearing Walls (Exterior)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Bearing Walls (Interior)</td>
<td>3 hours</td>
</tr>
<tr>
<td>Non-bearing Walls (Ext.)</td>
<td>0 hours where separation is 30’ or greater</td>
</tr>
<tr>
<td>Non-bearing Walls (Int.)</td>
<td>0 hours</td>
</tr>
<tr>
<td>Floor Construction</td>
<td>2 hours</td>
</tr>
<tr>
<td>Roof Construction</td>
<td>1-1/2 hours (0 were roof is 20 ft. or more above floor)</td>
</tr>
</tbody>
</table>

USE GROUP CLASSIFICATION
The proposed use of the Student Health Services will be as follows under the 2009 International Building Code (IBC):

IBC Section 304 – Business Group B
304.1 Business Group B. Business Group B occupancy includes, among others, the use of a building or structure, or a portion thereof, for office, professional or service-type transactions, including storage of records and accounts. Business occupancies shall include, but not be limited to, the following:

- Ambulatory health care facilities
- Laboratories: testing and research
- Professional services (physicians, etc.)

IBC Section 303 – Assembly Group as Accessory Use
303.1, Exceptions 1 & 2.

1. A building or tenant space used for assembly purposes with an occupant load of less than 50 persons shall be classified as a Group B occupancy.

2. A room or space used for assembly purposes with an occupant load of less than 50 persons and accessory to another occupancy shall be classified as a Group B occupancy or as part of that occupancy.

GOVERNING CHAPTERS OF IEBC
IEBC Chapter 7 – Alterations-Level 2
Per IEBC 404.1: Level 2 alterations include the reconfiguration of space, the addition or elimination of any door or window, the reconfiguration or extension of any system, or the installation of any additional equipment ... where the work area is less than 50 percent of the aggregate area of the building.

Portions of the building undergoing alterations (less than 50% of the aggregate area of the building) without an accompanying Change of Use would be reviewed as an Alteration – Level 2 per the International Existing Building Code (IEBC 2009), with comparison to the International Building Code (IBC 2009) for what would currently be required. Note that “work area” as defined by the IEBC is that portion or portions of a building consisting of all reconfigured spaces as indicated on the construction documents.

Work area excludes other portions of the building where incidental work entailed by the intended work must be performed and portions of the building where work not initially intended by the owner is specifically required by that code.

IEBC Chapter 9 – Change of Occupancy
The change of the existing use Group I-2 in the proposed area of work to Group B will trigger the provisions of IEBC Chapter 9, per IEBC 901.3: Where the occupancy classification of a building changes, the provisions of Section 902 through 912 shall apply. This includes a change of occupancy classification within a group as well as a change of occupancy classification from one group to a different group. Per IEBC 901.3.1: Where a portion of an existing building is changed to a new occupancy classification, Section 912 shall apply.

The balance of the structure is eventually undergoing or has undergone a change of use to Group B – Business. A portion of the NWQ-C is would need to be changed from I-2 to Business Group B. NWQ-B has already been changed to Business Group B.

SPECIFIC IEBC CODE REQUIREMENTS
Building Elements and Materials (IEBC 903.1):
Building elements and materials in portions of building undergoing a change of occupancy classification shall comply with Section 912. See commentary under IEBC 912.

Comm 66.0901 Change of occupancy.
(2) Change of occupancy classification. This is a department rule in addition to the requirements in IEBC section 901.3: Buildings undergoing a change in occupancy that would result in an increase in demand for either fossil fuel or electrical energy shall comply with IECC. Randy Dahman at DSPS has ruled that existing mechanical units, if unchanged, do not need to meet the more stringent energy standards.
Fire Protection (IEBC 904.1): Fire protection requirements of Section 912 shall apply where a building or portions thereof undergo a change of Occupancy classification. See commentary under IEBC 912.

Means of Egress (IEBC 905.1): Means of egress in portions of building undergoing a change of occupancy classification shall comply with Section 912. See commentary under IEBC 912.

Accessibility (IEBC 906.1): Accessibility in portions of buildings undergoing a change of occupancy classification shall comply with Section 912.8. See commentary under IEBC 912.

Structural (IEBC 907):
IEBC 907.1 Gravity Loads: Buildings or portions thereof subject to a change of occupancy where such change in the nature of occupancy results in higher uniform or concentrated loads based on Tables 1607.1 and 1607.6 of the IBC shall comply with the gravity load provisions of the IBC. Exception: Structural elements whose stress is not increase by more than 5 percent.

It is assumed that the change of occupancy in the work area of the building will not result in higher concentrated loads.

IEBC 907.3 Seismic Loads: Existing buildings with a change of occupancy shall comply with the seismic provisions of Sections 907.1 and 907.3.2.

Use Groups I-2 (existing) and I-4 (proposed) fall into the same hazard categories per IEBC Table 912.4. Therefore, no compliance with current IBC seismic forces is required.

Electrical (IEBC 908):
IEBC 908.1 Special Occupancies: Where the occupancy of an existing building or part of an existing building is changed to a [place of assembly] as described in NFPA 70, the electrical wiring and equipment of the building or portion thereof that contains the proposed occupancy shall comply with the applicable requirements of NFPA 70 whether or not a change of occupancy is involved.

Some areas of the final plan will probably be classified as assembly use.

IEBC 908.2 Unsafe Conditions: All unsafe conditions shall be corrected without requiring that all parts of the electrical system comply with NFPA 70.

IEBC 908.4 Number of Electrical Outlets: Where the occupancy of an existing building or part of an existing building is changed, the number of electrical outlets shall comply with NFPA 70 for the new occupancy.

All newly installed electrical equipment and wiring relating to work done in the work area shall comply with the requirements of IEBC Chapter 5. Electrical equipment and wiring in newly installed partitions and ceiling shall comply with all applicable requirements of the National Electrical Code (NEC).

Mechanical (IEBC 909.1): Where the occupancy of an existing building or part of an existing building is changed such that the new occupancy is subject to different kitchen exhaust requirements or to increased mechanical ventilation requirements in accordance with the International Mechanical Code, the new occupancy shall comply with the intent of the respective IMC provisions.

The change of use to offices should not trigger a requirement for additional ventilation. However, using surge space for classroom could require that the mechanical system will need to meet current IMC requirements.
Additional Mechanical Code Items related to NWQ Projects:

Engineered Smoke Control System: From Ring & DuChateau’s Project Memo of May 9, 2012:

An engineered smoke control system consisting of 77 zones serves the A and B buildings along with the 1982 portion of the C building. The ESCS was installed in the mid 1980’s as an authorized alternative to upgrading deficiencies in the integrity of existing fire rated shafts, fire separations and smoke separations. Authorization was given by the Department of Health and Family Services who was the governing authority for healthcare facilities. In 1990, the ESCS was upgraded by monitoring the smoke detection devices thru the fire alarm system.

Now that the facility is no longer a healthcare facility, the Safety and Buildings Division of the Department of Safety and Professional Services is the governing authority for the building. A preliminary code consultation meeting was held with Dave Wallace, DSPS plan reviewer on May 30, 2012 in Madison to clarify specific code requirements related to renovation of portions of the NWQ. At that meeting, “Dave Wallace indicated that the existing smoke control system should be kept operation to the best of its ability until passive upgrades are applied. Sprinklering the entire building would be viewed as an equivalency that would allow for abandonment of the smoke control system” (from meeting follow-up letter prepared by Quorum Architects and dated June 5, 2012). The Infrastructure project included in the NWQ Redevelopment Plan proposes adding automatic sprinklers to those areas of the building not currently covered and would allow for abandonment of the ESCS system.

Plumbing (IEBC 910):

Comm 66.0912 Plumbing. Substitute the following wording for the requirements in IEBC section 910: Where the occupant load of a story is increased by more than 20 percent, plumbing fixtures for the story shall be provided in quantities specified in the IBC based on the increased occupant load.

Different plumbing requirements and fixture locations will require that those areas renovated meet current IPC provisions.

IEBC 910.2 Food-handling Occupancies: If planning for future kitchen/food preparation/serving area, all existing sanitary waste lines above food or drink preparation or storage areas shall be panned or otherwise protected to prevent leaking pipes or condensation on pipes from contaminating food or drink. New drainage lines shall not be installed above such areas and shall be protected in accordance with the IPC.

IEBC 910.3 Interceptor Required: If the new occupancy will produce grease or oil-laden wastes, interceptors shall be provided as required in the IPC.

Light and Ventilation (IEBC 911): Light and ventilation shall comply with the requirements of the IBC for the new occupancy.

Change of Occupancy Classification (IEBC 912): Provisions of this section apply to buildings or portions thereof undergoing a change
of occupancy classification. Per IEBC 912.1.1, the requirements of Chapter 8 shall be applicable throughout the building for the new occupancy classification based on the separation conditions set forth in Sections 912.1.1.1 and 912.1.1.2.

IEBC 912.1.1.2 Change of Occupancy Classification with Separation: Where a portion of an existing building that is changed to a new occupancy is separated from the remainder of the building with fire barriers having a fire-resistance-rating as required by the IBC for the separate occupancy, that portion shall comply with all the requirements of Chapter 8 and this chapter.

IEBC 912.4 Accessibility: All buildings undergoing a change of occupancy classification shall comply with Section 912.8. IEBC 912.8.1 requires that only the portion of the building where the occupancy classification changes need comply with the accessibility provisions of IEBC 695 and 706. However, because the whole complex will eventually go through a change of occupancy and because this project should stand alone, this project should approach accessibility per IEBC 912.8.2 and require:

- At least one accessible building entrance.
- At least one accessible route from an accessible building entrance to primary function area.
- Signage complying with Section 1110 of the IBC.
- Accessible parking.
- At least one accessible passenger loading zone, where loading zones are provided.
- At least one accessible route connecting accessible parking and accessible passenger loading zones to an accessible entrance.

IEBC 912.2.1 Fire Protection Systems: The existing fire protection sprinkler system will remain and be re-engineered in accordance with chapter 9 of the IBC throughout the area where the change of occupancy occurs.

IEBC 912.2.2 Fire Alarm and Detection System: The existing fire alarm and detection system will remain interconnected to the existing building-wide system and modified in accordance with Chapter 9 of the IBC throughout the area where the change of occupancy occurs.

A separate capital expenditures project is under construction by DFD to address installing a new fire alarm backbone that areas undergoing upgrading of systems can be tied into. Alarms in existing areas will need to be maintained until such time as they are upgraded or replaced to communicate with the new system.

IEBC 912.3 Interior Finish: Finishes in the area where the change of occupancy occurs shall comply with the requirements of the IBC. IBC Table 803.9 requires the following interior wall and ceiling finish requirements by occupancy (Group B, sprinklered & unsprinklered):

<table>
<thead>
<tr>
<th>Sprinklered</th>
<th>Unsprinklered</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exit enclosures and exit passageways: Class A</td>
<td>Class B</td>
</tr>
<tr>
<td>Corridors: Class B</td>
<td></td>
</tr>
<tr>
<td>Rooms and enclosed spaces: Class C</td>
<td></td>
</tr>
</tbody>
</table>

IEBC 912.4.2 Means of Egress for change of Use to Equal or Lower Hazard Category: Existing elements of the means of egress shall comply with requirements of IEBC Sections 805 and 705 for the new occupancy classification. Newly constructed or configured means of egress shall comply with the requirements of Chapter 10 of the IBC.

IEBC 912.4.3 Egress Capacity: Egress capacity shall meet or exceed the occupant load as specified in the IBC for the new occupancy. The existing building currently meets occupancy loading for the existing I-2 use. A review of egress and exit capacity will be done on the design development plan once designed.
EXITING AND EGRESS
Means of Egress: The following are maximum floor area allowances per occupant by Occupancy Classification from IBC Table 1004.1:

Assembly – Unconcentrated (Tables & Chairs): 15 sq ft net
Assembly – Standing space: 5 sq ft net
Assembly – Concentrated (Chairs only): 7 sq ft net
Business Areas: 100 sq ft gross
Educational – Classroom: 20 sq ft net
Educational – Shops & Labs: 50 sq ft net
Exercise Rooms: 50 sq ft gross
Institutional Area
Inpatient treatment rooms: 240 sq ft gross
Outpatient treatment rooms: 100 sq ft gross
Library: 50 sq ft net
Accessory Storage Areas: 300 sq ft gross

Egress widths shall be calculated per IBC 1005.1:
Stairways: 0.3 inches per occupant
Other egress components: 0.2 inches per occupant

IBC EXITING REQUIREMENTS
• Exit access travel distance is restricted to 300 feet maximum in a fully sprinklered building.
• Corridors in Group B must be 44 inches in width – minimum.
• Every floor level shall have at least 2 exits. All exits must lead directly to a street, alley or open court, which is connected to a street or alley.
• Common path of egress travel shall not exceed 75 feet.
• In any work area, all rooms and spaces having an occupant load greater than 50 or which the travel distance exceeds 75 feet shall have a minimum of 2 egress doorways.
• Where the work area exceeds 50 percent of the floor area, door swing shall be in the direction of exit for rooms or spaces serving an occupant load greater than 50.
• In any work area, all doors opening onto an exit passageway at grade or an exit stair shall be self-closing or automatically closing by listed closing devices.
• In any work area, and in the egress path from any work area to the exit discharge, in buildings or portions thereof of Group A assembly occupancies with an occupant load greater than 100, all required exit doors equipped with latching devices shall be equipped with approved panic hardware.
• Dead end corridors in any work area shall not exceed 20 feet in the Use Group B area in the un-sprinklered fire areas. Dead ends in Group B area shall not exceed 50 in sprinklered buildings.
• Walls separating room from corridors do not need to have an hourly rating due to being a B use in a sprinkled building.

IEBC 912.4.4 Handrails: Per IEBC 705.9, existing stair handrail required both sides – OK.

IEBC 912.4.5 Guards: Existing guards shall comply with 705.10 in the area of change of occupancy. Per 705.10, existing guards need to be only 30 inches above floor. The existing stairs currently have only a 30” high guard and have openings larger than 4” diameter.

IEBC 912.7.3 Other Vertical Shafts: Interior shafts other than stairways, including but not limited to elevator hoistways and service and utility shafts, shall be enclosed as required by the IBC when there is a change of use to a higher category.

Exception 1. Existing 1-hour interior shaft enclosures shall be accepted where a higher rating is required.
IEBC 912.7.4 Openings: All openings into existing vertical shaft enclosures shall be protected by fire assemblies having a fire-protection rating of not less than 1 hour and shall be maintained self-closing or shall be automatic closing by actuation of a smoke detector. All other openings shall be fire protected in an approved manner. Existing fusible link-type automatic door-closing devices shall be permitted in shafts except stairways if the fusible link rating does not exceed 135°F.

Existing Vertical Openings (IEBC 703.2.1): All existing interior vertical openings connecting two or more floors shall be enclosed with approved assemblies having a fire-resistance rating of not less than 1-hour with approved opening protective.

Vertical Separation of Exterior Openings (IBC 704.9): Openings in exterior walls in adjacent stories shall be separated vertically to protect against fire spread on the exterior of the building where the openings are within 5 feet of each other horizontally and the opening in the lower story is not a protected opening. Such openings shall be vertically separated by at least three feet of spandrel or other assembly having a 1-hour rating or by flame barriers that extend horizontally at least 30 inches beyond the exterior wall. The existing vertical separation meets code.

Exit Discharge (IBC 1027): At the 1st floor, the Student Health Services suite exits directly to grade at the south through an existing building vestibule and to the north back into the ground floor common area. At the 2nd floor, the existing stairwell at the southwest corner of the NWQ-B exits to grade at Floor 1 and is separated from the entry vestibule that is adjacent. There is an existing stairwell at the east side of the suite directly across from the Yellow Elevators that exits to the exterior at the 1st floor and an existing stairwell at the northwest corner that exits into an exit corridor to an exterior door on the north on the 1st floor. The Student Health Services at the 2nd floor of NWQ-B also exits to the west through fire-separation doors into NWQ-C, past the Brown Elevators and to a stairwell that exits to grade at the Ground Level by the Loading Dock.

IBC 1027.1, Exception 1 allows for a maximum of 50 percent of the number and capacity of the exit enclosures to egress through area on the level of discharge provided that all of the following are met:

1.1 Such exit enclosures egress to a free and unobstructed path of travel to an exterior exit door and such exit is readily visible and identifiable from the point of termination of the exit enclosure.

1.2 The entire area of the level of exit discharge is separated from areas below by construction conforming to the fire-resistance rating for the exit enclosure.

1.3 The egress path from the exit enclosure on the level of exit discharge is protected throughout by an approved automatic sprinkler system. All portions of the level of exit discharge with access to the egress path shall either be protected throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1 or 903.3.1.2, or separated from the egress path in accordance with the requirements for the enclosure of exits.

Exit Enclosures (IBC 1022): The exit path of the northwest stairwell on the Floor 1 of the NWQ-B is currently not completely separated from other areas on the Floor 1. If not addressed by another project, the exit corridor at the ground floor should be separated from adjacent areas by 2-hour fire resistant rated construction.

IBC 1022.3 states that Elevators shall not open into an exit enclosure.

Elevator Lobbies (IBC 708.14.1): An enclosed elevator lobby shall be provided at each floor where an elevator shaft enclosure connects more than three stories. The lobby enclosure shall separate the elevator shaft enclosure doors from each floor by fire partitions.
In addition to the requirements in Section 708 for fire partitions, doors protecting openings in the elevator lobby enclosure walls shall also comply with Section 715.4.3 as require for corridor walls and penetrations of the elevator lobby enclosure by ducts and air transfer openings shall be protected as required for corridors in accordance with Section 716.5.4.1.

The Yellow Elevator bank opens into an elevator lobby that is part of the exit access route to the NWQ-B east exit stair. The Orange Elevator bank opens into the 2nd floor corridor between the NWQ-A & NWQ-B. The Brown Elevator bank opens into the exit corridor from NWQ-B into NWQ-C. The 2009 IBC Code Commentary for Section 708.14.1 Elevator Lobby clarifies that elevator lobbies must have at least one means of exit and must allow two separate directions for egress once you have left the elevator lobby enclosure. The commentary goes on to clarify the following:

- Egress through elevator lobbies from corridors on both sides is allowed.
- A space can have its only exit access path through an elevator lobby if it meets all the other egress requirements.
- An exit enclosure (such as a stair) can open into an elevator lobby, but hoistway doors cannot open into an exit enclosure.

In the case of a through corridor passing in front of an elevator bank such as what happens at the Yellow, Orange and Brown elevators, you would have the following options for creating the elevator lobby:

- Install dual egress doors on magnetic hold opens across the corridor at each end of the elevator lobby.
- Install side-acting automatic closing partitions such as a Won Door across the corridor to define the elevator lobby.
- Install automatically closing doors or roll-down smoke screens directly at the elevator hoistway entrances: this in effect creates a miniature elevator lobby in the area between the hoistway doors and the self-closing smoke containment opening protective.

The Brown elevator shafts are currently separated from the corridor by self-closing doors in front of the hoistway doors. These doors must be manually reopened after an alarmed event and would be candidates for removal and replacement.

The Red elevators are separated from the Student Health Services suite at the 1st floor by fire-rated doors and separation wall. 2-hour fire and smoke separation doors will need to be added at the 2nd floor to separate the elevator lobby from the rest of the suite. These doors can be on automatic hold-opens tied to the fire alarm.

ADA ACCESSIBILITY
ADA Accessibility (IEBC 706):
Per IEBC Section 706, a building, facility or element that is altered shall comply with Section 605 of the IBC. In alterations where a stair is added where none existed previously, an accessible route shall be provided in accordance with Sections 1104.4 and 1104.5 of the IBC.

Per Section IEBC Section 605, a building, facility or element that is altered shall comply with the applicable

Entrances (IEBC 605.1.1): Where an alteration includes alterations to an entrance, and the building or facility has an accessible entrance on an accessible route, the altered entrance is not required to be accessible unless required by Section 605.2. Signs complying with Section 1110 of the IBC shall be provided. The accessible entrance to the Student Health Center at the 1st floor will be through automatic sliding doors from the “town square” area to the north. Accessible entry to the building will from accessible parking and exterior doors on the north side of the complex. Access to Floor 2 will be through existing accessible elevators (Red, Brown, Black, Orange & Yellow).

- Alterations and Additions:
  - For alterations, other than repairs, what you touch must meet current code.
If over 50% altered or added on, then the whole building shall comply with current code.

If <50% altered or added on, then the altered space shall meet the current code.

Alteration percentages are cumulative. If previous alterations (within the previous three years) did not trigger ADA upgrades based on “disproportionality”, then their 20% requirements are added on to the current 20% until they are spent.

Change of use does not trigger code, unless remodeling takes place.

Not retroactive to existing buildings, unless physically altered or added on to.

Change of ownership does not trigger the code.

Also, the following items “along the path of travel” serving alterations involving a “primary function” must meet current code, unless “disproportionality” (maximum 20% of project hard costs) can be shown: accessible entrances, exits, toilets, drinking facilities, and public telephones. (Existing stairs may remain).

Accessibility of Other Features and Facilities (IBC 1109):
Accessible building features and facilities shall be provided in accordance with Sections 1109.2 through 1109.14.

• IBC 1109.2 Toilet and bathing facilities. Each toilet room and bathing room shall be accessible. At least one of each type of fixture, element, control or dispenser in each accessible toilet room and bathing room shall be accessible.

Exceptions:
3. Where multiple single-user toilet rooms or bathing rooms are clustered at a single location, at least 50 percent but not less than one room for each use at each cluster shall be accessible.

• IBC 1109.2.1 Family or assisted-use toilet and bathing rooms. In assembly occupancies, an accessible family or assisted-use toilet room shall be provided where an aggregate of six or more male and female water closets is required. In building of mixed occupancy, only those water closets required for the assembly occupancy shall be used to determine the family or assisted-use toilet room requirement. At least one family or assisted-use toilet room will need to be provided to cover the requirements related to the assembly use room(s). This toilet room should be located in the area of the assembly use, but can also be used as a general unisex accessible toilet room.

Water Closets and Toilet Compartments [ANSI 117.1 2003 – 604.10 and Department of Justice (DOJ) 2010 Standards for Accessible Design – 604.9 (applicable as of March 15, 2012)]:

• ANSI 117.1 604.10.2 /DOJ 604.9.1 Location: The water closet shall be located with a wall or partition to the rear and to one side. The center line of the water closet shall be 12 inches minimum to 18 inches maximum from the side wall or partition.

• ANSI 117.1 604.10.4 /DOJ 604.9.2 Clearance: A clearance around a water closet complying with Section 604.3 shall be provided (60” from sidewall and 59 inches from rear wall). The required clearance around the water closet shall be permitted to overlap the water closet, associated grab bars, paper dispensers, sanitary napkin receptacles, coat hooks, shelves, accessible routes, clear floor space at other fixtures and turning space. No other fixtures or obstructions (including the lavatory) shall be within the required water closet clearance.

• ANSI 117.1 604.10.4/DOJ 604.9.3 Height: The height of water closet seats shall be 11 inches minimum and 17 inches maximum above the floor, measured to the top of the seat. Seats shall not be sprung to return to a lifted position.

• ANSI 117.1 604.10.6/DOJ 604.9.5 Flush Controls: Flush controls shall be hand operated or automatic. Hand operated flush controls shall be installed 36 inches maximum above the finish floor. Flush controls shall be located on the open side of the water closet except in ambulatory accessible compartments.

• ANSI 117.1 604.10.7/DOJ 604.9.6 Dispensers: Toilet paper dispensers shall comply with 309.4 and shall be 7 inches minimum and 9 inches maximum in front of the water closet measured to the center line of the dispenser. The outlet of
the dispenser shall be 14 inches minimum and 19 inches maximum above the finish floor. There shall be a clearance of 1-1/2 inches minimum below the grab bar. Dispensers shall not be of a type that controls delivery or that does not allow continuous paper flow.

- ANSI 117.1 604.10.8/DOJ 604.9.7 Toilet Compartments: Toilet compartments shall comply with Sections 604.8 and 604.9, as applicable. The minimum area of a wheelchair accessible compartment shall be 60 inches minimum in width from sidewall and 56 inches minimum in depth for wall hung water closets and 59 inches in depth for floor mounted water closets measured perpendicular to the rear wall.

**Plumbing (IEBC 710, IBC Chapter 29, ANSI A117.1):**

ICB Chapter 29

Use Group B requires the following minimum number of plumbing fixtures per Table 2902.1:

- Water Closets: 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50
- Lavatories: 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80
- Bathtubs or Showers: None Required
- Drinking Fountains: 1 per 100
- Other: 1 service sink

Plumbing fixture requirements to be verified base on proposed occupant loads yet to be determined.

**IBC Section 2903 Toilet Room Requirements:**

[P] IBC 2903.1 Water closet compartment. Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

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### 11.2. Equipment List

Figure 11.2.1. preliminary equipment list identifies, but is not limited to, possible equipment to be located within the Student Health Services.

**Figure 11.2.1.** Student Health Services Preliminary Equipment List

#### Exam Rooms
- Exam tables
- Exam stools
- Rolling storage cart
- Side chairs
- Side chairs
- Upholstered chair
- Oto/ophth wall unit
- Portable BP units
- Ear tip holder
- Flag system
- Lighting - table mount
- Lighting - portable
- Sharps containers
- Multi size glove holder
- Towel dispenser
- Soap dispenser
- Purell dispenser
- Cup dispenser
- Wastebasket - step on
- Tall covered wastebasket
- Bulletin board
- Art work
- Mirror(s)
- Pulse ox
- Peak flow meters
- Coat hooks
- Clock

#### Triage Room
- Exam table
- Exam stool
- Portable BP unit
- Pulse ox
- Peak flow
- Oto/ophth

#### Minor Procedure Room
- Procedure table
- ECG
- Spirometry
- Ceiling mounted lighting

#### Vaccination Room
- Gurney
- Exam stool
- Refrigerator
- File cabinet

#### Care Provider Station
- Office chairs

#### Shared Computer Work Station
- Desk w/ file drawer
- Office chair

#### Provider offices
- Drawing chairs
- Biologic Safety Cabinet
- Stools
- Office chairs
- Side chairs

#### Lab
- Office chairs
- Side chairs

#### Pharmacy
- Office chairs
- Side chairs

---

**Waiting Room**

- Chairs
- End tables
- Magazine display rack

**Reception/check in**

- Office chair
- Side chair

**Student Stations**

- Office chair
- Locker unit
(This page intentionally left blank)
11.3 Budget Detail
**PROJECT TITLE:** NWQ Student Health Services  
**LOCATION:** University of Wisconsin Milwaukee Northwest Quadrant  
**Date Prepared:** 05/07/14  
**Prepared By:** XXX  
**Revised By:** XXX  
**OPTION NO.:** 0  
**TOT PROJ COST EST:** 6585000

### NEW BUILDING AREA

<table>
<thead>
<tr>
<th>Description</th>
<th>Base Date</th>
<th>Efficiency</th>
<th>Base Index</th>
<th>Projected Bid Date</th>
<th>Projected Bid Index</th>
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<tbody>
<tr>
<td>ASF New Const</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>GSF New Const</td>
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### REMODELING AREA

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### NEW CONSTRUCTION REMODELING DEMOLITION HAZMAT ABATEMENT SPECIAL CONSTRUCTION

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<tr>
<td>REMODELING</td>
<td>4,168,000</td>
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<tr>
<td>DEMOLITION</td>
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</tr>
<tr>
<td>HAZMAT ABATEMENT</td>
<td>41,700</td>
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<tr>
<td>SPECIAL CONSTRUCTION</td>
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### SUBTOTAL CONSTRUCTION COST

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<td>DESIGN CONTINGENCY</td>
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### SUBTOTAL UN-ESCALATED CONSTRUCTION COST

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### ESCALATION FACTOR

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### TOTAL CONSTRUCTION COST

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### A/E BASIC SERVICES A/E ADDITIONAL SERVICES PROJECT CONTINGENCY DFD MANAGEMENT FEE

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<td>PROJECT CONTINGENCY</td>
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### TOTAL FEES

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### SPECIAL & MOVABLE EQUIPMENT

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<td>SPECIAL &amp; MOVABLE EQUIPMENT</td>
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### TOTAL PROJECT BUDGET ESTIMATE

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**PBW_MPR_Summary**

5/7/2014  
K:\Milw\Estimating\Estimates\2012 Estimate Files\12-08E-046 UWM NWQ Redevelopment Plan\Book Docs\11K3C NWQ Student Health Center State Form 2014.05.07  
page 1 of 4
**THE UNIVERSITY OF WISCONSIN SYSTEM**

**MAJOR PROJECT BUDGET WORKSHEET**

**PROJECT TITLE:** NWQ Student Health Services  
**Date Prepared:** 05/07/14  
**LOCATION:** University of Wisconsin Milwaukee Northwest Quadrant  
**Prepared By:** XXX  
**Revised By:** XXX

**OPTION NO.:**

**NEW BUILDING AREA**

<table>
<thead>
<tr>
<th>ASF New Const</th>
<th>GSF New Const</th>
<th>Efficiency</th>
<th>Base Date:</th>
<th>07/2014</th>
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</table>

**REMODELING AREA**

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<th>Remodeling Efficiency</th>
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**Projected Bid Date:** 07/2014

**Base Index:** 5697

**GSF Remodeling:** 34,587

**GSF Total Bldg:** 34,587

**100.00% Remodeling**

**Eff. Occup. Date:** 07/2016

**NEW CONSTRUCTION BY SPACE TYPE**

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**REMODELING BY SPACE TYPE**

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**REMODELING BY TRADE**

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<tr>
<td>General</td>
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<tr>
<td>-Surface Treatment</td>
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<tr>
<td>-Minor</td>
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<tr>
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<td>-Complete</td>
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<tr>
<td>Plumbing</td>
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<td>-Minor</td>
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<tr>
<td>-Partial</td>
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<tr>
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<td>-Special Laboratory Needs</td>
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<tr>
<td>Heat/Vent/Air Cond</td>
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<tr>
<td>-Minor</td>
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<td>$0.00</td>
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<tr>
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**SUBTOTAL REMODELING COST:** 4,168,000

**SUBTOTAL BUILDING / REMODELING COST:** 6,954,000

**SUBTOTAL CONSTRUCTION COST:** 0
**PROJECT TITLE:** NWQ Student Health Services

**SUBTOTAL BUILDING / REMODELING COST (from page 1)**

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<th>Item</th>
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<td>- Building Demolition</td>
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<tr>
<td>- Selective Demolition</td>
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<tr>
<td>BY REMODEL</td>
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<tr>
<td>Hazardous Materials Remediation</td>
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<tr>
<td>- Asbestos Abatement</td>
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<tr>
<td>1% of Construction Cost</td>
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<tr>
<td>Additional Site Costs</td>
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<td>- Specify</td>
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<tr>
<td>Special Construction</td>
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</tr>
<tr>
<td>- New Stair</td>
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</tr>
<tr>
<td>- Dedicated Entry/Sitework</td>
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<tr>
<td>- Specify</td>
<td>0</td>
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<tr>
<td>- Specify</td>
<td>0</td>
</tr>
<tr>
<td>- Specify</td>
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<tr>
<td>Utility Extensions</td>
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<tr>
<td>- Specify</td>
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</tr>
<tr>
<td>Special Mechanical / Electrical Systems</td>
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</tr>
<tr>
<td>- NWQ-B Infrastructure Work - Plumbing, HVAC, Electrical</td>
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<tr>
<td>- Specify</td>
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<tr>
<td>Fixed Furnishings and Equipment</td>
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<tr>
<td>- Equipment</td>
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<tr>
<td>- Furniture and Fixtures</td>
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<td><strong>DESIGN CONTINGENCY</strong></td>
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<tr>
<td><strong>SUBTOTAL UN-ESCALATED CONSTRUCTION COST</strong></td>
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<tr>
<td><strong>ESCALATION FACTOR</strong></td>
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<td><strong>TOTAL CONSTRUCTION COST</strong></td>
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### NWQ Student Health Services

#### TOTAL CONSTRUCTION COST (from Page 2)

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<th>Description</th>
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<tr>
<td>1. Architect/Engineer Basic Services</td>
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<td>2. Additional Design Services</td>
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<td>- LEED™ certification</td>
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<tr>
<td>- Systems Furniture design</td>
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<tr>
<td>- Commissioning (specify level)</td>
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<tr>
<td>- EIS/EIA consultant</td>
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<tr>
<td>- Construction Testing</td>
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<tr>
<td>- Testing &amp; Balancing</td>
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<tr>
<td>- Specify</td>
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</tr>
<tr>
<td>3. Project Contingency</td>
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<tr>
<td>4. DFD Project Management</td>
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<td>5. Movable Equip. Allowance</td>
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<td>6. Special Equipment</td>
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<tr>
<td>- Audio-Visual</td>
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<tr>
<td>- Equipment</td>
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<tr>
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<td>- Food Service</td>
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<td>- Waste Management Equipment</td>
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#### TOTAL PROJECT BUDGET ESTIMATE

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<tr>
<td>$138 /ASF: Construction Cost (building &amp; site)</td>
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<tr>
<td>$190 /ASF: Total Project Cost</td>
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<td>$190 /GSF: Total Project Cost</td>
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### NOTES:
- 
- 

---

5/7/2014  
K:\Milw\Estimating\Estimates\2012 Estimate Files\12-08E-046 UWM NWQ Redevelopment Plan\Book Docs\11K3C NWQ Student Health Center State Form 2014.05.07  
page 4 of 4
### UniFormat System Summary

**Budget Estimate - Student Health Services**

**May 7, 2014**

<table>
<thead>
<tr>
<th>UniFormat System Breakdown</th>
<th>System Area SF</th>
<th>UM</th>
<th>per Sys. SF</th>
<th>per GSF</th>
<th>Total</th>
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<tr>
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<td>$0.46</td>
<td>$16,000</td>
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<td>SITE ELECTRICAL UTILITIES</td>
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<td></td>
<td>SUBTOTAL</td>
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**Per Gross Square Foot** $124.12 $/GSF  
**Gross Square Feet** 34,587 GSF
**STATE OF WISCONSIN**  
**UWM NW QUADRANT REDEVELOPMENT - DSF PROJECT #11K3C**  
**MILWAUKEE, WISCONSIN**

**TOTAL CONSTRUCTION - BUILDING / AREA BREAKDOWN**

**UNIFORMAT SYSTEM SUMMARY**

**BUDGET ESTIMATE - STUDENT HEALTH SERVICES**  
May 7, 2014

<table>
<thead>
<tr>
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<th>INFRASTRUCTURE UPGRADES</th>
<th>NEW STAIR</th>
<th>DEDICATED ENTRY</th>
<th>INTERIOR RENOVATION - STUDENT HEALTH SERVICES</th>
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<tbody>
<tr>
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<td>Total</td>
<td>$/GSF</td>
<td>Total</td>
<td>$/GSF</td>
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<tr>
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Student Health Center Summary Sheets
### SUPERSTRUCTURE

#### STRUCTURAL METALS

**STRUCTURAL METAL FRAMING**

<table>
<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
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<th>Price ($)</th>
<th>Total ($)</th>
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<td>STRUCTURAL STEEL - BEAMS, W12x58 - NEW STAIR</td>
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<td>TON</td>
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**TOTAL STRUCTURAL METAL FRAMING**

16,000

**TOTAL STRUCTURAL METALS**

16,000

**TOTAL SUPERSTRUCTURE**

16,000

### INTERIOR CONSTRUCTION

#### METAL FABRICATIONS

**MISC. METAL FABRICATIONS**

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<td>PROJECTOR SUPPORTS - 200 #/EA</td>
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<td>LBS</td>
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**TOTAL MISC. METAL FABRICATIONS**

10,747

**ORNAMENTAL METAL**

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<td>RAIL w/ CAP - LEVEL - NEW STAIR</td>
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<td>RAIL w/ CAP - PITCHED - NEW STAIR</td>
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**TOTAL ORNAMENTAL METAL**

45,000

**TOTAL METAL FABRICATIONS**

55,747

#### ROUGH CARPENTRY

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**TOTAL ROUGH CARPENTRY**

10,759

**TOTAL ROUGH CARPENTRY**

10,759

#### CARPENTRY & WOODWORK

**ARCHITECTURAL WOODWORK**

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<tr>
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<td>PLAM BASE CABINETS</td>
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<td>LF</td>
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<tr>
<td>PLAM WALL HUNG CABINETS</td>
<td>110.0</td>
<td>LF</td>
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<td>P-LAM. FULL HT. CABINET</td>
<td>78.0</td>
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<td>SOLID SURFACE COUNTERTOP w/SUPPORTS - COMPUTER STATIONS</td>
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**TOTAL ARCHITECTURAL WOODWORK**

156,401

**TOTAL CARPENTRY & WOODWORK**

156,401

#### SEALANTS, FIRE & SMOKE PROTECTION

**FIRESTOPPING, SMOKE SEALS & BARRIERS**

<table>
<thead>
<tr>
<th>Description</th>
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**TOTAL FIRESTOPPING, SMOKE SEALS & BARRIERS**

692
## Interior Construction

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<td>Sealants &amp; Caulking - Interiors</td>
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<td>865</td>
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### Hollow Metal Frames

- **Hollow Metal Frame, Single**: 83.0 EA, $254.02, Total: 21,084
- **Hollow Metal Frame, Double**: 7.0 EA, $289.02, Total: 2,023
- **Hollow Metal Frame, Single w/ Sidelite**: 41.0 EA, $339.02, Total: 13,900

Total Hollow Metal Frames: 37,007

### Doors, Frames & Hardware

- **Wood Doors**: 138.0 Leaf, $419.02, Total: 57,825

Total Wood Doors: 57,825

### Glass & Glazing Systems

- **Interior Glass & Glazing**: 34,587.0 GSF, $0.50, Total: 17,294
- **Tempered Glass, Sidelites**: 1,107.0 SF, $18.00, Total: 19,926
- **Unframed Mirrors, Bathrooms**: 64.0 SF, $14.00, Total: 896

Total Glass, Mirrors & Glazing: 38,116

### Plaster & Gypsum Board

- **Gypsum Board Walls**: 2,641.0 SF, $2.50, Total: 6,603
- **Drywall Furring, 50% of Existing Walls**: 7,398.0 SF, $2.50, Total: 18,945
- **GPDW BD. Partition - 1 Side**: 2,171.0 SF, $4.50, Total: 9,770
- **GPDW BD. Partition - 2 Sides**: 43,511.0 SF, $7.50, Total: 326,333
- **Misc. Patch / Prep. - Existing Gypsum Board Walls**: 14,796.0 SF, $1.00, Total: 14,796

Total Gypsum Board Walls: 375,996

### Specialties

- **Visual Display Boards**: 21.0 EA, $134.51, Total: 2,825

Total Specialties: 2,825
## INTERIOR CONSTRUCTION

<table>
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<td>MARKERBOARDS 10' x 4'</td>
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**TOTAL VISUAL DISPLAY BOARDS**

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**TOTAL COMPARTMENTS & CUBICLES**

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**TOTAL WALL & CORNER GUARDS**

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**TOTAL LOCKERS**

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**TOTAL FIRE PROTECTION SPECIALTIES**

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**TOTAL TOILET, BATH & LAUNDRY ACCESSORIES**

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**TOTAL METAL STAIRS & LADDERS**

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**TOTAL INTERIOR CONSTRUCTION**

891,962
**STATE OF WISCONSIN**  
**UWM NW QUADRANT REDEVELOPMENT - DSF PROJECT #11K3C**  
**MILWAUKEE, WISCONSIN**

**BUDGET ESTIMATE - STUDENT HEALTH SERVICES**  
**Project Qty:** 34,587 GSF  
Estimate Report

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<td>GYPSUM BOARD CEILINGS &amp; SOFFITS</td>
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<tr>
<td>TOTAL CERAMIC TILE</td>
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<tr>
<td>QUARRY TILE</td>
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<tr>
<td>QUARRY TILE STAIR TREAD - NEW STAIR</td>
<td>124.0</td>
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<td>TOTAL TILE &amp; TERRAZZO</td>
<td>59,616</td>
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<td>CEILINGS</td>
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<tr>
<td>FLOOR TREATMENT</td>
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<tr>
<td>MOISTURE CONTROL FLOOR SEALER - SHEET</td>
<td>1.0</td>
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<tr>
<td>VINYL - NOT INCLUDED</td>
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<tr>
<td>MOISTURE CONTROL FLOOR SEALER - CARPET - NOT INCLUDED</td>
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<tr>
<td>TOTAL FLOOR TREATMENT</td>
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<tr>
<td>RESILIENT FLOORING</td>
<td></td>
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<tr>
<td>VCT FLOORING - TELECOM / IT</td>
<td>1,013.0</td>
<td>SF</td>
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### Interior Finishes

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<thead>
<tr>
<th>Description</th>
<th>Quantity</th>
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<th>Total $'s</th>
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<tbody>
<tr>
<td>Rubber Base</td>
<td>5,658.0</td>
<td>LF</td>
<td>7,073</td>
</tr>
<tr>
<td>Sheet Vinyl Flooring</td>
<td>9,342.0</td>
<td>SF</td>
<td>55,118</td>
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<tr>
<td>Sheet Vinyl Flooring - Integral Base</td>
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<td>LF</td>
<td>19,073</td>
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<tr>
<td><strong>Total Resilient Flooring</strong></td>
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<td></td>
<td><strong>83,796</strong></td>
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<tr>
<td>Carpet</td>
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<td></td>
</tr>
<tr>
<td>Carpet Tile - Offices / Workrooms</td>
<td>2,049.0</td>
<td>SY</td>
<td>67,617</td>
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<tr>
<td><strong>Total Carpet</strong></td>
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<td><strong>67,617</strong></td>
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<td><strong>Total Flooring</strong></td>
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<td><strong>151,413</strong></td>
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### Paints, Wallcoverings, & Coatings

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<thead>
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<th>Quantity</th>
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<tr>
<td>Paint Walls</td>
<td>49,230.0</td>
<td>SF</td>
<td>49,230</td>
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<tr>
<td><strong>Total Painting</strong></td>
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<td><strong>49,230</strong></td>
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<tr>
<td>Wall Covering</td>
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<tr>
<td>Vinyl Wall Covering</td>
<td>24,120.0</td>
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<td><strong>Total Wall Covering</strong></td>
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<td><strong>60,300</strong></td>
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<td>Total Paints, Wallcoverings, &amp; Coatings</td>
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<td><strong>109,530</strong></td>
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<td><strong>Total Interior Finishes</strong></td>
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<td><strong>472,907</strong></td>
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### Plumbing

#### Plumbing Systems

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<tbody>
<tr>
<td>Plumbing System - Infrastructure</td>
<td>34,587.0</td>
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<tr>
<td>Upgrades - AHU-S25</td>
<td>34,587.0</td>
<td>GSF</td>
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<tr>
<td>Plumbing System - Infrastructure Upgrades - AHU Option 1</td>
<td>34,587.0</td>
<td>GSF</td>
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<tr>
<td>Plumbing System - Student Health Services</td>
<td>34,587.0</td>
<td>GSF</td>
<td>172,935</td>
</tr>
<tr>
<td>Plumbing System - Rough-In For Future Exam Rooms</td>
<td>12.0</td>
<td>EA</td>
<td>6,000</td>
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<tr>
<td><strong>Total Plumbing Fixtures &amp; Equipment</strong></td>
<td></td>
<td></td>
<td><strong>178,935</strong></td>
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<tr>
<td><strong>Total Plumbing Systems</strong></td>
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#### Gas & Vacuum Systems

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<th>Quantity</th>
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<tr>
<td>Medical Gas System - Student Health Services Not Required</td>
<td>34,587.0</td>
<td>GSF</td>
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<tr>
<td><strong>Total Gas &amp; Vacuum Fixtures &amp; Equipment For Laboratory &amp; Healthcare Facilities</strong></td>
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<tr>
<td><strong>Total Gas &amp; Vacuum Systems</strong></td>
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<td></td>
<td><strong>178,935</strong></td>
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### HVAC
## HVAC

### HEATING, VENTILATING & AIR CONDITIONING

#### HVAC - WET SYSTEMS

<table>
<thead>
<tr>
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<th>QUANTITY</th>
<th>UNIT</th>
<th>TOTAL S$</th>
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</thead>
<tbody>
<tr>
<td>HVAC SYSTEM - WET - INFRASTRUCTURE UPGRADS - AHU-S25</td>
<td>34,587.0</td>
<td>GSF</td>
<td>$0.00</td>
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<tr>
<td>HVAC SYSTEM - WET - INFRASTRUCTURE UPGRADS - AHU OPTION 1</td>
<td>34,587.0</td>
<td>GSF</td>
<td>$0.00</td>
</tr>
<tr>
<td>HVAC SYSTEM - WET - STUDENT HEALTH SERVICES</td>
<td>34,587.0</td>
<td>GSF</td>
<td>7.00</td>
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**TOTAL HVAC - WET SYSTEMS** | 242,109 |

#### HVAC - DRY SYSTEMS

<table>
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<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
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</thead>
<tbody>
<tr>
<td>HVAC SYSTEM - DRY - INFRASTRUCTURE UPGRADS - AHU-S25</td>
<td>34,587.0</td>
<td>GSF</td>
<td>$0.00</td>
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<td>HVAC SYSTEM - DRY - INFRASTRUCTURE UPGRADS - AHU OPTION 1</td>
<td>34,587.0</td>
<td>GSF</td>
<td>$0.00</td>
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<td>HVAC SYSTEM - DRY - STUDENT HEALTH SERVICES</td>
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<td>9.00</td>
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**TOTAL HVAC - DRY SYSTEMS** | 311,283 |

**TOTAL HEATING, VENTILATING & AIR CONDITIONING** | 553,392 |

### HVAC INSTRUMENTATION & CONTROLS

#### TEMPERATURE CONTROL

<table>
<thead>
<tr>
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<th>QUANTITY</th>
<th>UNIT</th>
<th>TOTAL S$</th>
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</thead>
<tbody>
<tr>
<td>TEMPERATURE CONTROL SYSTEM - INFRASTRUCTURE UPGRADS - AHU-S25</td>
<td>34,587.0</td>
<td>GSF</td>
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<td>GSF</td>
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</table>

**TOTAL TEMPERATURE CONTROL** | 138,348 |

**TOTAL HVAC INSTRUMENTATION & CONTROLS** | 138,348 |

**TOTAL HVAC** | 691,740 |

### FIRE PROTECTION

#### FIRE SUPPRESSION SYSTEMS

##### WET-PIPE SPRINKLER SYSTEM

<table>
<thead>
<tr>
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<th>QUANTITY</th>
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</tr>
</thead>
<tbody>
<tr>
<td>FIRE PROTECTION SYSTEM - INFRASTRUCTURE UPGRADS - AHU-S25</td>
<td>34,587.0</td>
<td>GSF</td>
<td>$0.00</td>
</tr>
<tr>
<td>FIRE PROTECTION SYSTEM - INFRASTRUCTURE UPGRADS - AHU OPTION 1</td>
<td>34,587.0</td>
<td>GSF</td>
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<tr>
<td>FIRE PROTECTION SYSTEM - STUDENT HEALTH SERVICES</td>
<td>34,587.0</td>
<td>GSF</td>
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**TOTAL WET-PIPE SPRINKLER SYSTEM** | 25,940 |

**TOTAL FIRE SUPPRESSION SYSTEMS** | 25,940 |

**TOTAL FIRE PROTECTION** | 25,940 |

### ELECTRICAL

#### ELECTRICAL SYSTEMS
### ELECTRICAL

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>POWER &amp; DISTRIBUTION - INFRASTRUCTURE UPGRADES</td>
<td>34,587.0 GSF</td>
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</tr>
<tr>
<td>POWER &amp; DISTRIBUTION - INFRASTRUCTURE UPGRADES - NORMAL POWER OPTION 2</td>
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<tr>
<td>POWER &amp; DISTRIBUTION - INFRASTRUCTURE UPGRADES - EMERGENCY POWER OPTION 2</td>
<td>34,587.0 GSF</td>
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<tr>
<td>POWER &amp; DISTRIBUTION - INFRASTRUCTURE UPDATES - AHU-S25</td>
<td>34,587.0 GSF</td>
<td>7.00</td>
<td>242,109</td>
</tr>
<tr>
<td>POWER &amp; DISTRIBUTION - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWER &amp; DISTRIBUTION - INFRASTRUCTURE UPDATES - AHU OPTION 1</td>
<td>34,587.0 GSF</td>
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</tr>
<tr>
<td><strong>TOTAL POWER &amp; DISTRIBUTION</strong></td>
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<thead>
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<tr>
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<table>
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<tr>
<td><strong>TOTAL ELECTRICAL SYSTEMS</strong></td>
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### SPECIAL SYSTEMS

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<tr>
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<tr>
<td>WIRELESS CLOCKS - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
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<td>25,940</td>
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<td>GROUNDING SYSTEM - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
<td>0.25</td>
<td>8,647</td>
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<tr>
<td>TELECOMMUNICATIONS / DATA - ROUGH IN - STUDENT HEALTH SERVICES</td>
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<td>1.50</td>
<td>51,881</td>
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<td>TELECOMMUNICATIONS / DATA - CABLING - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
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<td>TELECOMMUNICATIONS / DATA - SPECTRALINK EQUIPMENT - STUDENT HEALTH SERVICES</td>
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<tr>
<td>SOUND / PAGING SYSTEMS - ROUGH IN - NOT INCLUDED - STUDENT HEALTH SERVICES</td>
<td>1.0 NIC</td>
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<tr>
<td>SOUND / PAGING SYSTEMS - CABLING &amp; EQUIPMENT - NOT INCLUDED - STUDENT HEALTH SERVICES</td>
<td>1.0 NIC</td>
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</tr>
<tr>
<td>A/V SYSTEMS - ROUGH IN - STUDENT HEALTH SERVICES</td>
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</tr>
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<td>A/V SYSTEMS - CABLING &amp; EQUIPMENT - STUDENT HEALTH SERVICES</td>
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<td>NURSE CALL - ROUGH IN - STUDENT HEALTH SERVICES (INCL. IN CABLING/EQUIPMENT)</td>
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<tr>
<td>NURSE CALL - CABLING &amp; EQUIPMENT - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
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### ELECTRONIC SAFETY & SECURITY

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<tbody>
<tr>
<td>FIRE ALARM SYSTEM - ROUGH IN &amp; INSTALLATION - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
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## ELECTRICAL

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<tbody>
<tr>
<td>FIRE ALARM SYSTEM - EQUIPMENT - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
<td>0.75</td>
<td>25,940</td>
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<tr>
<td>ACCESS CONTROL SYSTEM - ROUGH IN &amp; INSTALLATION - STUDENT HEALTH SERVICES</td>
<td>34,587.0 GSF</td>
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<td>ACCESS CONTROL SYSTEM - EQUIPMENT - STUDENT HEALTH SERVICES</td>
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<td>CCTV SYSTEM - ROUGH IN - STUDENT HEALTH SERVICES</td>
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<td>CCTV SYSTEM - CABLING &amp; EQUIPMENT - NOT INCLUDED - STUDENT HEALTH SERVICES</td>
<td>1.0 NIC</td>
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<td><strong>TOTAL ELECTRONIC SAFETY &amp; SECURITY</strong></td>
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<td><strong>TOTAL SPECIAL SYSTEMS</strong></td>
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<td><strong>TOTAL ELECTRICAL</strong></td>
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## EQUIPMENT

### AUDIO-VISUAL EQUIPMENT

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<tbody>
<tr>
<td>VIDEO PROJECTOR - CEILING-MOUNTED</td>
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<td>EA</td>
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<td>PROJECTION SCREENS, MOTORIZED</td>
<td>3.0</td>
<td>EA</td>
<td>2,138.04</td>
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<td><strong>TOTAL AUDIO-VISUAL EQUIPMENT</strong></td>
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### FOOD SERVICE EQUIPMENT

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<tbody>
<tr>
<td>FOOD SERVICE EQUIPMENT - NOT INCLUDED</td>
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<td><strong>TOTAL FOOD SERVICE EQUIPMENT</strong></td>
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### RESIDENTIAL EQUIPMENT

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<tbody>
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<td>RESIDENTIAL APPLIANCES</td>
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<td><strong>TOTAL RESIDENTIAL EQUIPMENT</strong></td>
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### LABORATORY EQUIPMENT

<table>
<thead>
<tr>
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<th>QUANTITY</th>
<th>UNIT</th>
<th>TOTAL $’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPECIAL LABORATORY EQUIPMENT - NOT INCLUDED</td>
<td>1.0</td>
<td>NIC</td>
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</tr>
<tr>
<td>BIOSAFETY CABINETS - BY OWNER</td>
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<tr>
<td>FUME HOOD - 72&quot;W - CORROSIVE STORAGE CABINET (BELOW HOOD)</td>
<td>1.0</td>
<td>EA</td>
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</tr>
<tr>
<td>FUME HOOD - 72&quot;W - FLAMMABLE STORAGE CABINET (BELOW HOOD)</td>
<td>1.0</td>
<td>EA</td>
<td>12,000.00</td>
</tr>
<tr>
<td>EMERGENCY EYEWASH / SHOWER</td>
<td>1.0</td>
<td>EA</td>
<td>2,500.00</td>
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<tr>
<td><strong>TOTAL LABORATORY EQUIPMENT</strong></td>
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### TOTAL EQUIPMENT

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## FURNISHINGS

### FURNISHINGS

### MANUFACTURED CASEWORK
## ESTIMATE REPORT

### BUDGET ESTIMATE - STUDENT HEALTH SERVICES

**MILWAUKEE, WISCONSIN**

**May 07, 2014**

**Project Qty:** 34587 GSF

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<table>
<thead>
<tr>
<th>DESCRIPTION</th>
<th>QUANTITY</th>
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<th>TOTAL $'s</th>
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<td>Lab Casework</td>
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<td>Pharmacy Casework</td>
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<td>Furniture - Not Included</td>
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<td><strong>DEMOLITION</strong></td>
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<tr>
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<tr>
<td>Saw Cut Pan &amp; Joist Slab - New Stair</td>
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<td>Demolition Dumpsters - New Stair</td>
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<tr>
<td><strong>SITE PREPARATION &amp; EARTHWORK</strong></td>
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<tr>
<td>Demo Planter / Retaining Walls - At Grade Entry</td>
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*STATE OF WISCONSIN*

*UWM NW QUADRANT REDEVELOPMENT - DSF PROJECT #11K3C*
### BUDGET ESTIMATE - STUDENT HEALTH SERVICES

**MILWAUKEE, WISCONSIN**

**May 07, 2014**

**Project Qty:** 34587 GSF

#### SITE PREPARATION

<table>
<thead>
<tr>
<th>DESCRIPTION</th>
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<th>UNIT</th>
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**TOTAL SITE PREPARATION & EARTHWORK**

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#### SITE IMPROVEMENTS & AMENITIES

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**TOTAL PLANTS, SHRUBS, & TREES**

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**TOTAL LANDSCAPING & IRRIGATION**

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#### METAL FABRICATIONS

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**TOTAL METAL FABRICATIONS**

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13 08E 110 UWM NWQ Student Health Center.est Page 10
### SITE IMPROVEMENTS

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### GENERAL REQUIREMENTS

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### ESTIMATE TOTALS

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