**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT**

**Chemistry Building Instructional Addition & Renovation**
**University of Wisconsin – Madison**
**DFD Project #13B3G**

Prepared for

**State of Wisconsin**
**Department of Administration**
**Division of Facilities Development**

**February 2016**

Prepared by

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**GRAEF Project No. 2015-0391.00**

**Chemistry Building Addition & Renovation**
**Draft Environmental Impact Assessment**

**University of Wisconsin – Madison**
**DFD Project #13B3G**

Prepared for:

Department of Administration
Division of Facilities Development
101 E. Wilson Street
P.O. Box 53707

and

UW System Administration
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Site Address:

UW-Madison Chemistry Complex
1101 University Ave
Madison, WI 53706

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## EXECUTIVE SUMMARY

### General

The State of Wisconsin's Department of Administration, Division of Facilities Development has retained GRAEF-USA to prepare an Environmental Impact Assessment (EIA) for the proposed Chemistry Building Instructional Addition and Renovation at 1101 University Avenue, Madison, WI. The EIA is required by the University of Wisconsin System guidelines in compliance with the Wisconsin Environmental Policy Act (WEPA). The purpose of the EIA is to assess the potential environmental effects of the proposed project relative to the quality of the human environment. The Division of Facilities Development is the EIA project manager.

### General Project Description

The project will remove the north, 2-story portion of the existing Daniels Chemistry Building (18,305 ASF/39,812 GSF). The existing 3,500 GSF house at 1121 University Avenue adjacent to the Wellesley Foundation Chapel at 1127 University Avenue will be removed. The east face of the chapel's exterior wall will be repaired. A new 10-story building will be constructed with two subgrade floors, eight above grade and a penthouse. The new building will house instructional laboratories for organic and analytical chemistry, as well as new lecture rooms (65,250 ASF/170,015 GSF). The penthouse will contain the buildings mechanical systems as well as replacement equipment for the old towers. The lower three floors of the existing Daniels Chemistry Building Tower will be renovated and backfilled for instructional laboratories for general chemistry (30,520 ASF/55,008 GSF). The air handling units will be replaced in the Daniels building as well. The entire heat recovery and laboratory fume hood exhaust fan system for the Daniels and Mathews buildings will be replaced.

Funding for this $111.9 million project is being provided through general fund supported borrowing and gifts, grants and institutional funds. The current schedule targets April 2017 to begin construction of the new tower with substantial completion anticipated by May 2019. The schedule targets August 2019 for the start of the Daniels Building renovation with substantial completion anticipated by June 2020.

### EIA Process

The EIA process began with a Kickoff Meeting held on December 18, 2016 for the EIA team members. The meeting included an overview of the project and identified potential environmental impacts. A copy of the Kickoff Meeting minutes can be found in Appendix F. A scoping letter was sent to possible interested parties on February 8, 2016 to solicit input on potential environmental impacts. A distribution list is included in Appendix H.

A public notice will be posted in the Wisconsin State Journal on March 30, 2016 to advertise the availability of the Draft EIA report. The Draft EIA will be made available for public review on March 30, 2016 at the UW-Madison Library (Helen C. White University Library), the Madison Public Library and online at http://notices.graef-usa.com/uwchemistry/. A public input meeting on the DEIA is scheduled to be held on April 14, 2016 which will also be the last day to receive comments for incorporation into the final document. The public notice proof of publication affidavits can be found in Appendix G.

Based on the findings of the Draft EIA and public comments, a recommendation will be made whether further investigation is warranted, or a Finding of No Significant Impact (FONSI) will be issued.

**DRAFT ENVIRONMENTAL IMPACT ASSESSMENT**
**TYPE II ACTION WORKSHEET**

UNIVERSITY OF WISCONSIN SYSTEM
WISCONSIN ENVIRONMENTAL POLICY ACT

## I. DESCRIPTION OF PROPOSED ACTION

A. Title of Proposal: Chemistry Building Instructional Addition & Renovation
University of Wisconsin - Madison
Project DFD #13B3G

B. Location: UW-Madison Chemistry Complex
1101 University Ave
Madison, WI 53706

County: Dane County

Political Town: City of Madison

C. Project: Define Proposed Action

1. Description (type of facility or action): The project will remove the north, 2-story portion of the existing Daniels Chemistry Building (18,305 ASF/39,812 GSF). The existing 3,500 GSF house at 1121 University Avenue adjacent to the Wellesley Foundation Chapel at 1127 University Avenue will be removed. The east face of the chapel's exterior wall will be repaired. A new 10-story building will be constructed with two subgrade floors, eight above grade and a penthouse. The new building will house instructional laboratories for organic and analytical chemistry, as well as new lecture rooms (65,250 ASF/170,015 GSF). The penthouse will contain the buildings mechanical systems as well as replacement equipment for the old towers. The lower three floors of the existing Daniels Building will be renovated and backfilled for instructional laboratories for general chemistry (30,520 ASF/55,008 GSF). The air handling units will be replaced in the Daniels building as well. The entire heat recovery and laboratory fume hood exhaust fan system for the Daniels and Mathews buildings will be replaced.

   The current schedule targets April 2017 to begin construction of the new tower with substantial completion anticipated by May 2019. The Daniels Building renovations are scheduled to start August 2019 with substantial completion by June 2020.

2. Purpose and Need (brief statement of project objective, history & background): The university has addressed its immediate research needs in recent years with the completion of the Shain Research Tower, but has had to make do with the inadequate capacity of the older Chemistry

buildings for its instruction programs for at least six biennial capital budget cycles. Limitations of the current chemistry buildings include inadequate capacity to handle substantial enrollment increases in undergraduate chemistry courses making it difficult for freshmen and sophomores to enroll in introductory chemistry courses, inadequate infrastructure to implement modern safety practices and obsolete mechanical systems. The department has investigated undesirable options to address facility needs off-site and has already implemented undesirable changes to pedagogy in order to deal with the lack of space. The acquisition of a parcel of land in 2009 immediately west of the existing Daniels building has provided a site that has enough capacity, with demolition of a portion of the Daniels building, for an addition that will improve the quality and quantity of chemistry instructional space to meet the universities growing demand for chemistry instructional programs.

D. Estimated Cost and Funding Source:

The total project budget is $111,900,000. Funding will be provided by general fund supported borrowing, gifts, grants and institutional funds.

Project Budget Summary:

| | |
|---|---|
| General Construction | $ 97,694,541 |
| A/E Fees | $ 6,844,092 |
| Design and Supervision | $ 11,487,111 |
| Other Fees | $ 19,700 |
| Equipment | $ 2,718,348 |
| Estimated Total Project Cost | $111,900,000 |

E. Time Schedule:

| | |
|---|---|
| BOR/SBC Approval | May 2016 |
| Bid Date (new tower) | January 2017 |
| Start Construction (new tower) | April 2017 |
| Substantial Completion (new tower) | May 2019 |
| Occupancy (new tower) | August 2019 |
| Bid Date (renovation) | May 2019 |
| Start Construction (renovation) | August 2019 |
| Substantial Completion (renovation) | June 2020 |
| Occupancy (renovation) | August 2020 |

## II. EXISTING ENVIRONMENT

A. Physical (Topography - soils - air wetland types):

The existing project site is currently occupied by the Daniels Building, the Mathews Building, the Shain Tower and a campus Christian Center. The buildings occupy the majority of space in the Project Site. The rest of the space is comprised of a parking lot and manicured lawn, with ornamental trees, between buildings. The soil survey of Dane County identifies the near surface soils within the project site as Dodge silt loam 2 to 6 percent slopes (DnB) and Batavia silt loam, gravelly substratum, 0 to 2 percent slopes

(BbA). Both are classified as well-drained, non-hydric soils. See the NRCS Soil Survey map located in Appendix E.

The existing grades are relatively flat. The site gently slopes from approximately 885 ft above mean sea level in the northwest to approximately 875 ft above mean sea level in the southeast.

According to the Wisconsin Wetland Inventory (Figure 3), no wetlands are located within the Project Site. There are no WWI mapped wetlands immediately adjacent to the Project Site either. The area is heavily developed.

The project site is located in the Yahara River and Lake Monona Watersheds. The FEMA Flood Insurance Rate Map (FIRM) indicates the site is not located within a regulatory floodplain (Figure 4).

The existing chemistry complex is comprised of three connected buildings. The buildings that make up the complex include the Mathews building constructed in 1962, the Daniels building constructed in 1967 and the Shain Research Tower constructed in 2000. The existing complex (224,180 ASF / 409,079 GSF) houses all administrative, instructional and research functions of the Department of Chemistry in addition to a Chemistry Library and Learning Center. The Mathews and Daniels buildings (70,061 ASF) house the undergraduate instructional facilities. Of this, teaching labs and teaching lab support space occupies 34,298 ASF, undergraduate support areas (library, computer labs, study areas) 13,819 ASF, office space 8,686 ASF, lecture halls 7,672 ASF and classrooms 6,521 ASF.

No major renovations have taken place since the construction of the existing undergraduate laboratory facilities. The safety and hygiene systems in the current labs were designed to meet the standards of safety 40 years ago. Safety and hygiene standards have changed since then resulting in the existing facilities to be inadequate to today's standards. Inadequacies primarily relate to insufficient ventilation and total space available per student.

The HVAC equipment of the Mathews and Daniels buildings is dilapidated and failure prone. The system has very poor energy efficiency and cannot be properly serviced. The heat recovery system serving nearly all of the Mathews and Daniels buildings is non-functional and non-serviceable. The Division of State facilities and UW-Physical Plant has recognized the need for renovation, but it has not been possible to devise a plant to renovate the system without shutting down the building for at least one year. However, renovation is possible without crippling the chemistry program for the renovation duration if performed after the occupation of the proposed new building addition.

B. Biological:

1. Flora

The majority of the Project Area is occupied by buildings and parking lot. The only natural environment consists of manicured turf lawn with a few ornamental trees. An Endangered Resources Review (Appendix C) was conducted by the WDNR and found that the project activities will have no or minimal impact to threatened or endangered flora. The U.S. Fish and Wild Life Service IPaC Trust Resource online tool was used to identify any federally listed threatened and endangered flora within the Study Area. The report indicates that no critical habitat exists within the Study Area, but does list some threatened species of flora that could potentially be present in this region of Wisconsin. However, there is no suitable habitat within the Project Site.

2. Fauna

Fauna anticipated to utilize the open space within the project area include small mammals (i.e., mice, chipmunks, etc), birds, and insects. The project site is too small to support larger wildlife species. An Endangered Resources Review (Appendix C) conducted by the WDNR found that the project activities will have no or minimal impact to threatened or endangered fauna. The U.S. Fish and Wild Life Service IPaC Trust Resource online tool was used to identify any federally listed threatened and endangered fauna within the Study Area. The report indicates that no critical habitat exists within the Study Area, but does list some threatened and endangered species as well as migratory bird species of conservation concern that could potentially be present in this region of Wisconsin in an area where suitable habitat exists. However, suitable habitat does not exist within our project area.

C. Social:

The University of Wisconsin System is a statewide network of thirteen four-year universities; thirteen freshman and sophomore transfer colleges, and an extension service. UW–Madison is the oldest and largest campus and is one of two doctorate-granting universities in the system. UW-Madison was formally created in 1848 and held the first class in February of 1849[1]. Today, UW–Madison's specific mission is to provide "a learning environment in which faculty, staff and students can discover, examine critically, preserve and transmit the knowledge, wisdom and values that will help insure the survival of this and future generations and improve the quality of life for all."

"The mission of the Department of Chemistry at the University of Wisconsin-Madison is to conduct world-class, groundbreaking research in the chemical sciences while offering the highest quality of education to undergraduate students". The chemistry doctoral program was ranked in the top ten doctoral chemistry programs in the nation. The Department of Chemistry as a whole ranked ninth among all U.S. programs in the most recent (2014) U.S. New & World Report ranking. U.S. News also ranked all five graduate paths in the UW-Madison chemistry department among the top 10 in their respective discipline in the nation, which include analytical chemistry, chemical biology, inorganic chemistry, organic chemistry and physical chemistry.

The programs quality and high rankings attracts undergraduate and graduate students, faculty, postdoctoral associates and visiting scholars from around the world. The chemistry department is continuing to grow as enrollment in undergraduate chemistry courses rise. However, the older chemistry buildings are having trouble keeping up due to limitations caused by an inadequate capacity to handle the enrollment increases, inadequate infrastructure to implement modern safety practices and obsolescence of older buildings existing mechanical systems.

The number of students enrolled in undergraduate chemistry courses per year has doubled from 1989 to 2008. Currently over 10,000 students take chemistry courses each year. Fifty five percent of entering freshmen take a chemistry course during their undergraduate career. Inadequate lecture space in the current buildings has led to over enrollment of students in the assumption that some students will drop and some will not attend lecture. Many of the lecture halls have not been updated since they were built in the late sixties and are cramped with poor lines of site to the front of the room. The lack of lab space to meet the current demand of enrollment has led to the development of a backlog of students not able to enroll due to inadequate space. Sophomore courses are now

[1] http://www.wisc.edu/about/history/

primarily composed of juniors and seniors who had to wait an extra semester or year to be placed into their lab courses. Lab courses are often taken a semester or year behind the lectures that they are designed to supplement due to the inability to meet the enrollment demands, because of a lack of space. This reduces the effectiveness of the labs and lectures which the labs are meant to supplement. In order to alleviate issues inadequate lab space issues some labs courses which are designed to be held once a week are held bi-weekly. This leads to reductions in the efficiency and quality of the program as well. More space and modern infrastructure is needed to keep up with the growing demand and enrollment in undergraduate chemistry courses.

D. Economic:

The chemistry doctoral program was ranked in the top ten doctoral chemistry programs in the nation. The Department of Chemistry as a whole ranked ninth among all U.S. programs in the most recent (2014) U.S. New & World Report ranking with all five graduate paths in the UW-chemistry department among the top 10 in their respective discipline in the nation. The programs quality and high rankings attracts undergraduate and graduate students, faculty, postdoctoral associates and visiting scholars from around the world. In 2012 the university surpassed $1.16 billion in research spending.

The number of students enrolled in undergraduate chemistry courses per year has doubled from 1989 to 2008. Currently over 10,000 students take chemistry courses each year. Fifty five percent of entering freshmen take a chemistry course during their undergraduate career. Cost of undergraduate chemistry course credit hours provides significant income to the university.

E. Other (include archaeological, historical, etc.):

(Review of the Archaeological Site Inventory and Architecture History Inventory to be Conducted)

## III. PROPOSED ENVIRONMENTAL CHANGE

A. Manipulation of Terrestrial Resources (include quantities --sq. ft., cu. yds., etc.):

Before construction, sediment and erosion control practices will be installed per the specifications of the approved erosion control plan and are to remain in place throughout all phases of construction. Site preparation includes removing all topsoil from the proposed improvement areas and at planned elevations changes. Existing vegetation will be removed to the least extent necessary to perform construction and grading.

Earthwork associated with the project will include excavation for building construction, utilities and grading in the area for construction of the new building. Fills required for the building include earth fills, granular fills, structural fills and topsoils. All of which are defined in the WisDOT Standard Specifications for Highway Construction Material.

Site removals also include sanitary sewer lateral, storm sewer lateral, concrete and parking lot pavement to the extents of project.

(Shading Study to be Conducted)

B. Manipulation of Aquatic Resources (include quantities --cfs, acre feet, MGD, etc.):

The storm water management plan is under development and is based on the conservative assumption that the entire site will be impervious. The intent of the plan is that the peak storm water runoff for the proposed conditions will match the peak storm water runoff for the existing conditions under the 2 and 10 year storm events, and that the site will safely pass the 100-year storm event

C. Structures:

The north, two story lecture hall wing of the existing Daniels Chemistry building (18,305 ASF/39,812 GSF) is to be removed in order to accommodate the new 10-story chemistry tower (65,250 ASF/170,015 GSF). The 3,500 GSF house at 1121 University Avenue adjacent to the Wellesley Foundation Chapel will be removed as well to make room for the new tower. The east face of the chapel's exterior wall will be repaired. The lower three floors of the existing Daniels Building will be renovated and backfilled for instructional laboratories for general chemistry (30,520 ASF/55,008 GSF). The new tower will have two subgrade floors, eight above grade and a penthouse to house the buildings mechanical systems. The new tower will be 107 feet above University Avenue to the main roof, 139 feet to the top of the roof of the penthouse and 142 feet to the top of the entire structure, including the parapet. This is comparable to the Shain tower which is 143 feet above University Avenue and other nearby high rises in the area which include the X01 and the Grand Central apartment building. The new tower will front University Avenue and have a main entrance off Mills Street on the east side. The existing and new towers will have a CMU wall to provide the required fire barrier between buildings as well as a separation joint of at least 6 inches to provide a few inches of movement.

The new tower will house two lecture halls in the sub-basement. A multi-purpose teaching room will be located at the first floor. A chemistry information commons with group study rooms will be at the second floor as well as three classrooms large enough to seat 30 students. Two organic chemistry labs and one advanced organic / inorganic chemistry lab will be located on the fifth floor. Two organic chemistry labs and one advanced organic chemistry lab will be on the sixth floor. On the seventh floor will be three analytical chemistry labs. There will be a pair of write-up rooms adjacent to each lab in the new tower. The fourth and eighth floors of the new tower will be shelled space for future chemistry labs. Six general chemistry labs and twelve adjacent write-up rooms will be located in the renovated, three story portion of the Daniels building.

Campus steam and chilled water will be connected to the new tower to serve the heating and cooling loads in the building. The existing process cooling water system will be expanded from the Shain tower to the new tower to serve the process cooling loads. A glycol run around system will be provided to circulate water between heat recovery and air handling units. A dedicated air outside handling unit with heat recovery wheel will supply outside air to three air handling units serving the large lecture halls in the lower levels of the tower. The rest of the new tower will be served by a combine supply air system with three air handling units. A return fan will return air to the air handling units from the non-laboratory spaces. The existing air handling units in the upper levels of the Daniels Building will be demolished and two new air handling units will be installed in the new tower's penthouse to serve the Daniels and Mathews buildings upper levels. The existing air handling unit in the basement level of the Daniels building will be replaced with a new unit. A new laboratory exhaust system will be installed on the roof of the new tower.

The new tower's penthouse will house the normal power electrical system consisting of two substations transformers and distribution equipment. The system is to receive power from the UW

Campus 13.8kV power grid and will serve the new tower as well as some specific mechanical loads in the Mathews and Daniels buildings. The emergency power electrical system located in the Daniels sub-basement will be removed and a new diesel generator, transfer switches and distribution equipment will be located in the basement of the new tower. The system will serve the new tower as well as some specific mechanical loads in the existing Mathews and Daniels buildings. The lighting system will consist of LED fixtures with lighting controls with occupancy and time of day sensors to conserve energy.

D. Other:

- City of Madison site plan approval was received.
- There will be less than one acre of land disturbance and the facility is exempt from the requirements of Wisconsin Administrative Code NR216.
- No local building permit is needed.

E. Attach maps, plans, photographs and other descriptive material.

Figure 1: General Site Map
Figure 2: USGS Map
Figure 3: WDNR wetland inventory map
Figure 4: FEMA FIRMette
Appendix C: Preliminary Project Plans
Appendix D: WDNR Endangered Resource Review
Appendix E: NRCS Soil Survey
Appendix F: Wisconsin State Historical Societies inventory of significant sites

## IV. PROBABLE ADVERSE AND BENEFICIAL IMPACTS (Include Indirect and Secondary Impacts)

A. Physical Impacts:

No long-term adverse impacts are expected as a result of this project. The storm water management plan is based on the conservative assumption that the entire site will be impervious. However, the intent of the plan is that the peak storm water runoff for the proposed conditions will match the peak storm water runoff for the existing conditions under the 2 and 10 year storm events, and that the site will safely pass the 100-year storm event.

Air will be minimally impacted during the construction. Site excavation and grading, building construction, and utility connections are expected to create dust as well as gasoline and diesel emissions from equipment. Noise generation will be in accordance with the City of Madison. Construction materials such as concrete will be recycled to the greatest extent possible. The remaining materials will be taken to a construction debris landfill. There will be temporary outages during construction as a result of the relocation and connection to existing utilities.

B. Biological Impacts:

No adverse biological impacts are expected. Much of the construction of the new tower will be in the space currently occupied by the north, two story portion of the Daniels building that is to be removed. Some landscaping trees will be removed, but the open areas will be re-landscaped as part of the project. No irrigation will be required. Water quality impacts and construction dust will be controlled through the use of construction Best Management Practices.

C. Socioeconomic Impacts:

1. Social

UW-Madison's chemistry program continually ranks in the nation's top ten. The number of students enrolled in undergraduate chemistry courses per year has doubled from 1989 to 2008. Currently over 10,000 students take chemistry courses each year. Fifty five percent of entering freshmen take a chemistry course during their undergraduate career. The new tower and Daniels building renovations will address the limitations and inadequacies of the current chemistry complex facilities which include outdated safety infrastructure in labs, lack of sufficient laboratory space, overcrowded lecture halls and failing mechanical equipment.

The addition and renovation will add lecture and laboratory space large enough to meet the current demand for undergraduate chemistry courses. Adequate lecture space will be created to accommodate the current demand with room for potential growth. This will address the current issues of over enrollment of student's undergraduate chemistry courses.
The new lab spaces will provide enough space to meet current enrollment needs with room for projected increased enrollment. This will eliminate the backlog of students who must wait an additional semester or longer to be placed in lab courses. This will also ensure that lab courses are taken in conjunction with the relevant lectures. Labs that are currently held bi-weekly will also be able to be held weekly. Additionally, the new labs will be fitted with modern safety infrastructure to provide a safe learning environment for students which meet today's safety standards. These changes serve to increase the quality and efficiency of one of the nation's top ten chemistry programs in the country.

2. Economic

The estimated total project cost is $111.9 million which will be funded through general fund supported borrowing and gifts, grants and institutional funds. The direct adverse economic impacts include the initial expenditure for the construction of the project and an estimated increase in annual operation and maintenance costs attributed to the increase in building square footage. At this time there is no decision regarding whether additional staff will be needed. However, staffing may need to be temporarily increased to move the materials to the new facility.

The initial project expenditures will benefit employees in construction and related industries. The portion of the total project cost that contributes to construction wages is expected to have a multiplied economic benefit. Based on a 2011 study titled *The Impact of Construction on the Wisconsin Economy*, every $1 million spent directly on construction projects generates 17 jobs throughout the economy. These include construction jobs and indirect jobs, such as service sector employment created by the economic activity of the construction workers. Based on that information, this project is estimated to create approximately 1,902 temporary jobs for the duration of the construction project. Additionally, the same study indicates that every $1 spent directly on construction projects produces an overall economic impact of approximately $1.92. Using the 1.92 multiplier to forecast economic impact, the estimated cost of $111.9 million could result in stimulating approximately $214.8 million in activity related to employment, purchases of supplies, and services.

D. Sustainability Features (Also indicate whether LEED Certification is being pursued.):

LEED certification will be pursued for the new tower portion of the addition and renovation. It will seek to achieve the UW-Madison campus wide sustainability goal of LEED Silver.

E. Cumulative Impacts:

The new chemistry tower is designed in a way to allow for future expansion south of the new tower, just north of the Mathews building. This may encourage and facilitate future expansion of the chemistry complex.

F. Other (Include archaeological, historical, etc.) (If none, so indicate):

(Review of the Archaeological Site Inventory and Architecture History Inventory to be Conducted)

## V. PROBABLE ADVERSE IMPACTS THAT CANNOT BE AVOIDED

Adverse impacts include a one-time financial commitment of approximately $111.9 million and the use of resources associated with construction of the new facility. Construction noise and dust during demolition will temporarily affect the surrounding area. The demolition debris, to the extent that it is not recycled, will use landfill space. There will be parking losses attributed to construction staging.

There will be temporary relocation of classes during construction. Many of the labs will be held in the Medical Science Center with lectures held at various other locations on campus. Offices will have to be temporarily relocated as well. There will be temporary closures of streets and sidewalks during construction. The west parking lane and west sidewalk on Mill Street will be closed with a loss of metered parking and a bus stop. The bus stop will be temporarily relocated. There will be a loss of some of the parking stalls in Lot 55, some of which will be lost permanently. The east bound bike lane on University Avenue will be temporarily closed and the sidewalk covered for pedestrian safety. The east side of Charter Street may experience short term lane and sidewalk closure for utility trenching with plates used over trenches as needed. Johnson Street is not anticipated to be significantly affected during the project.

## VI. RELATIONSHIP BETWEEN SHORT - TERM USES OF THE ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG - TERM PRODUCTIVITY

In the short term there will be adverse impacts associated with construction noise and dust during demolition. There will be a temporary increase in heavy vehicle traffic during portions of the construction. Positive short-term impacts include an increase in employment and associated expenditures relating to the construction of the facility that will benefit the local economy.

The long-term benefits include ability for the UW-Madison chemistry program to satisfy the unmet demands and needs of students. Overall, the short-term impacts to the environment will lead to the enhancement of the long-term productivity of the university.

## VII. IRREVERSIBLE OR IRRETRIEVABLE COMMITMENTS OF RESOURCES IF ACTION IS IMPLEMENTED

A. Energy:

The energy used to complete the project will be generated using standard fuel and materials and is irretrievable. Recycling of any materials generated as a result of the minor demolition will be implemented where possible. Electricity and heating demands will increase due to the increase in building square footage associated with the new tower. However, the mechanical systems are to be upgraded including the heat recovery system of the older Mathews and Daniels buildings and the new tower will seek to achieve LEED Silver certification.

B. Archaeological and historic features or sites:

(Review of the Archaeological Site Inventory and Architecture History Inventory to be Conducted)

C. Other: none

## VIII. ALTERNATIVES: (No Action-Enlarge-Reduce-Modify-Other Locations and/or Methods. Discuss and describe fully with particular attention to alternatives which might avoid some or all adverse environmental effects.)

ALTERNATIVE 1: No action:

The No Action alternative would eliminate the one-time expenditure of $111.9 million for the project, but would not accomplish the goals of the chemistry complex instructional addition and renovation to meet the demand of undergraduate chemistry course enrollment.

ALTERNATIVE 2: Expand Into Existing Medical Sciences Center Complex:

The next best alternative to the proposed project was to expand undergraduate chemistry courses and labs into the Medical Sciences Center Complex. However, the possible configurations did not allow for adequate space needed to meet the enrollment requirements of the chemistry program, but would cost 80%-90% of the proposed project budget.

## IX. EVALUATION (Discuss each category. Attach additional sheets and other pertinent information if necessary)

A. As a result of this action, is it likely that other events or actions will happen which may significantly affect the environment? If so, list and discuss. (Secondary effects)

The university will continually address the chemistry program needs to accommodate increasing chemistry course enrollment rates. The implementation of this project facilitates expansion within the same block if needed, which would minimally impact the environment.

B. Does the action alter the environment so a new physical, biological, or socioeconomic environment would exist? (New environmental effect)

The chemistry complex instructional addition and renovation will slightly increase the density in the immediate area as well as construct a new high-rise comparable in height to the existing Shain

Tower. Renovation and replacement of much of the HVAC system will improve system efficiency and reliability of the currently dilapidated equipment. The project will have a profound effect on the chemistry programs quality and efficiency of education while allowing it to effectively accommodate the current and increasing demand for chemistry course enrollment. The updated lab safety infrastructure provides a safer environment as well.

C. Are the existing environmental features which would be affected by the proposed action scarce, either locally or statewide? If so, list and describe. (Geographically scarce)

No scarce environmental features exist that would be affected by the proposed action.

D. Does the action and its effects require a decision which would result in influencing future decision? Describe. Is the decision precedent setting?

The project could impact future decisions regarding campus planning. The implementation of this project may facilitate future expansion of the chemistry complex at this site to accommodate future needs. This will also alleviate demand the need to potentially develop other areas of the campus for the Chemistry Program.

E. Discuss and describe concerns which indicate a serious controversy? (Highly controversial)

No concerns regarding a serious controversy have been identified with this project.

F. Does the action conflict with official agency plans or with any local, state or national policy? If so, how? (Is the action inconsistent with long-range plans or policies)

The project is in agreement with the Campus Master Plan and does not conflict with local, state, or national policy.

G. While the action by itself may be limited in scope, would repeated actions of this type result in major or significant impacts to the environment? (Cumulative impacts)

Additional projects in similarly developed areas would have a limited impact on the amount of impervious surface and these impacts would be further reduced due to the required application of storm water Best Management Practices. Similar actions would increase the density of use on campus that in turn might require impacts to transportation infrastructure. However, this same increase in density could make transportation more efficient by improving the efficiency of public transit and pedestrian movement.

H. Will the action modify or destroy any historical, scientific or archaeological site?

(Review of the Archaeological Site Inventory and Architecture History Inventory to be Conducted)

I. Is the action irreversible? Will it commit a resource for the foreseeable future? (Does it foreclose future options?)

The project is reversible, but it does consume materials and financial resources that could not be recovered without an investment in labor and financial resources. Other committed resources include electricity, natural gas, and water.

J. Will action result in direct or indirect impacts on ethnic or cultural groups or alter social patterns? (Social-cultural impacts)

No adverse impacts are expected.

K. Other: none

## X. LIST OF AGENCIES, GROUPS AND INDIVIDUALS CONTACTED REGARDING THIS PROJECT

(Include UW System and University Personnel and Title)

SEE APPENDIX H FOR DISTRIBUTION LIST

| RECOMMENDATION (to be completed by UWSA staff only) |
|---|
| EIS Not Required..... O<br>*Analysis of the expected impact of this proposal is of sufficient scope and detail to conclude that this is not a major action which would significantly affect the quality of the human environment. In my opinion therefore, an environmental impact statement is not required before the board undertakes this action.*<br><br>Major and Significant Action: PREPARE EIS..... O |

Additional factors, if any, affecting the evaluator's recommendation:

| CERTIFIED TO BE IN COMPLIANCE WITH WEPA -<br>Public Notice Completed (include copy of public notice for permanent record) | |
|---|---|
| Campus WEPA Director | Date: |

| Approved | |
|---|---|
| UW System Environmental Affairs Officer | Date: |

This decision is not final until approved by the appropriate Director.
Regent Resolution 2508
11/06/81 format revised 10/2011

# APPENDICES

# APPENDIX A

# Figures


# CHEMISTRY BUILDING
# INSTRUCTIONAL ADDITION & RENOVATION
## SITE LOCATION - DFD PROJECT # 13B36

UW-MADISON, CITY OF MADISON
DANE CO., WISCONSIN

FIGURE # 1

GRAEF

Path: O:\Proj\Jobs2015\2015039 1\GIS\Map\Site_Location.mxd
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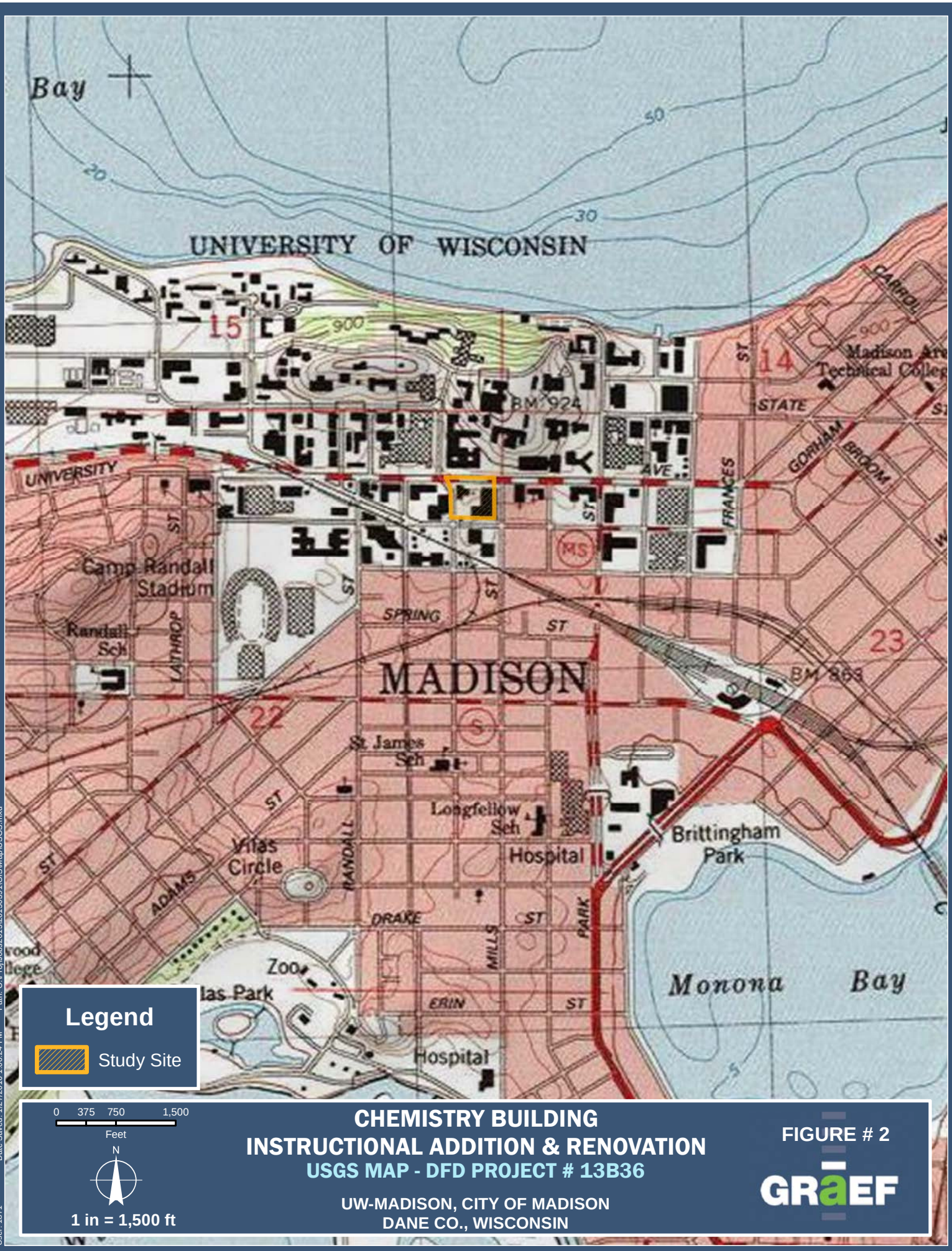
User: 1871

Proj. Number: 2015-0391.00 Source: WROC 2010


Bay
UNIVERSITY OF WISCONSIN
MADISON
Camp Randall Stadium
Randall Sch
St. James Sch
Longfellow Sch
Hospital
Vilas Circle
Zoo
Brittingham Park
Monona Bay
UNIVERSITY
STATE
GORHAM
BROOM
FRANCES
SPRING
DRAKE
ERIN
ADAMS
RANDALL
MILLS
PARK
LATHROP
BM 924
BM 863
Madison Area Technical College
Legend
Study Site
0 375 750 1,500
Feet
N
1 in = 1,500 ft
CHEMISTRY BUILDING
INSTRUCTIONAL ADDITION & RENOVATION
USGS MAP - DFD PROJECT # 13B36
UW-MADISON, CITY OF MADISON
DANE CO., WISCONSIN
FIGURE # 2
GRAEF
Path: O:\Proj\Jobs2015\2015039\1\GIS\Map\USGS.mxd
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User: 1871
Proj. Number: 2015-0391.00
Source: WROC 2010


**Legend**

- Study Site
- Soil Unit

| Map Unit Name | Map Symbol | Hydric Classification |
|---|---|---|
| Batavia silt loam, gravelly substratum, 0 to 2 percent slopes | BbA | Not Hydric |
| Dodge silt loam, 2 to 6 percent slopes | DnB | Not Hydric |

0 75 150 300
Feet

N

1 in = 300 ft

# CHEMISTRY BUILDING
# INSTRUCTIONAL ADDITION & RENOVATION
## SOIL MAP - DFD PROJECT # 13B36

UW-MADISON, CITY OF MADISON
DANE CO., WISCONSIN

FIGURE # 3

GRAEF

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Proj. Number: 2015-0391.00 Source: WROC 2010


# CHEMISTRY BUILDING
# INSTRUCTIONAL ADDITION & RENOVATION
## WETLAND MAP - DFD PROJECT # 13B36

**UW-MADISON, CITY OF MADISON**
**DANE CO., WISCONSIN**

**FIGURE # 4**

GRAEF

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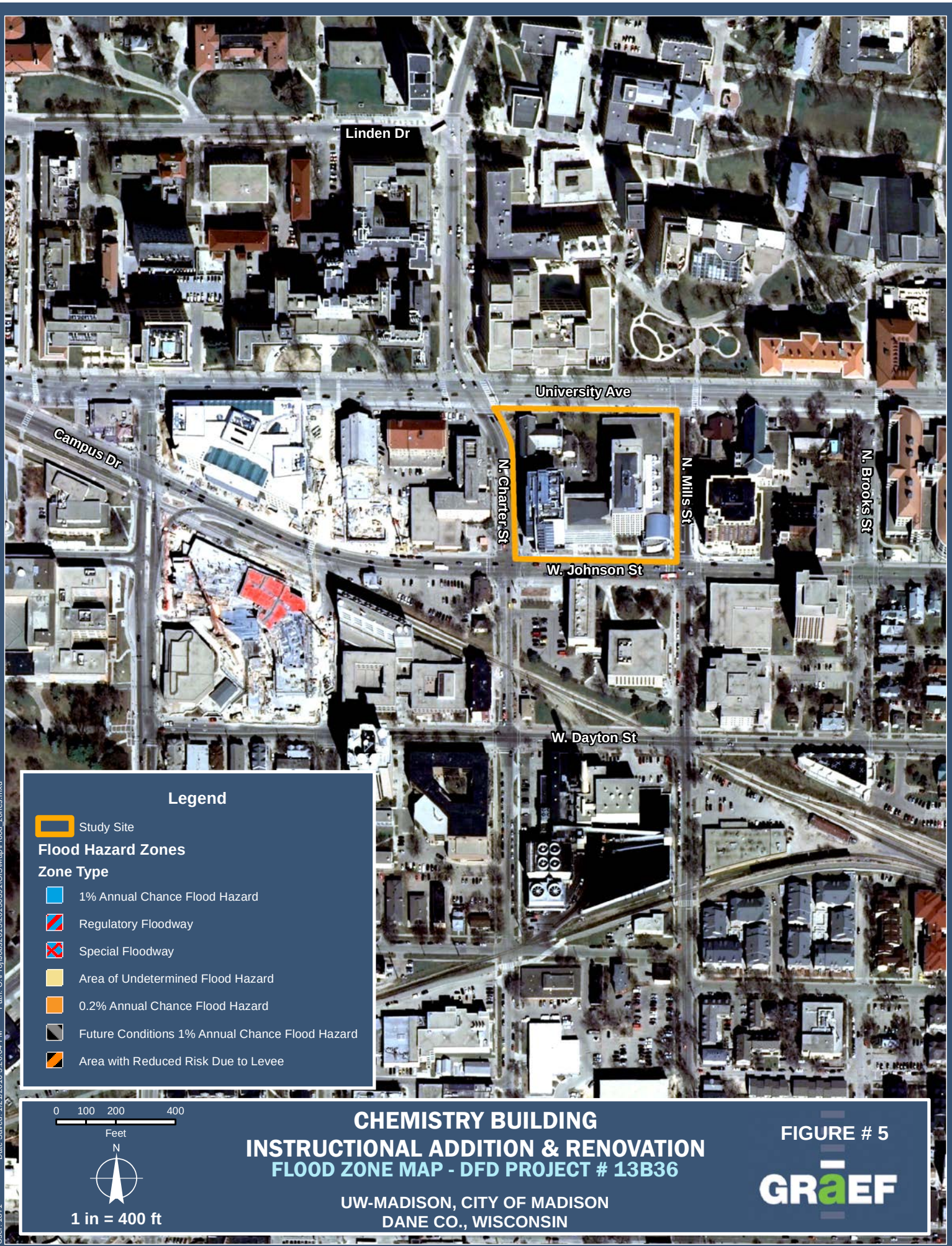
Proj. Number: 2015-0391.00
Source: WROC 2010




# CHEMISTRY BUILDING
# INSTRUCTIONAL ADDITION & RENOVATION
## FLOOD ZONE MAP - DFD PROJECT # 13B36

UW-MADISON, CITY OF MADISON
DANE CO., WISCONSIN

FIGURE # 5

GRAEF

Date Saved: 1/21/2016 3:26:04 PM Path: O:\Proj\Jobs2015\2015039 1\GIS\Map\Flood_zones.mxd
User: 1871

Proj. Number: 2015-0391.00 Source: WROC 2010

GRĀEF

collaborāte / formulāte / innovāte

# APPENDIX B

# Preliminary Project Plans

CHEMISTRY BUILDING ADDITION AND RENOVATION

UNIVERSITY OF WISCONSIN - MADISON CAMPUS

# PRE-DESIGN REPORT

**PREPARED FOR:**

WISCONSIN DEPARTMENT OF ADMINISTRATION

DIVISION OF FACILITIES DEVELOPMENT

UNIVERSITY OF WISCONSIN MADISON

DFD Project No. 13B3G

Strang Project No. 2014093
Ballinger Project No. 14088.00

November 05, 2015

STRANG BALLINGER

November 05, 2015

RUSS VAN GILDER
WISCONSIN DEPARTMENT OF ADMINISTRATION
101 E WILSON STREET - 7th FLOOR (53703)
P.O. BOX 7866
MADISON, WI 53707-7866

Dear Russ:

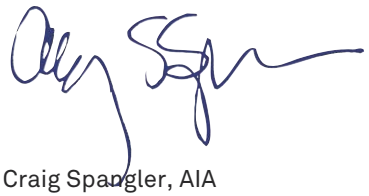
We are pleased to submit this 10% Design Report for your review and approval. Looking back over the last year, it has been a highly engaged process with many inputs about the design and technical aspects of this very complex project. Our intent during this stage has been to uncover the complexities and to solve them in basic terms. This 10% report is a summation of our team effort. A few highlights:

- The space program has been refined and advanced with the Chemistry Department and UW FP&M, and scope remains consistent with the Original Design Report of August 2, 2012.
- The stacking logic remains the same except for relocating the future research floor to level 4 due to chemical quantity limits imposed by the building code.
- The lower levels remain as the principal classroom and lecture floors with the size consistent with the original intent.
- The design character of the exterior takes its inspiration from the April 4 Design Review Concept. Internally, the emphasis has been to maintain an open character on every floor.
- The budget target of $111.9M has been our guide for determining the scope of the project and will remain the basis. This will continue to be the case in the 35% phase and for the continued development of the project.
- The project schedule is very important to the success of the project. With our current context, we anticipate starting construction in the Spring of 2017.

We look forward to your review of this document and commencing the 35% phase of the project.

Regards,

William R. Gustafson, FAIA
PRINCIPAL



Craig Spangler, AIA
PRINCIPAL

Wayne Whiting, AIA, ICC
VICE PRESIDENT

# CONTENTS

# EXECUTIVE SUMMARY

**The current Project evolved out of two previous studies:**

- University of Wisconsin – Madison

  Chemistry Instructional Addition and Renovation

  Space Assessment and Feasibility Study

  August 02, 2012

  This study was developed by Aro Eberle and Ballinger

- University of Wisconsin – Madison

  Chemistry Building Addition + Renovation

  Separation Study

  February 09, 2015

  DFD Project No. 13B3G

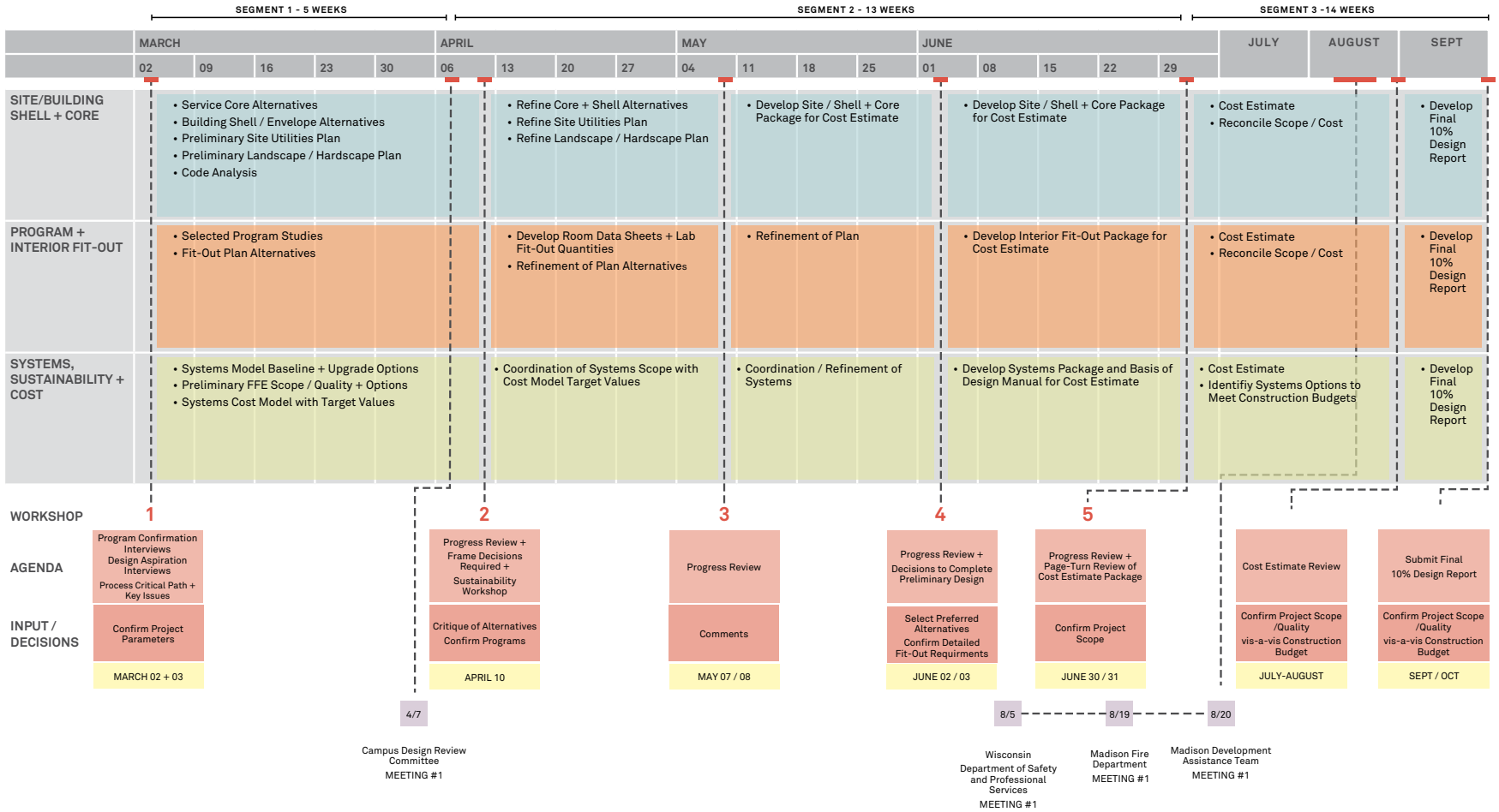
  This study was developed by Strang and Ballinger

Throughout the Pre-Design phase, the project advanced through the collaborative efforts of DFD, University Wisconsin-Madison FP&M, University of Wisconsin-Madison Chemistry Department, and the A/E team. A series of workshops (outlined on the following page) provided regular progress reviews and the opportunity for the entire team to establish goals and set a collective vision for the project. Additionally, reviews by the University of Wisconsin Design Review Board, Madison Development Assistance Team, Madison Fire Department, and Wisconsin Department of Safety and Professional Services provided objective critiques that helped inform the current design.

The project is on track towards a $111,900,000 total project cost*, and completion date of Summer 2020** (New Tower completed Summer 2019).

*See Cost Summary Pg. 71
**See Schedule Summary Pg. 69

# PRE-DESIGN WORKSHOPS SCHEDULE [2015]



# PROJECT GOALS

The need to modernize and expand the instructional facilities for the Department of Chemistry at UW-Madison has been acknowledged by stakeholders for a number ofyears. The outdated and deteriorated state of these facilities has become a serious limitation to effective instruction in nearly all undergraduate chemistry courses, especially the largest courses in general and organic chemistry. The need for new labs is driven both by safety considerations that cannot be met by remodeling of the current labs, and by substantially increased enrollments that have forced subpar modifications of the content of the core curriculum solely to accommodate the increased enrollment. The existing facilities neither support contemporary instructional methods noraccommodate the growing number of students required to use them.

**The Project is framed by the following goals and criteria:**

- Maximize the development of a limited site.
- Incremental implementation facilitated by construction phasing.
- Long-term flexibility for program needs via adaptability of the plan and MEP systems.
- Minimize the risk of HVAC systems obsolescence and failure (existing buildings).
- Continuity of the teaching program during construction.

**The Project has the following components:**

- A 176,543 gross square feet New Tower structure positioned at the northeast corner of the Chemistry block (southwest of University Avenue and Mills Street). The tower has eight levels plus a mechanical equipment floor. The existing two-story lecture hall wing of the Chemistry complex is demolished to create the site for the New Tower. The New Tower provides an MEP infrastructure to serve Daniels and Mathews. A new site utilities “umbilical” connects the New Tower with university central utilities capacity in North Charter Street.
- Renovation of the three-story portion of Daniels, which fronts on North Mills Street and extends from Johnson Street at the south to the New Tower at the north. The area of renovation is 51,902 gross square feet. The renovated area is served by a new air handler at the basement of Daniels and a centralized exhaust system at the New Tower. A new fire pump and a new emergency generator for the Chemistry complex is located at the basement of the new Tower. The area of renovation does not include the existing Seminar Hall at the southeast corner of Daniels near Johnson Street and Mills Street.
- Consolidation of the existing, decentralized HVAC exhaust systems within Daniels and Mathews into a new centralized system at the New Tower. The new system adds heat recovery to the original buildings.

**The space program comprises the following major components:**

- 2 Lecture Halls located at the Sub-Basement level of the New Tower.
- 1 Multi-Purpose Teaching Space located at the 1st floor of the New Tower.
- A Chemistry Information Commons with Groups Study Rooms located at the 2nd floor of the New Tower.
- Three 30-Seat Classrooms.
- 6 General Chemistry Labs and 12 adjacent Write-Up Rooms located at the three-story portion of Daniels.
- 2 Organic Chemistry Labs and 1 Advanced Organic / Inorganic Chemistry Lab located at the 5th floor of the New Tower.
- 2 Organic Chemistry Labs and 1 Advanced Organic Chemistry Lab located at the 6th floor of the New Tower.
- 3 Analytical Chemistry Labs located at the 7th floor of the New Tower.
- One pair of Write-Up Rooms located adjacent to each lab in the New Tower.
- The 4th and 8th floors of the New Tower are shelled space for future chemistry labs.

# PROJECT GOALS

**Principles of the design concept are:**

- Open connectivity between the New Tower and the 3-story portion of Daniels with primary circulation linking entrances at the northeast corner of the New Tower (University Avenue and Mills Street intersection) and the south end of Daniels at Johnson Street.
- Visual connectivity throughout public spaces and labs.
- Integration of the New Tower HVAC system and Daniels exaust system.
- Floor-to-floor dimensions at the New Tower (15'-0") sized for program flexibility.
- Creation of a multi-story Public Zone for Chemistry at the base of the New Tower, with openness and spatial character to provide ample circulation space for large numbers of students and a social quality for student interaction and group study.
- Reinforcement of the developing urban character of University Avenue, through building massing, an appropriate setback from the street, accommodation of street trees and bicycle parking, and integration of the building's multi-story public zone with the streetscape. The building presents itself as visually open to the Campus via the design of the facades.
- The New Tower as an incremental building block, within a long-term cycle-of-renewal for the Chemistry complex, which would link to the Shain Tower via a subsequent building block on the open area of the site to the southwest.

**Construction will occur in the following sequence:**

- Demolition of the existing lecture hall wing at the northeast corner of the Chemistry block.
- Construction of the New Tower and MEP infrastructure.
- Renovation of the three-story portion of Daniels and change-out of the Daniels / Mathews exhaust systems from local decentralized systems to a centralized system at the New Tower.

NEW LAB SPACES WITH
ADJACENT DISCUSSION SPACES

NEW TABLETOP / MOVABLE CHAIR MODEL
LECTURE HALLS

SOCIAL AND STUDY SPACES /
SCIENCE IN SIGHT

ENGAGE BUILDING WITH CAMPUS EXPERIENCE

# PROJECT OVERVIEW

## PROJECT SCOPE

This Design Report reflects a very intense engagement by the design team, UW & DFD to further define this project in all its component parts. As the design developed, the very real constraints of the site, systems and budget were exposed. The value of this report is confirming that the organizing principles formed in the earlier studies are still being met.

1. Site location for the Tower: locating the 170,000 SF+ tower on the north end of Daniels proved to be a good choice. No game breaking surprises were discovered.

2. Provision for Expansion / Linking to Shain Tower: As indicated on the adjoining Scope Plan, the long range plan is to build the next phase indicated by the white expansion zone to allow a direct connection from the new tower with Shain with ramping between building floors (pg. 11)

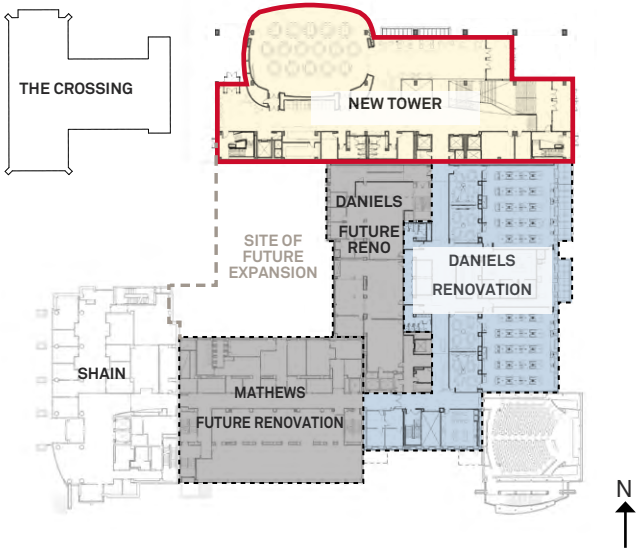
3. Massing to emphasize Corner Entrance: Growing out of the Design Review of April 2015, the asymmetry of that concept has been maintained, articulating the “Learning Studio” classroom as a ground level feature on University Avenue (pg., 13)

4. Porous Superblock: In conjunction with the articulated corner, we’ve developed Main Street to link the Johnson Street Entrance and the New Tower (pg. 14)

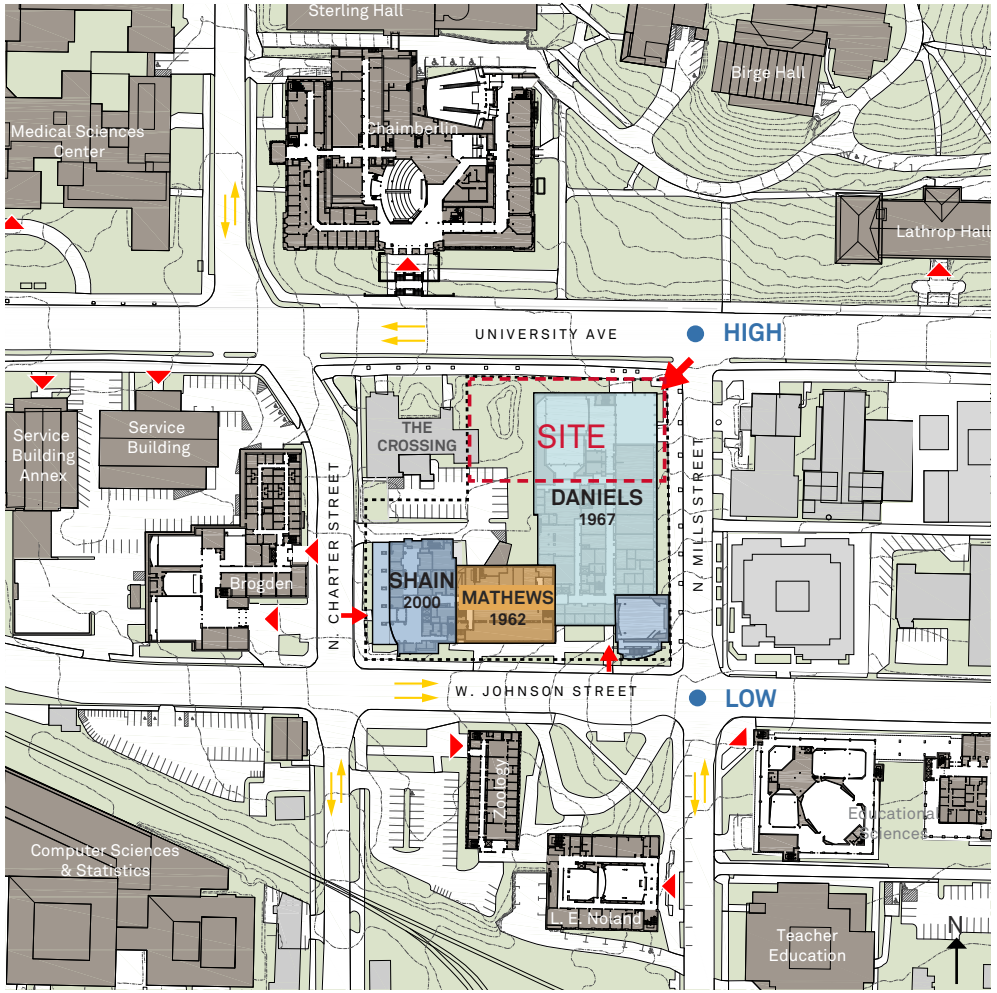
5. Transparent and Open Character: Given a northern orientation of the new addition, it’s possible to create an open interior character that makes the science visible and the general public spaces welcoming (pg. 14-15)

# PROJECT SCOPE

The project consists of a new 176,500 SF chemistry building and nearly 52,000 SF of renovations on the lower 3 floors of the existing Daniels Building. The site of the new tower at University Avenue and Mills Street provides a highly visible and accessible location, while maintaining the potential for a future addition and backfill renovations as identified in the 2012 Space Assessment and Feasibility Study.



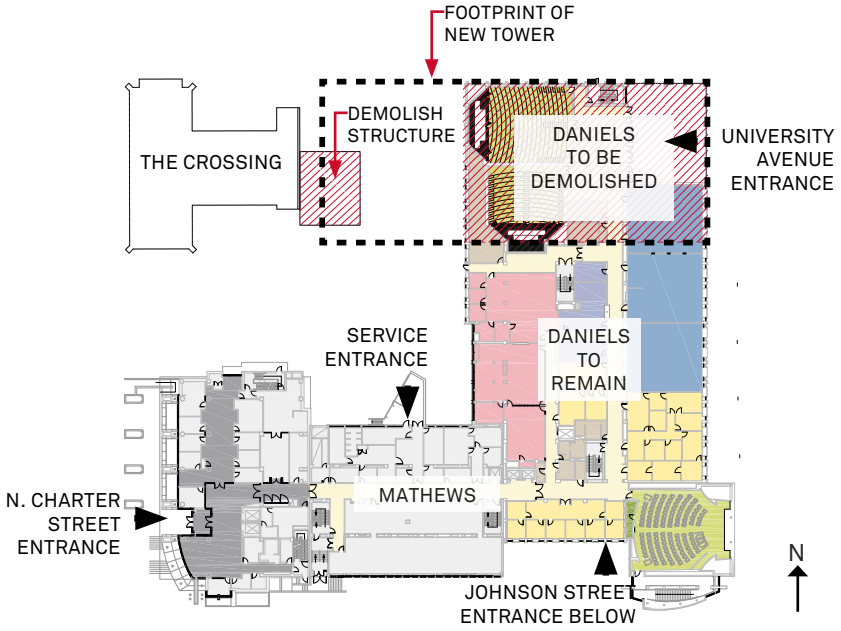

SCOPE PLAN




EXISTING SITE PLAN

# SITE PREPARATION

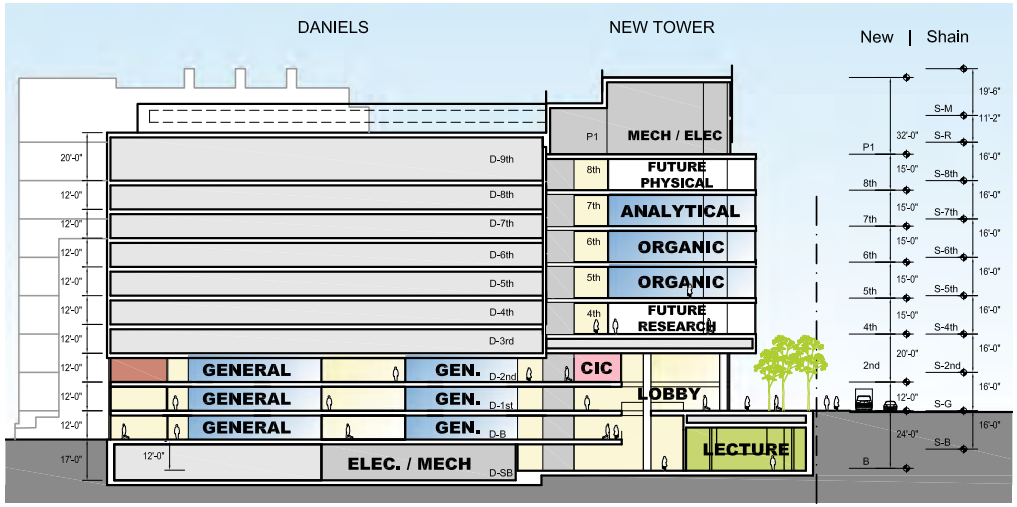

EXISTING SITE AND DEMOLITION SCOPE




DEMOLITION PLAN

Consisting of the interconnected Daniels, Mathews, and Shain buildings, the existing Chemistry complex exhibits a dense urban character. Sited at the corner of Mills Street and University Avenue, The New Chemistry tower requires the demolition of the lower three floors of the Daniels building. Additionally, a two-story brick house attached to The Crossing has been purchased and will be razed for the expansion of the existing Chemistry site. The new property will be consolidated into a single parcel for development of the project. Additional demo work will be done on Daniels and Mathews roofs for installation of new mechanical ductwork.

# MASSING



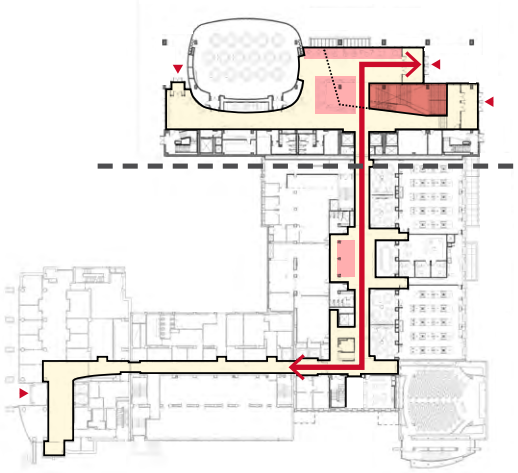

PROGRAMMATIC CONCEPT SECTION

CONCEPT MODEL

Sectionally, the project is organized with higher traffic program spaces such as the General Chemistry labs and lecture halls located on the lower levels for better flow of students. Active social spaces such as the Chemistry Information Commons and Learning Studio are connected to the multi-story lobby along University Avenue to foster interaction and create a visible public identity for the Chemistry Department. Labs are located on the upper floors of the Tower, with a future research lab (highest chemical demands programmatically) located on the lowest level to adhere to chemical control area limitations. Two levels of Organic Chemistry are located on the 5th and 6th floor, with Analytical Labs on the 7th floor and future Advanced Analytical and Physical labs planned for the 7th and 8th floor.

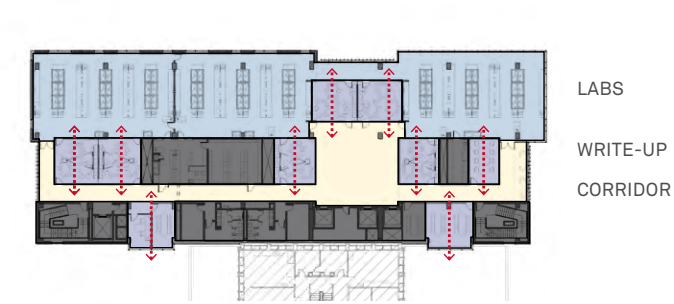
# CIRCULATION AND VERTICAL CONNECTIVITY

Circulation within the Tower and Daniels has been designed to be simple and intuitive, with light located at the ends of public corridors and gathering spaces distributed across the floor. A widened and relocated hallway through Daniels serves as a Main Street connecting the New Chemistry Tower to the Mathews and Shain buildings on the Basement, Ground and Second Floors. This corridor location establishes a new boundary for the labs and significantly reduces the crossing of chemicals through public spaces. Gathering spaces along the route alleviate congestion and provide students with a vibrant setting for social interaction.



GROUND FLOOR PUBLIC PASSAGE

# TRANSPARENCY AND VISUAL CONNECTIVITY




TRANSPARENCY DIAGRAM

One of the most transformative changes to the character of the New Chemistry Building is the degree of transparency and light throughout the interior. Glass partitions and communicating stairs create visual connections throughout the building, and help to stimulate student interaction. Visibility of the labs from public corridors puts science on display, and helps to establish an interior character that is rooted in Chemistry Education. Write-up rooms connected visually with laboratories enable innovative, modern laboratory pedagogy.

# SPACE TABULATION

## PROGRAM CONFIRMATION

Given the starting point of the August 2012 Design Report, every program component was examined and developed them further via level by level plan development. The chart at the right compares the 2012 program summary with the developed design of 2015. Several aspects of this development are noteworthy.

1. Overall the total SF in the tower is 6,500 SF larger
2. The typical upper level floors are smaller reflecting a tightening of the plan dimensions: 1,800SF / floor savings
3. The penthouse grew by 1,700 SF reflecting further development of equipment sizes and tolerances
4. The largest increase occurred with the addition of the mezzanine level. This provides additional mechanical and core space and works to link up Daniels basement to the new addition: 12,600 SF

**Total Space Summary: 176,543 GSF for the Tower**

Along the way, the major spaces were carefully examined and sized (see pages 32-45 for space testing examples). In addition, the renovation concepts evolved significantly from the Study Phase Report. Highlights include:

1. Slightly larger General Chemistry layouts: 2,970 SF
2. Increased Mechanical Space for generator and air handling units: 7,681 SF
3. Elimination of the Daniels penthouse

**Total Renovation Space Summary: 51,902 SF**

**SUMMARY: NET ASSIGNABLE SQUARE FEET (NASF)**

| DEPARTMENT | DANIELS | TOWER\ |
|---|---|---|
| • UG Chemistry | 1,413 NASF | - |
| • Learning Spaces | 1,526 NASF | 17,843 NASF |
| • Analytical Chemistry | - | 12,779 NASF |
| • General Chemistry | 23,659 NASF | 3,480 NASF |
| • Organic Chemistry | - | 21,883 NASF |
| • Student Support | 2,507 NASF | 11,880 NASF |
| **SUBTOTAL** | **29,105 NASF** | **67,865 NASF** |
| **TOTAL** | | **96,970 NASF** |

# GROSS AREA COMPARISON: 2012 VS 2015

| SUMMARY | | 2012 REPORT GSF | | | 2015 GSF | | |
|---|---|---|---|---|---|---|---|
| Level | Program | Daniels | Tower | Total | Daniels | Tower | Total |
| PH | Mechanical | 13,752 | 14,560** | 28,312 | | 16,224 | 16,224 |
| 8 | Shell (Physical Chem.) | - | 20,725 | 20,725 | - | 18,909 | 18,909 |
| 7 | Analytical Chemistry | - | 20,190 | 20,190 | - | 18,909 | 18,909 |
| 6 | Organic Chemistry | - | 20,725 | 20,725 | - | 18,841 | 18,841 |
| 5 | Organic Chemistry | - | 20,190 | 20,190 | - | 18,832 | 18,832 |
| 4 | Shell (Research) | - | 20,725 | 20,725 | - | 18,832 | 18,832 |
| 2 | Info. Commons / General Chemistry | 13,752 | 10,800 | 24,552 | 14,175 | 9,774 | 23,949 |
| G | 120 Seat Lecture / General Chemistry | 13,752 | 14,500 | 28,252 | 14,895 | 15,625 | 30,520 |
| B | Mechanical / General Chemistry | 13,752 | 0 | 13,752 | 15,151 | 12,603 | 27,754 |
| SB | 250 & 360 Seat Lecture / Mechanical | - | 27,600 | 27,600 | 7,681 | 27,992 | 35,673 |
| **TOTAL** | | **55,008** | **170,015** | **225,032** | **51,902** | **176,543** | **228,443** |
| **BASELINE** | | **55,000** | **170,000** | **225,000** | **55,000** | **170,000** | **225,000** |

**EFFICIENCY SUMMARY**

- Tower (w/4&8 Fit-out)* 93,265 NASF / 176,543 GSF = 53%
- Daniels 29,105 NASF / 51,902 GSF = 56%

TOTAL: 125,434 NASF / 228,443 GSF = 54%

*ASSUMED 12,700 ASF PER FLOOR

**Efficiency**

Both the New Tower and the Renovation Plans are in the 53/56% efficient range. This is consistent with the National Benchmarking Study done as part of the study phase report in 2012.

# SPACE TABULATION

## UG CHEMISTRY OFFICE

| | | |
|---|---|---|
| ***GROUND FLOOR*** | | |
| IT SPECIALIST | 130 SF | |
| RESEARCH COORD. OFFICE | 130 SF | |
| UC CHEM DIRECTOR OFFICE | 130 SF | |
| UC CHEM MEETING ROOM | 411 SF | |
| UC CHEM OFFICE SUITE | 611 SF | |
| **DANIELS / TOWER** | **1,413 SF** | |
| **TOTAL** | | **1,413 SF** |

## LEARNING SPACES

| | | |
|---|---|---|
| ***SUB-BASEMENT*** | | |
| AV | | 74 SF |
| DEMO PREP | | 1227 SF |
| DEMO STOR. | | 407 SF |
| LECT VEST | | 90 SF |
| LECT. VEST. | | 126 SF |
| LECTURE - 250 SEAT | | 4715 SF |
| LECTURE - 360 SEAT | | 6107 SF |
| OFFICE | | 86 SF |
| ORG DEMO | | 161 SF |
| ***GROUND FLOOR*** | | |
| LECTURE - 120 SEAT | | 3899 SF |
| ***SECOND FLOOR*** | | |
| CLASSROOM | 712 SF | |
| CLASSROOM | 814 SF | |
| CLASSROOM | | 953 SF |
| **DANIELS / TOWER** | **1,526 SF** | **17,843 SF** |
| **TOTAL** | | **19,369 SF** |

## ANALYTICAL CHEMISTRY

| | | |
|---|---|---|
| ***SEVENTH FLOOR*** | | |
| ANALYTICAL CHEM LAB | | 1,787 SF |
| ANALYTICAL CHEM LAB | | 2,462 SF |
| ANALYTICAL CHEM LAB | | 2,712 SF |
| INSTRUMENT ROOM | | 495 SF |
| LAB AUXILIARY | | 282 SF |
| LAB DIR. OFFICE | | 169 SF |
| LECT. OFFICE | | 170 SF |
| MEETING ROOM | | 184 SF |
| PREP DEV. LAB | | 395 SF |
| STOCK ROOM | | 497 SF |
| STOCK ROOM | | 500 SF |
| TA OFFICE | | 466 SF |
| TA DISP. | | 223 SF |
| TA MEETING ROOM | | 492 SF |
| WRITE-UP ROOM [x 5] | | [389 SF ea] *(average)* |
| **DANIELS / TOWER** | | **12,779 SF** |
| **TOTAL** | | **12,779 SF** |

## GENERAL CHEMISTRY

| | | |
|---|---|---|
| ***BASEMENT*** | | |
| BREAK AREA | 62 SF | |
| DEVELOPMENT LAB | 180 SF | |
| GENERAL CHEM LAB | 2,357 SF | |
| GENERAL CHEM LAB | 2,401 SF | |
| INSTRUMENT ROOM | 136 SF | |
| LAB DIR OFFICE | 137 SF | |
| LECT. OFFICE | 138 SF | |
| MEETING ROOM | 411 SF | |
| STOCK ROOM | 368 SF | |
| STOCK ROOM | 378 SF | |
| WRITE UP ROOM [x 4] | [489 SF ea] *(average)* | |
| ***GROUND FLOOR*** | | |
| GENERAL CHEM LAB | 2,393 SF | |
| GENERAL CHEM LAB | 2,393 SF | |
| SAT STOCK ROOM | 503 SF | |
| WRITE UP ROOM [x 4] | [489 SF ea] *(average)* | |
| ***SECOND FLOOR*** | | |
| GENERAL CHEM LAB | 2,389 SF | |
| GENERAL CHEM LAB | 2,390 SF | |
| LAB DIR. OFFICE | 134 SF | |
| OFFICE | 134 SF | |
| SAT STOCK ROOM | 482 SF | |
| TA MEETING ROOM | 202 SF | |
| TA MEETING ROOM | 203 SF | |
| WRITE UP ROOM [x 4] | [489 SF ea] *(average)* | |
| ***FIFTH FLOOR*** | | |
| ADVANCED GEN / INORGANIC LAB | | 2,690 SF |
| WRITE-UP ROOM [x2] | | 395 SF ea *(average)* |
| **DANIELS / TOWER** | **23,659 SF** | **3,480 SF** |
| **TOTAL** | | **27,139 SF** |

## ORGANIC CHEMISTRY

| | | |
|---|---|---|
| ***FIFTH FLOOR*** | | |
| INSTRUMENT ROOM | | 193 SF |
| LAB AUXILIARY | | 302 SF |
| LECT. OFFICE | | 172 SF |
| MEETING ROOM | | 223 SF |
| ORGANIC CHEM LAB | | 2,456 SF |
| ORGANIC CHEM LAB | | 2,532 SF |
| STOCK ROOM | | 498 SF |
| STOCK ROOM | | 500 SF |
| TA MEETING ROOM | | 184 SF |
| TA MEETING ROOM | | 464 SF |
| TA OFFICE | | 289 SF |
| WRITE-UP ROOM [x 4] | | [395 SF ea] *(average)* |
| ***SIXTH FLOOR*** | | |
| ADVANCED ORGANIC CHEM LAB | | 2,692 SF |
| DEVELOPMENT LAB | | 211 SF |
| INSTRUMENT ROOM | | 192 SF |
| INSTRUMENT (NMR) | | 378 SF |
| LAB DIR. OFFICE | | 173 SF |
| LAB DIR. OFFICE | | 173 SF |
| LAB AUXILIARY | | 323 SF |
| LECT. OFFICE | | 137 SF |
| MEETING ROOM | | 140 SF |
| MEETING ROOM | | 633 SF |
| ORGANIC CHEM LAB | | 2,456 SF |
| ORGANIC CHEM LAB | | 2,527 SF |
| SAT. STOCK ROOM | | 403 SF |
| WRITE-UP ROOM [x 6] | | [392 SF ea] *(average)* |
| **DANIELS / TOWER** | | **21,883 SF** |
| **TOTAL** | | **21,883 SF** |

# SPACE TABULATION

| STUDENT SUPPORT | | |
|---|---|---|
| ***SUB-BASEMENT*** | | |
| INTERACTION | | 1507 SF |
| STUDY AREA | | 1056 SF |
| **BASEMENT** | | |
| STUDY | 543 SF | |
| STUDY ROOM | | 240 SF |
| STUDY AREA | 300 SF | |
| OPEN SEATING | 122 SF | |
| UNDERGRAD. LOUNGE | | 411 SF |
| ***GROUND FLOOR*** | | |
| GRADUATE STUDENT LOUNGE | 543 SF | |
| OPEN SEATING | | 386 SF |
| OPEN SEATING | | 579 SF |
| OPEN SEATING | | 105 SF |
| STUDY AREA | 300 SF | |
| OPEN SEATING | 122 SF | |
| STUDY BOOTH | | 224 SF |
| STUDY (ADDITION) | | 350 SF |
| ***SECOND FLOOR*** | | |
| GROUP STUDY | | 169 SF |
| CHEM INFORMATION COMMONS | | 2577 SF |
| LG. GROUP STUDY | | 222 SF |
| LG. GROUP STUDY | | 297 SF |
| OFFICE | | 117 SF |
| OPEN SEATING | | 253 SF |
| STUDY AREA | 300 SF | |
| OPEN SEATING | 122 SF | |
| STUDY AREA | 155 SF | |
| SMALL GROUP ROOM [x 7] | | 735 SF [7 x105 SF] |
| VISITOR OFFICE | | 115 SF |
| ***FIFTH FLOOR*** | | |
| STUDY AREAS | | 805 SF |
| ***SIXTH FLOOR*** | | |
| STUDY AREAS | | 805 SF |
| ***SEVENTH FLOOR*** | | |
| STUDY AREAS | | 805 SF |
| **DANIELS / TOWER** | **2,507 SF** | **11,880 SF** |
| **TOTAL** | | **14,387 SF** |

| MECHANICAL / ELECTRICAL* | | |
|---|---|---|
| ***SUB-BASEMENT*** | | |
| MECHANICAL ROOM | | 2,474 SF |
| AHU | 1,344 SF | |
| GENERATOR | 1,066 SF | |
| PLUMBING | | 148 SF |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***BASEMENT*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| MECHANICAL | | 2,859 SF |
| FIRE PUMP ROOM | | 244 SF |
| ***GROUND*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***SECOND FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***FOURTH FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***FIFTH FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***SIXTH FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***SEVENTH FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***EIGHTH FLOOR*** | | |
| TELECOM | | 177 SF |
| ELECTRICAL | | 180 SF |
| ***PENTHOUSE*** | | |
| MECHANICAL | | 12,606 SF |
| ELECTRICAL | | 2,221 SF |
| FAN ROOMS | | 450 SF |
| **DANIELS / TOWER** | **2,410 SF** | **23,858 SF** |
| **TOTAL** | | **26,268 SF** |

*NOT INCLUDED IN ASF TOTALS

| BUILDING SUPPORT * | | |
|---|---|---|
| ***SUB -BASEMENT*** | | |
| TOILET ROOMS | | 415 SF |
| JANITOR CLOSET | | 30 SF |
| TOILET ROOMS | | 184 SF |
| STORAGE | | 58 SF |
| ***BASEMENT*** | | |
| TOILET ROOMS | 479 SF | |
| JANITOR | 90 SF | |
| STORAGE | 135 SF | |
| TOILET ROOMS | | 415 SF |
| JANITOR CLOSET | | 30 SF |
| STORAGE | | 54 SF |
| ***GROUND*** | | |
| TOILET ROOMS | 479 SF | |
| JANITOR | 90 SF | |
| TOILET ROOMS | | 415 SF |
| JANITOR CLOSET | | 30 SF |
| STORAGE | | 226 SF |
| EVENT SUPPORT | | 365 SF |
| AV STORAGE | | 133 SF |
| FIRE COMMAND | | 179 SF |
| ***SECOND FLOOR*** | | |
| TOILET ROOMS | 479 SF | |
| JANITOR | 90 SF | |
| TOILET ROOMS | | 184 SF |
| JANITOR CLOSET | | 30 SF |
| STORAGE | | 167 SF |
| ***FIFTH FLOOR*** | | |
| TOILET ROOMS | | 415 SF |
| JANITOR | | 30 SF |
| STORAGE | | 241 SF |
| ***SIXTH FLOOR*** | | |
| TOILET ROOMS | | 415 SF |
| JANITOR | | 30 SF |
| STORAGE | | 241 SF |
| ***SEVENTH FLOOR*** | | |
| TOILET ROOMS | | 415 SF |
| JANITOR | | 30 SF |
| STORAGE | | 241 SF |
| **DANIELS / TOWER** | **1,842 SF** | **4,973 SF** |
| **TOTAL** | | **6,815 SF** |

# DESIGN INTENT

## SUMMARY

This design grows from an integration of interior and exterior forces conceptualized in the Program Phase, roughly depicted in the April Design Review and are spelled out in the pages that follow.

1. University Avenue Presence and Entrances: The size and articulation of the new addition are the result of keeping in scale with recent developments while presenting a welcoming character at the pedestrian scale (pg. 22).

2. University Avenue Entrances Welcome Students, Faculty and Visitors: The principal entrance at the corner of University and Mills Street provides an important indication of the two story public zone inside. An entrance at the west end provides a secondary point of entry.

3. Facade Development Draws from the Existing Context both New and Old: The light beige and glass materials palette intends to fit into the neighborhood while fashioning a unique identity for one of UW's primary disciplines (pg. 22-25).

4. Interior Character Develops in Section and Spatial Quality: The public domain connects existing Daniels and the new building with spaces and circulation. The high volume lecture and classrooms are carefully articulated to allow daylight to penetrate.

5. Teaching Labs Based on Unique Pedagogy for Chemistry: The core idea is having write up / discussion rooms adjacent to the labs to allow students to interact while using the lab as the proving ground for hypotheses (pg. 30-37).

6. Two Large Lecture Halls and a Learning Studio Provide Spaces for Contemporary Chemistry Education: Each of those large spaces feature low slope or no slope floors to allow group discussions as well as conventional lecture demonstrations.

# SITE: LANDSCAPE

The landscape design for the New Chemistry Building balances pedestrian circulation, planting and bike parking within a dense urban site. Addressing the University's concerns over insufficient bike parking around the existing site, the design integrates new racks with parking for 366 bikes to meet peak demands. The bike parking is distributed across the site, with the largest concentration located at the North and West sides of the New Building. This layout accommodates the high volume of student traffic entering from the North, while maintaining a bike free zone at the main building entrance at the corner of University Avenue and Mills Street.

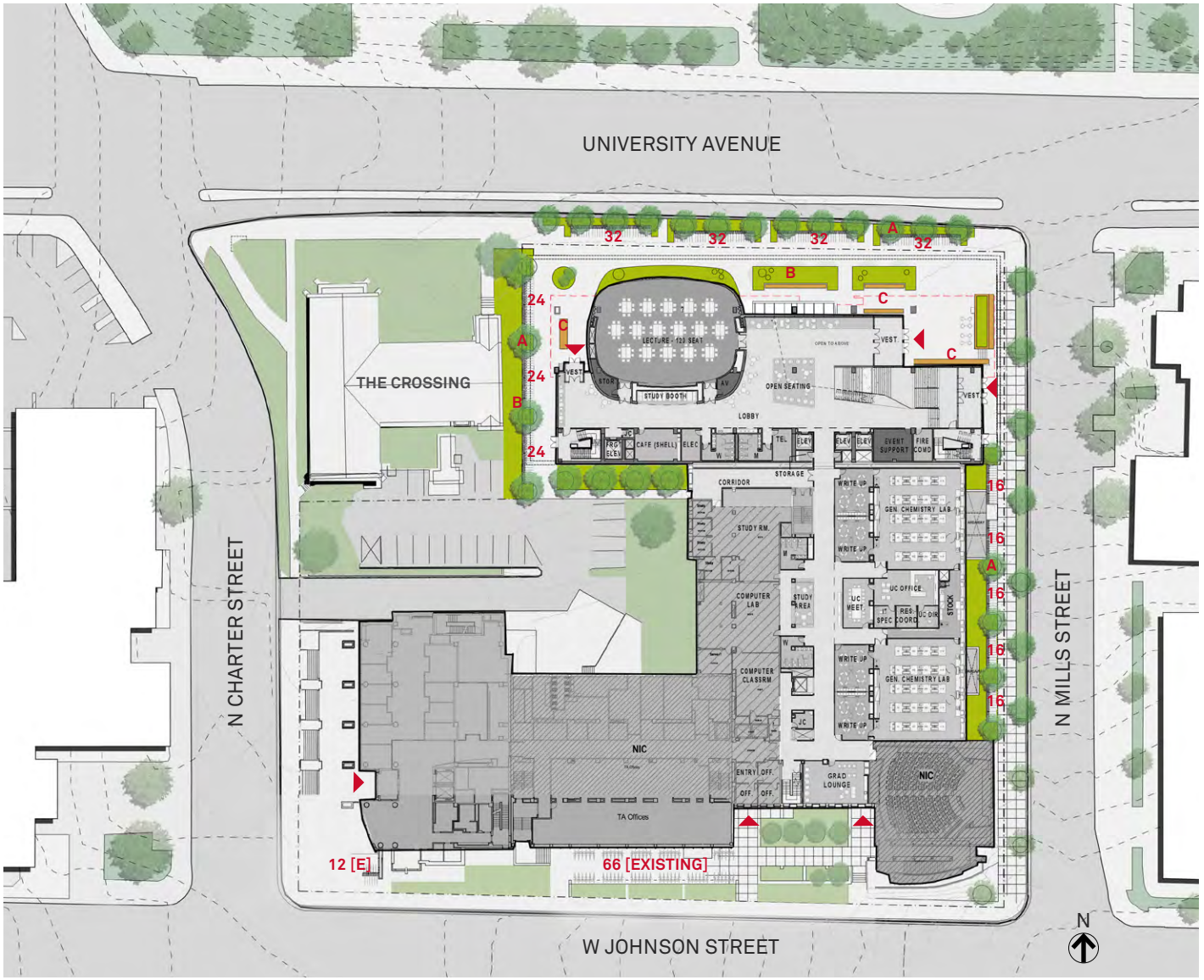
Along University Avenue to the North, a regular rhythm of at-grade planting beds and trees conceals bike parking while maintaining a clear path along the sidewalk. This strategy, with bikes located between planting beds, continues along both the west edge of the New Building and south along Mills Street. At Johnson Street, existing bike racks located to the west at Mathews will remain.

At the West, North and East edges of the site, the sub-basement lecture halls extend to the property line with sidewalk and planting beds above. This condition requires an offset slab around the perimeter of the building and the need for a green-roof system where planting beds occur. Due to the limited soil depth in these locations, planting will likely consist of hardy native perennials with limited possibility of trees in this area.

UNIVERSITY AVENUE AND N MILLS STREET : EXISTNG VIEW SOUTH WEST TO DANIELS ENTRANCE

W JOHNSON STREET : EXISTING VIEW NORTH TO DANIELS ENTRANCE

# SITE: LANDSCAPE



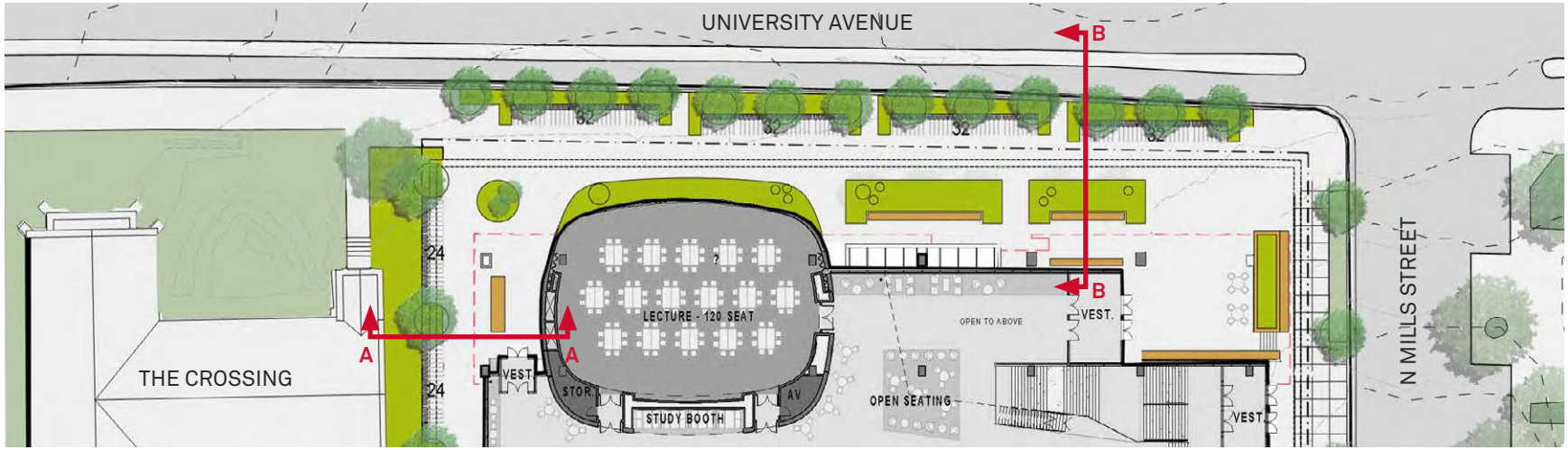

## Site Features

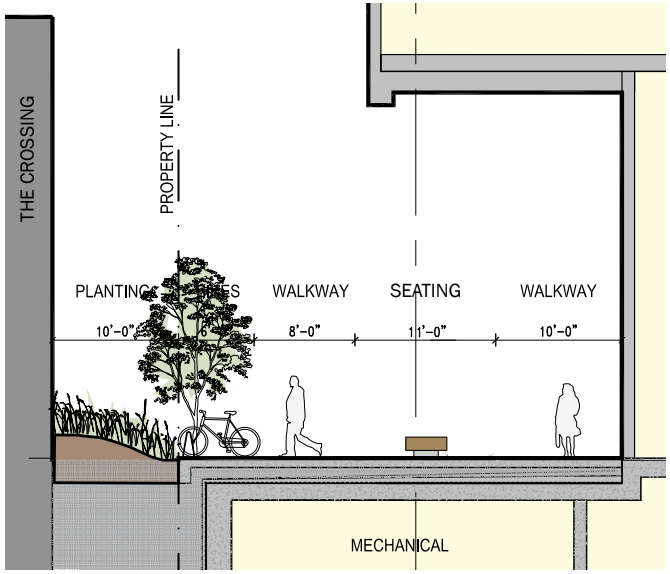
| | |
|---|---|
| NEW TREES | A |
| AT GRADE PLANTING | B |
| SEATING | C |

## Bike Parking

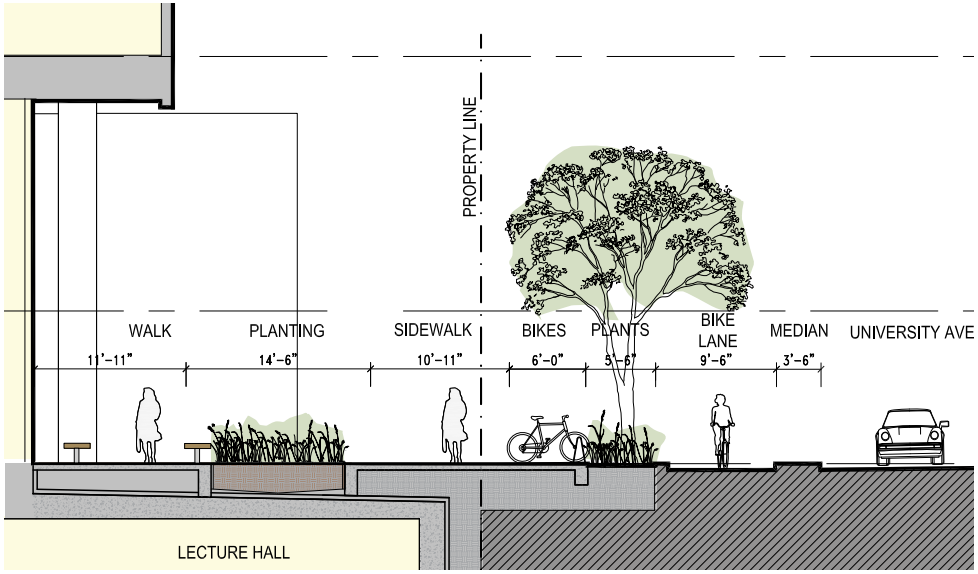
| | |
|---|---|
| UNIVERSITY AVE: | 200 BIKES |
| MILLS STREET: | 80 BIKES |
| JOHNSON STREET: | 78 [EXISTING] |
| TOTAL: | 358 BIKES |

# SITE LANDSCAPE




SITE SECTION A-A




SITE SECTION B-B

# EXTERIOR: FACADE

The exterior of the New Chemistry Building is divided into areas of natural limestone panels, rain screen walls, glass and terracotta baguette sun shades. This balance provides areas of complete transparency, shaded glazing, and solidity, and in turn, breaks down the scale of the façade through its variety.

At the North East a glass corner marks the main entry and provides an inviting identity for the chemistry department from the exterior. Constructed as a stick-built aluminum frame curtain wall system with areas of spandrel and vision glass, the glass corner provides the façade's largest area of transparency and displays the activities of the chemistry labs to the exterior.

A majority of the façade consists of rain screen walls clad with natural limestone panels. Select areas of the exterior curtain wall are clad with terracotta sun shades. This combination of limestone and terracotta responds to the textures and colors of the site, blending a traditional urban appearance with the performance of contemporary construction materials. On the North Façade, framed windows are staggered to give the exterior wall a dynamic blended appearance.

The design team recognizes the objectives and performance criteria of DFD's Daylighting Standards for State Facilities. The planned design falls within the required maximum window to wall ratio on the North, West, and South facades, but is currently 34% window to 64% wall on the East side of the building. This overage is due to a desire to increase light in a public corridor that runs along the East façade of the lab floors. The current strategy provides exterior sun shading along this east facade to control solar heat gain. The design team is committed to working with DFD to assure an appropriate the balance between human health, comfort and performance is maintained throughout the project.

# EXTERIOR: FACADE

# EXTERIOR ELEVATIONS & GLAZING

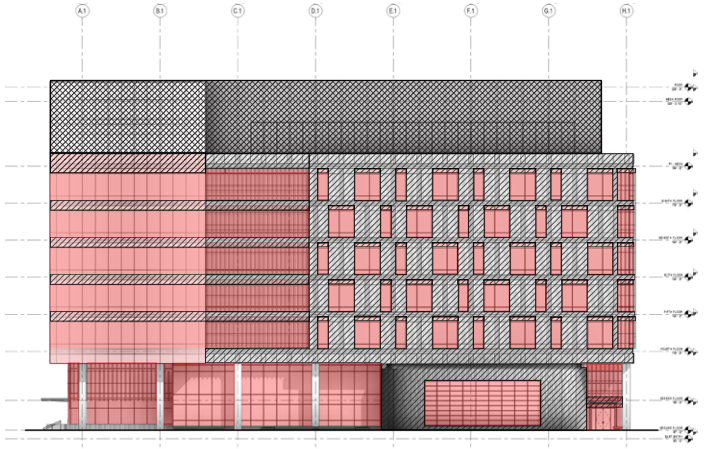
NORTH ELEVATION

WEST ELEVATION

SOUTH ELEVATION

EAST ELEVATION

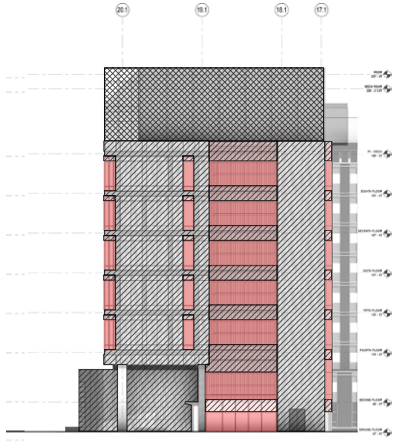
# EXTERIOR ELEVATIONS & GLAZING



North Elevation — 55% / 45%

| 7,785 sf | 14,300 sf | 8,318 sf | 3,532 sf |
|---|---|---|---|
| N/A | Glazing | Solid | Spandrel |

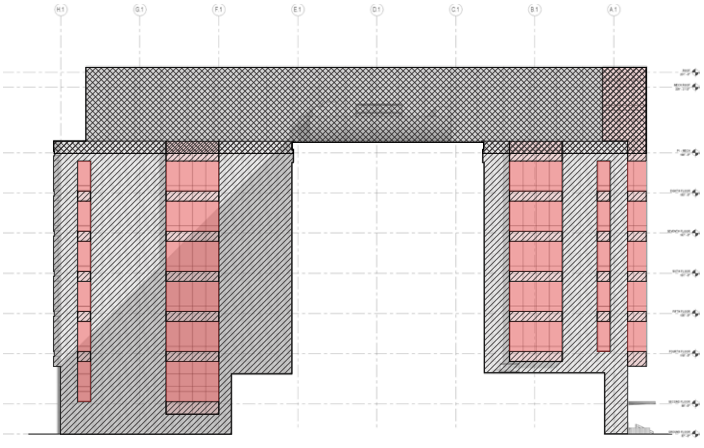
Window 14,300 sf — Wall 11,850 sf



West Elevation — 26% / 74%

| 3,058 SF | 2,756 SF | 6,597 SF | 1,201 SF |
|---|---|---|---|
| N/A | Glazing | Solid | Spandrel |

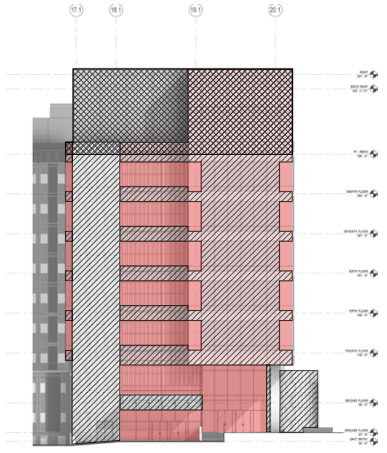
Window 2,756 sf — Wall 7,738 sf



South Elevation — 25% / 75%

| 7,782 sf | 3,980 sf | 10,467 sf | 1,441 sf |
|---|---|---|---|
| N/A | Glazing | Solid | Spandrel |

Window 3,980 sf — Wall 11,928 sf



East Elevation — 34% / 66%

| 3,068 SF | 3,587 SF | 2,746 SF | 4,286 SF |
|---|---|---|---|
| N/A | Glazing | Solid | Spandrel |

Window 3,587 sf — Wall 7,032 sf

# INTERIOR

## PROGRAM SPACES

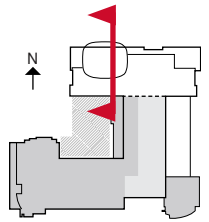
**Common Study Spaces**

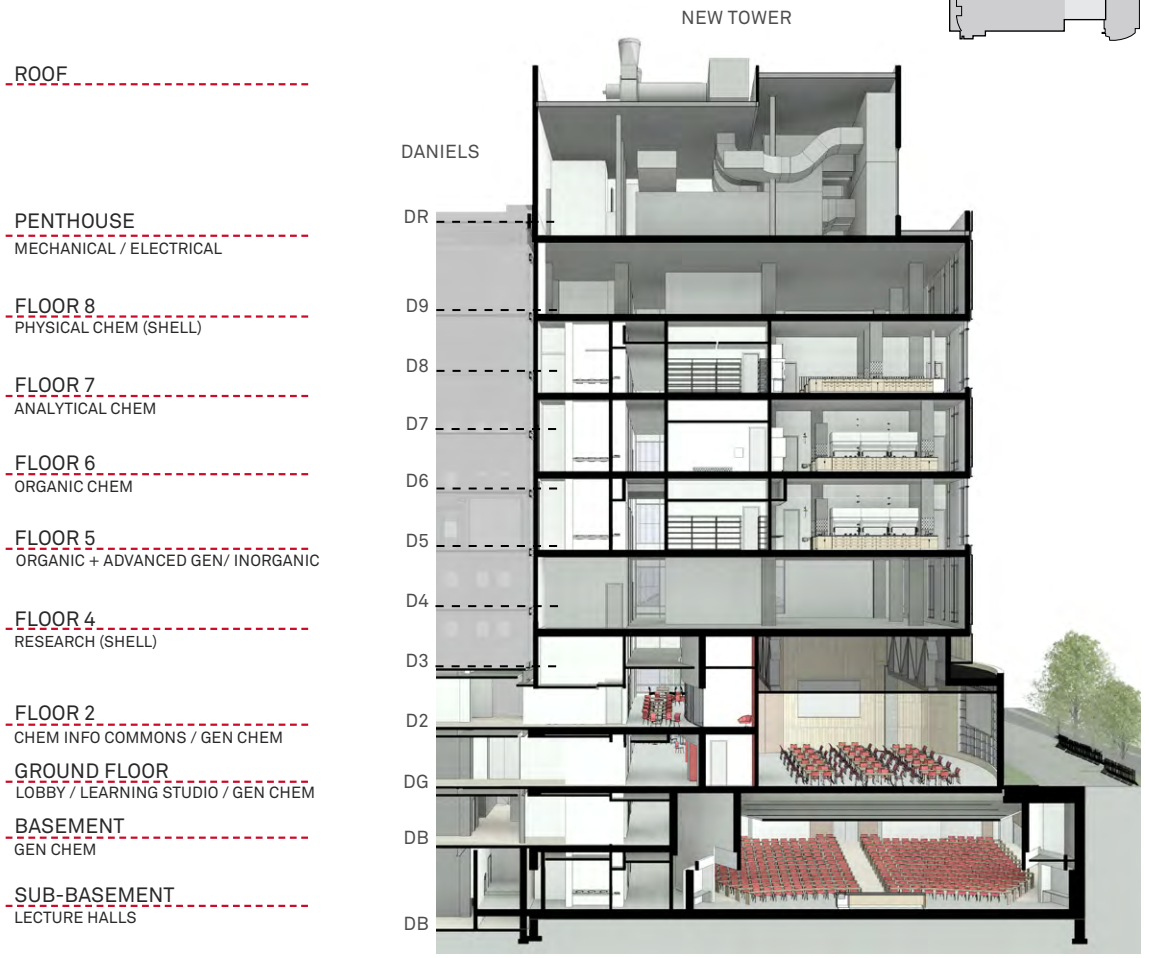
**Teaching Labs**

- General Chemistry
- Organic Chemistry
- Analytical Chemistry

**Lecture Halls**

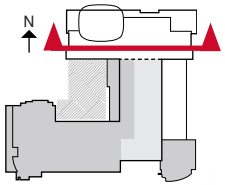
- Demonstration Prep Lab
- 360 Student lecture hall
- 250 Student Lecture Hall
- 120 Student Learning Studio




SECTION VIEW WEST

# INTERIOR




ROOF

PENTHOUSE
MECHANICAL / ELECTRICAL

FLOOR 8
PHYSICAL CHEM (SHELL)

FLOOR 7
ANALYTICAL CHEM

FLOOR 6
ORGANIC CHEM

FLOOR 5
ORGANIC + ADVANCED GEN/ INORGANIC

FLOOR 4
RESEARCH (SHELL)

FLOOR 2
CHEM INFO COMMONS / GEN CHEM

GROUND FLOOR
LOBBY / LEARNING STUDIO / GEN CHEM

BASEMENT
GEN CHEM

SUB-BASEMENT
LECTURE HALLS

SECTION VIEW NORTH

# PUBLIC SPACES


PERSPECTIVE VIEW FROM MILLS ENTRANCE

PERSPECTIVE VIEW FROM SUB-BASEMENT TO MILLS ENTRANCE

An open monumental staircase serves as the primary circulation path between building entrances on the ground floor and sub-basement lecture halls below. Doors located on Mills Street provide direct access to the stair and a mid-landing connects to Daniels basement level and sidewalk access from Johnson Street to the South.

Providing views to the lower level activity, a suspended communicating stair forms a direct circulation path from the ground floor to the second floor and Chemistry Information Commons beyond. Together with floor openings at the ground level, and glass railed balconies at the basement and second floor, the stairs help to create an open and layered approach to public space within the building.

# COMMON STUDY SPACES

PERSPECTIVE VIEW SECOND FLOOR TO MILLS STREET ENTRANCE

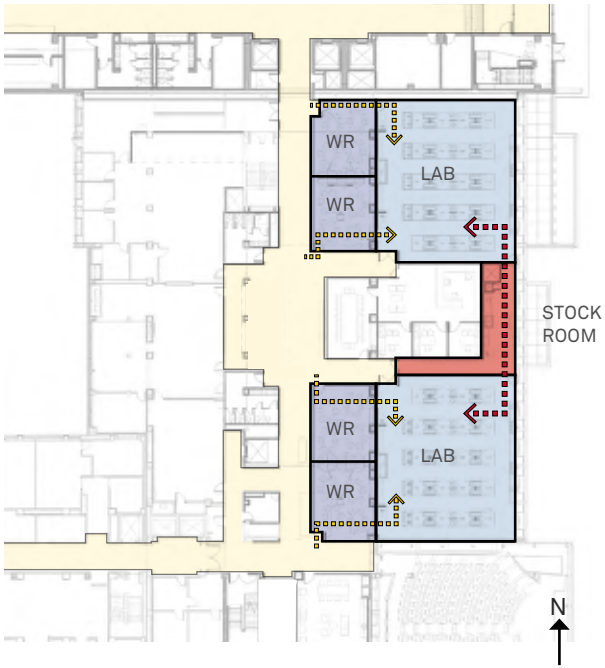
PERSPECTIVE VIEW AT 5TH FLOOR STUDY AREA

Throughout the building's public spaces small study areas provide students with places to gather before and after labs. Paired with a transparent approach to lab design, these areas make chemistry education visible while providing students with a necessary queuing space before and after classes.

# PROGRAM SPACE: TEACHING LABS

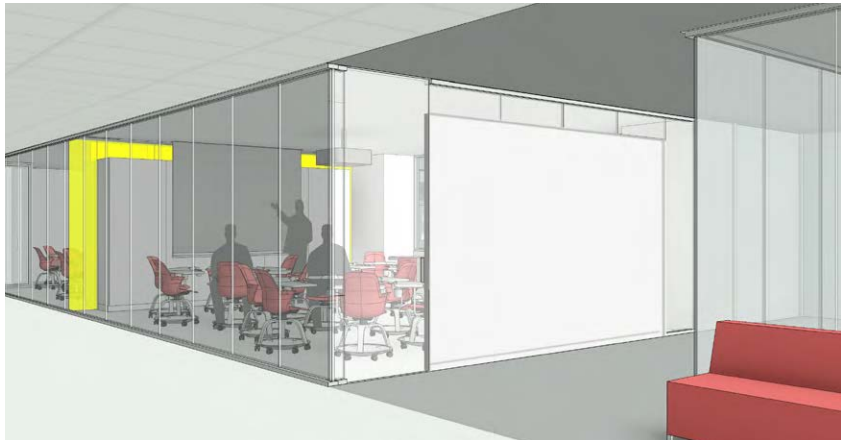
A primary goal of the lab design was the provision of paired transparent Write-up rooms adjacent to each lab. These spaces serve as the primary access point for students entering the labs, and provide a place to receive instruction, collaborate on assignments, and store possessions during lab sessions. This Transparency between the Write-ups and labs provides a visual connection to both spaces, and allows instructors and TAs to monitor students from either location.

At the lab floors, an effort was made to minimize the crossing of public circulation and chemical distribution paths. Within the General Chemistry labs in Daniels, a centralized stockroom on each floor serves both labs directly, eliminating the need for chemicals to enter the public corridor. Utilizing a similar approach, the Organic and Analytical labs within the tower share a central stockroom between three labs on each floor. Here, chemical traffic occurs within the lab control areas, with chemicals only entering the corridor for periodic deliveries from the service elevator.

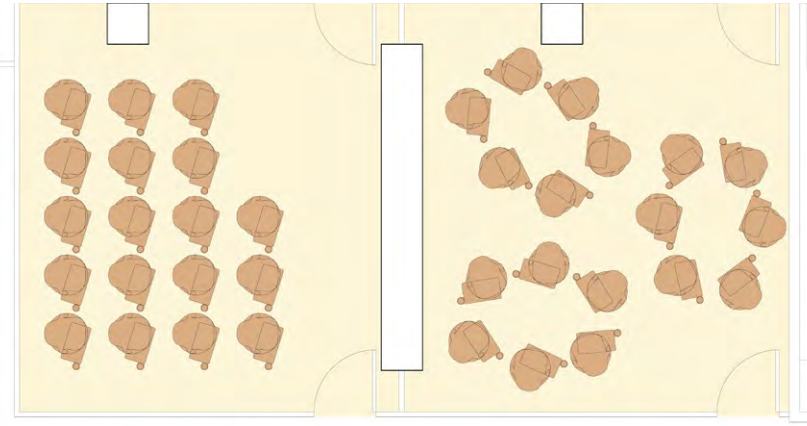

# PROGRAM SPACE: LAB WRITE-UP ROOMS

Write-up rooms feature rolling chairs for flexibility: allowing for both clustered group work and entire lab section discussions [Daniels 22 seats, New Tower 18 seats]. Glass walls with opaque interlayers provide marker-writing surfaces for the rooms, while additional writing surfaces conceal a coat closet and student storage cubbies.

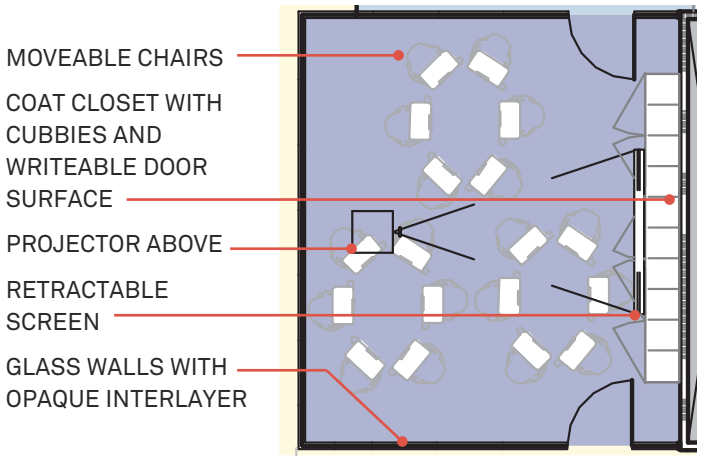


WRITE-UP ROOM FROM DANIELS CORRIDOR

WRITE-UP ROOM INTERIOR AND COAT CLOSET [DANIELS]

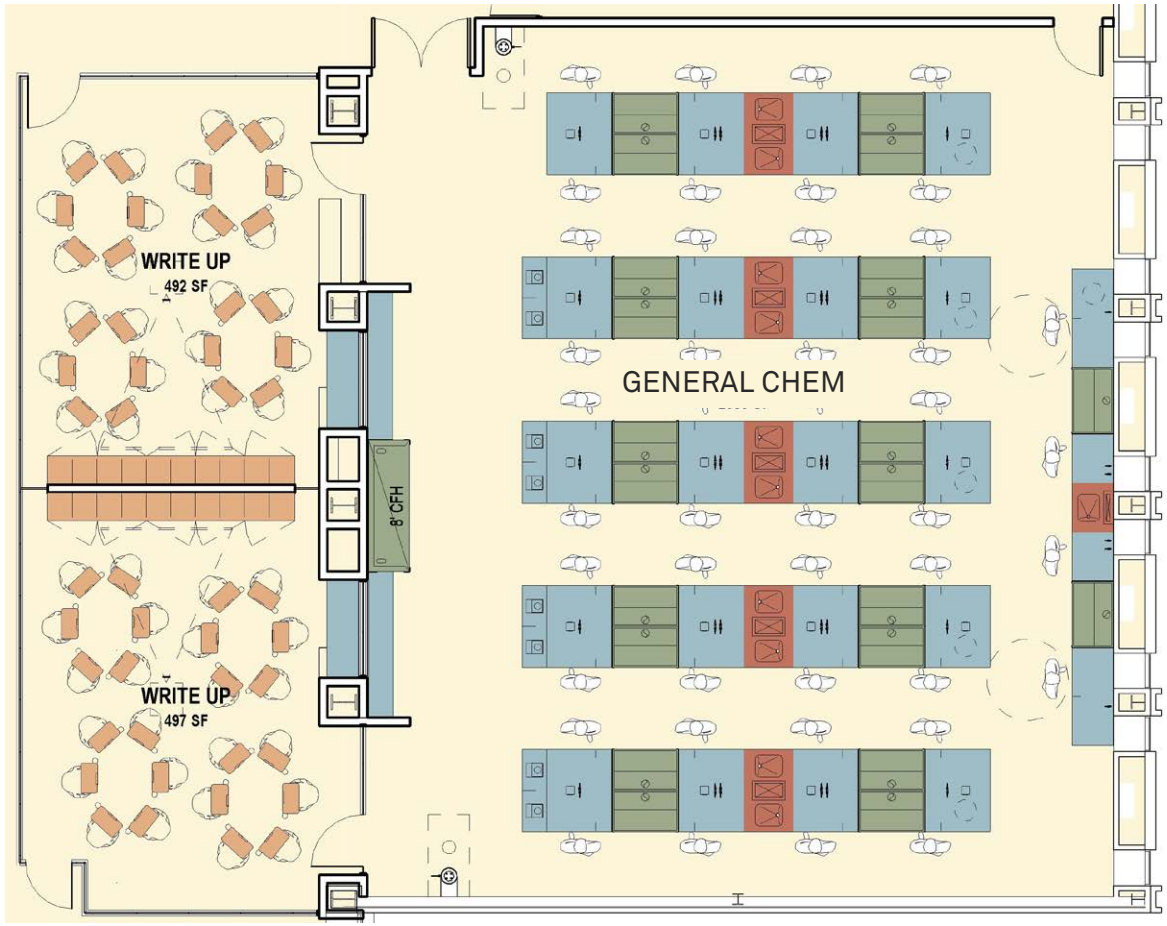


18-SEAT WRITE-UP ROOM,
WITH MOVABLE CHAIR LAYOUT OPTIONS

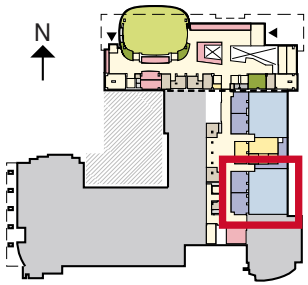



TYPICAL WRITE-UP ROOM COMPONENTS

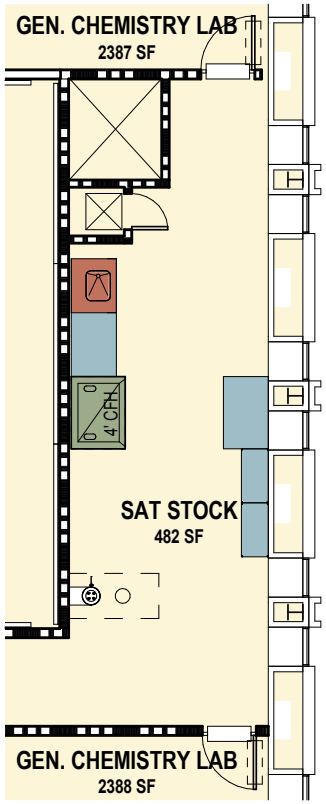
# PROGRAM SPACE: GENERAL CHEMISTRY TEACHING LABORATORY



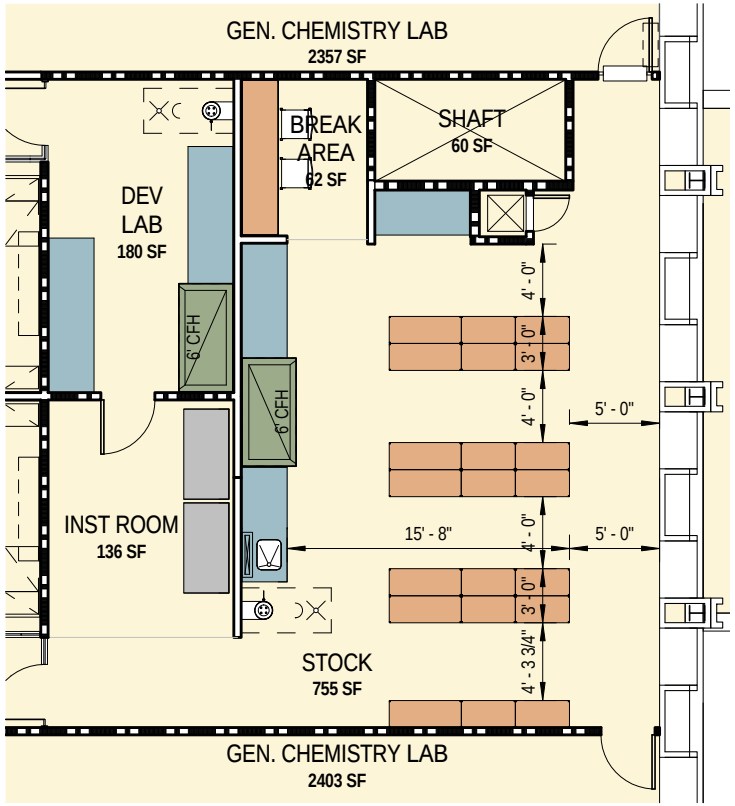

Two General Chemistry teaching labs are located on the basement, ground and second floors of Daniels. Each of these labs accommodates two sections of 22 students, and features a Write-up room dedicated to each section. Students are provided with individual benches, and share ventilated enclosures at a ratio of 2:1. Each lab includes two accessible benches.



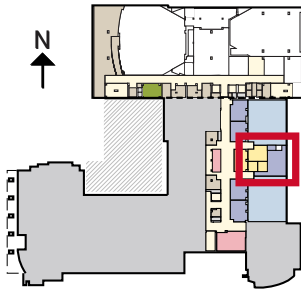
# PROGRAM SPACE: GENERAL CHEMISTRY TEACHING LABORATORY




SATELITE STOCKROOM
GROUND AND SECOND FLOOR

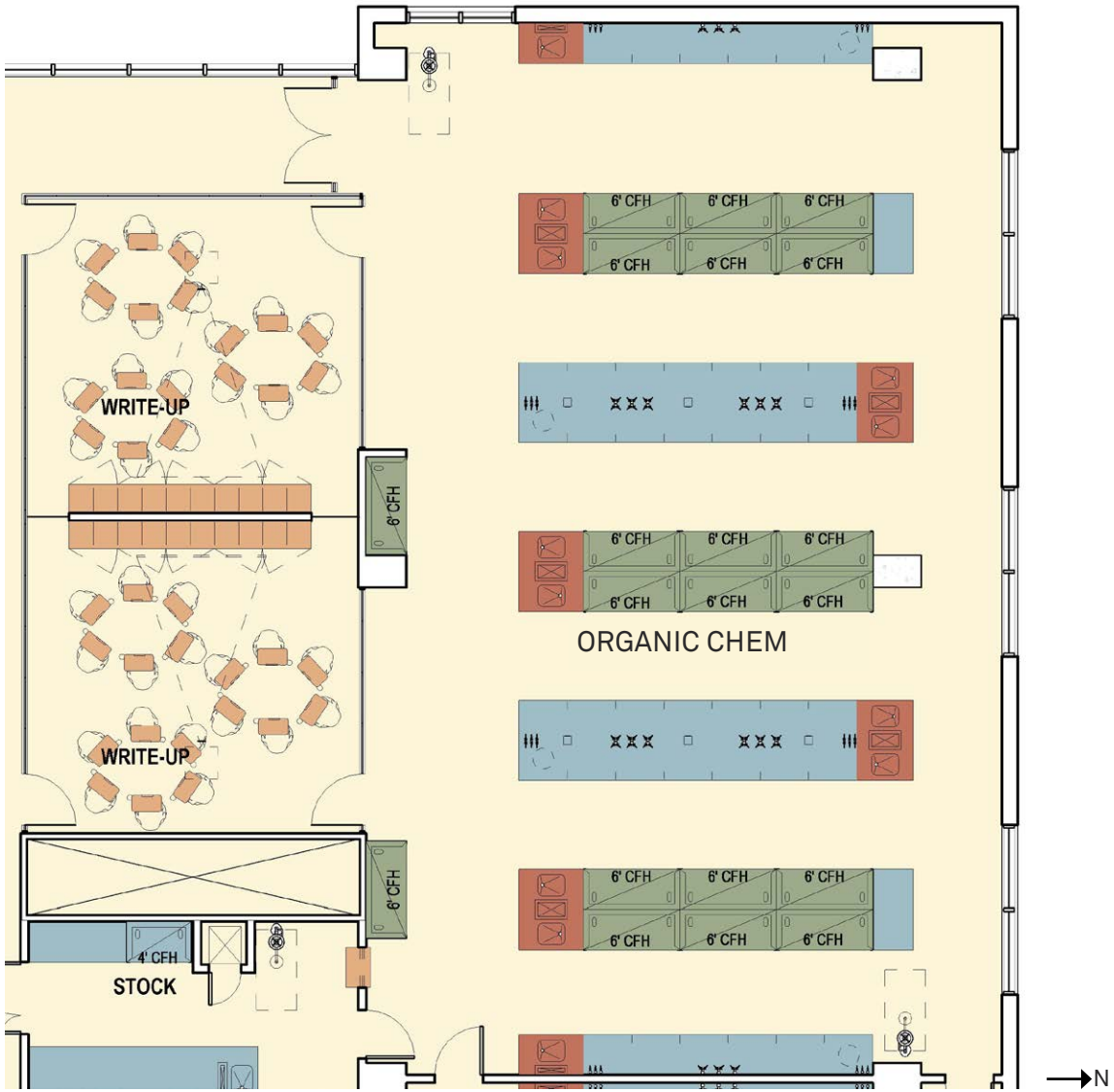



MAIN BASEMENT LEVEL STOCKROOM

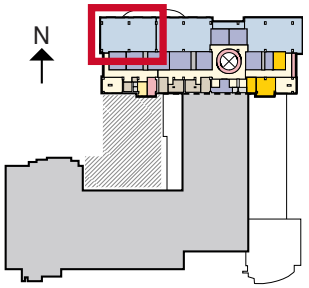



The General Chemistry labs are served by a large main stock room located on the basement floor of Daniels. The stock room features a chemical dumbwaiter that allows the transport of materials to satellite stock rooms on both the ground floor and second floor of Daniels. This configuration allows the department to consolidate chemical distribution for the General Chemistry labs into a single stacked location, with chemical transport away from the public corridors of the building.

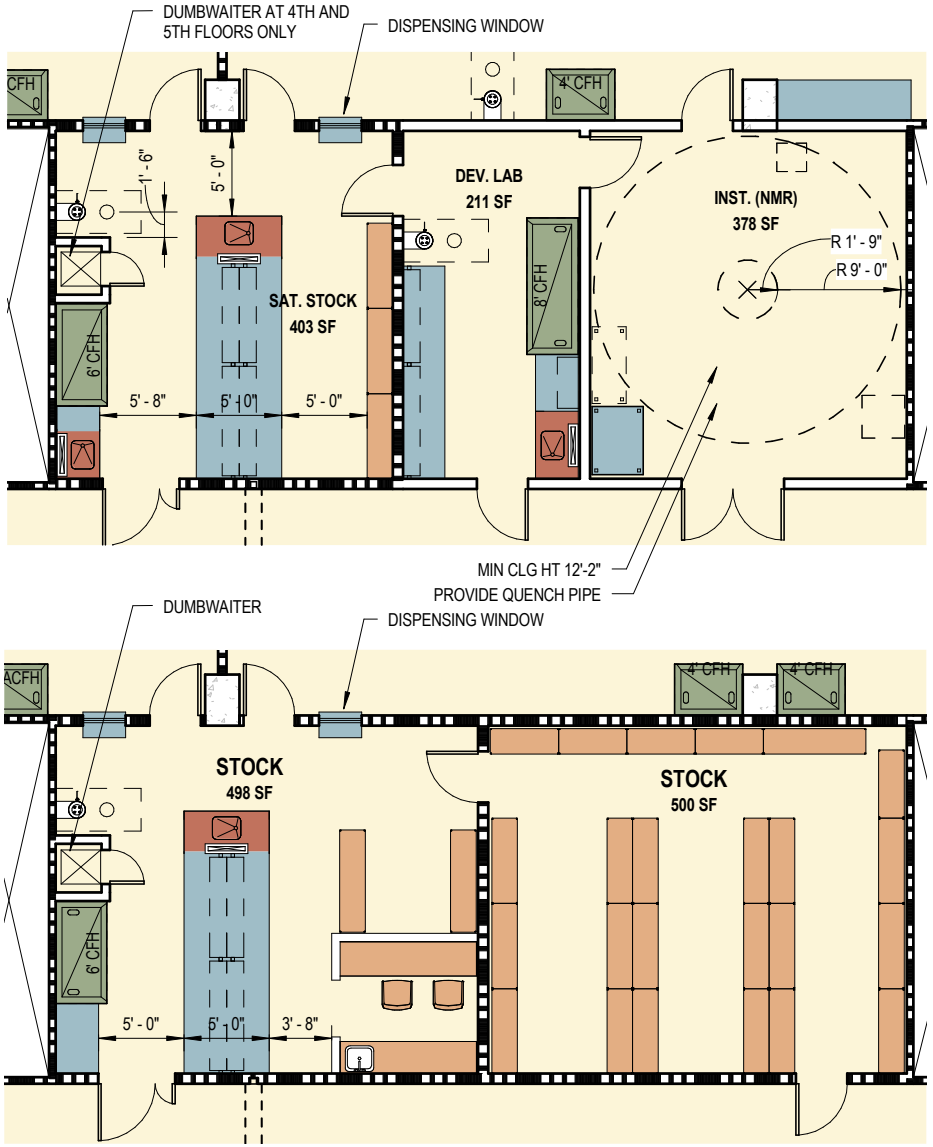
# PROGRAM SPACE: ORGANIC CHEMISTRY TEACHING LABORATORY




The Organic Chemistry teaching labs are located on the 5th and 6th floors of the New Chemistry Tower. Each floor contains three labs, including an Advanced Gen Chem / Inorganic lab on the 5th floor and an Advanced Organic Lab on the 6th floor. Each of these labs accommodates two sections of 18 students, and features a Write-up room dedicated to each section. Students are provided with individual benches, and share fume hoods at a ratio of 2:1. Each lab includes two accessible benches and fume hoods.

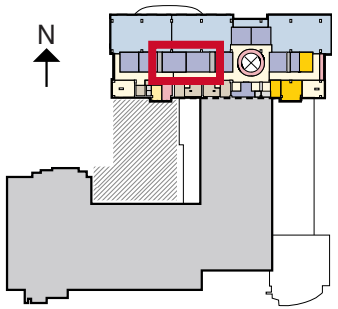


# PROGRAM SPACE: ORGANIC CHEMISTRY SUPPORT

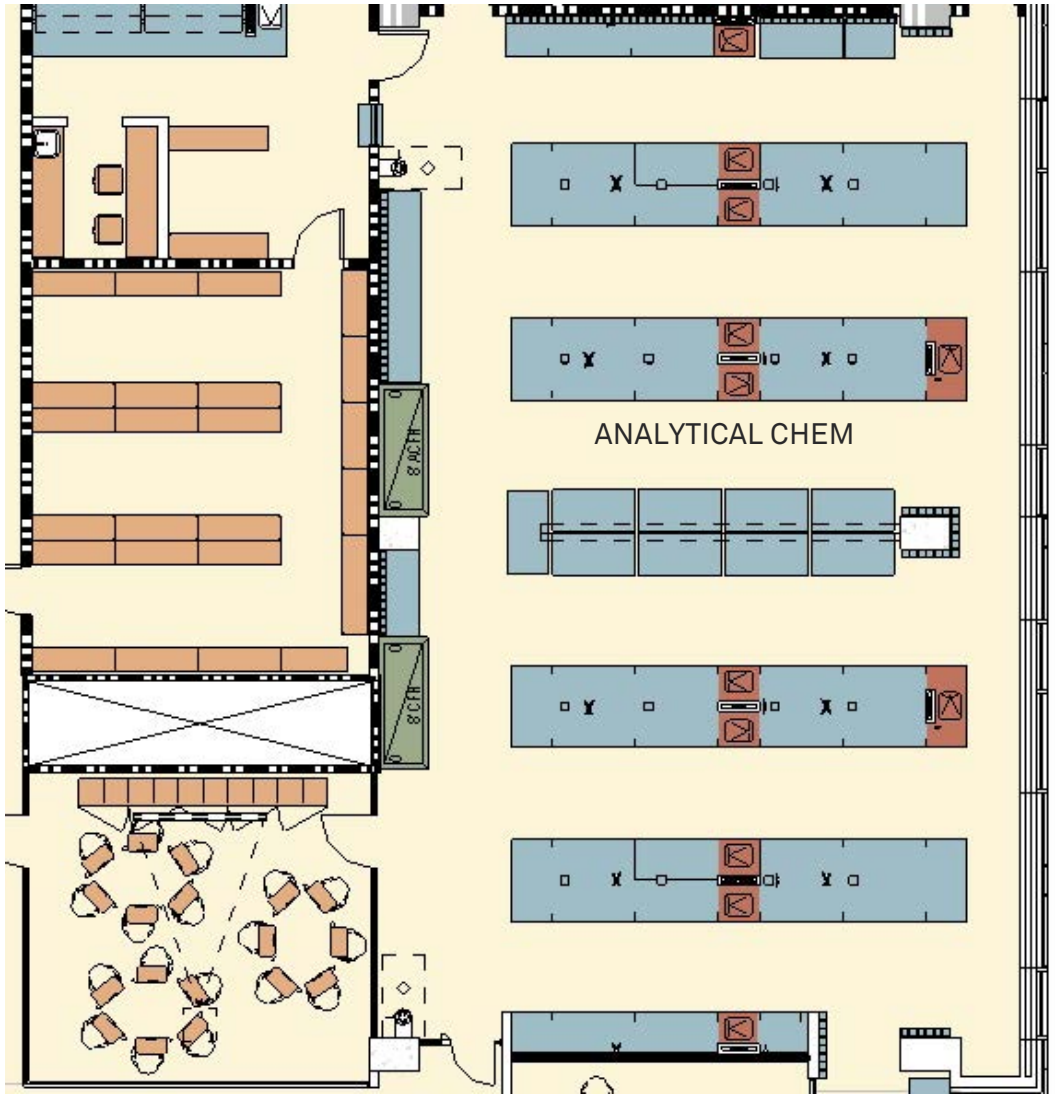



The Organic Chemistry labs are served by a large main stock room located on the fifth floor of the building. The stock room is centrally located on the floor to provide chemical distribution to each of the three labs. A chemical dumbwaiter provides transport of materials from the main stockroom to a sixth floor satellite stock room, limiting chemical travel in corridors to periodic restocking deliveries from the service elevator.

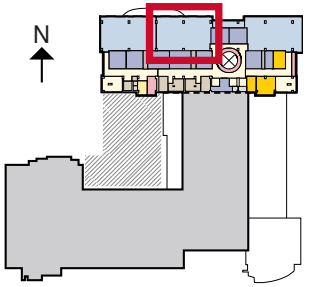
The Development Lab is utilized by lab directors for the preparation of experiments. This room has direct access to both the satellite stock room and NMR room, with close proximity to the lab director's office located directly across the corridor.



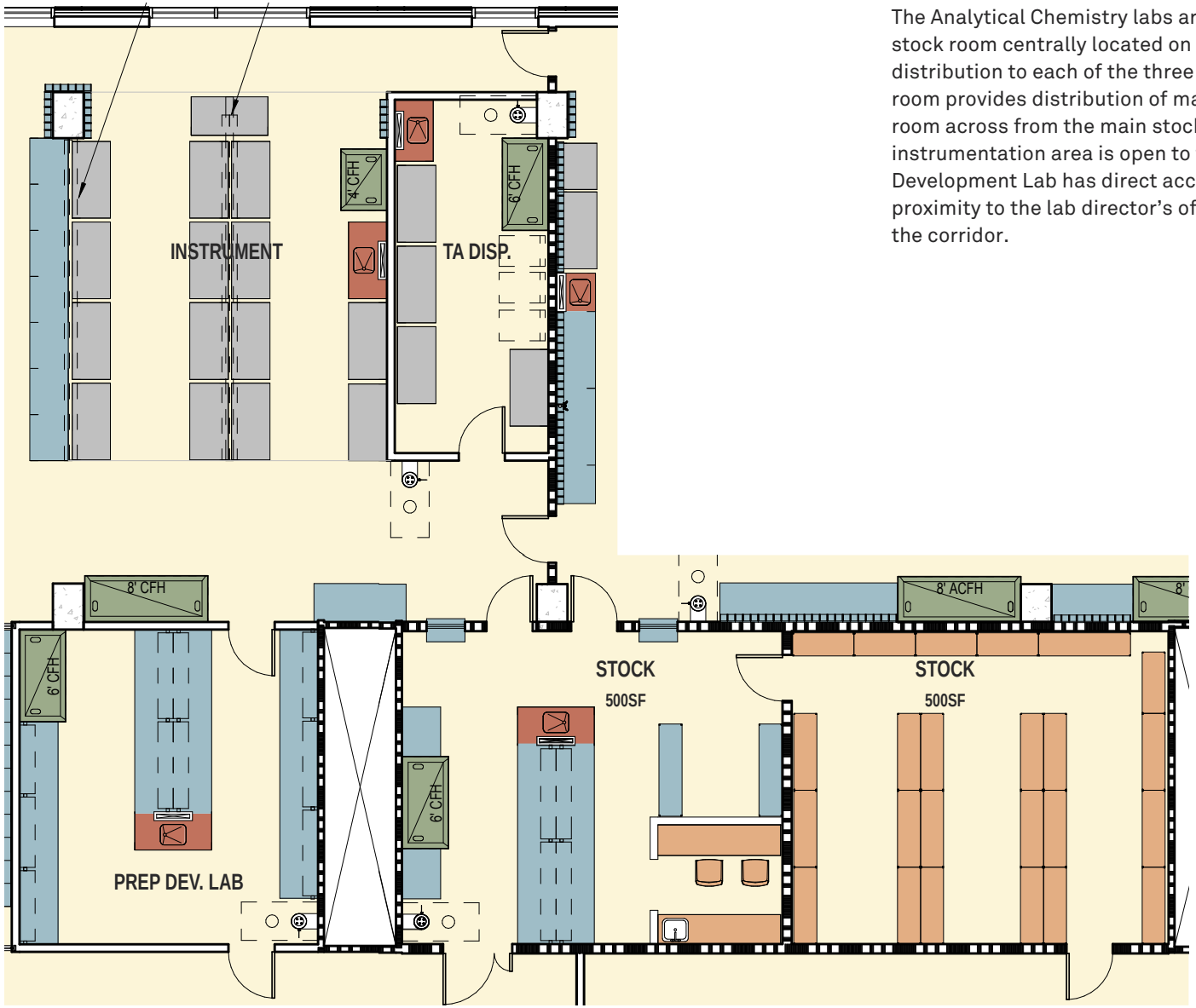
# PROGRAM SPACE: ANALYTICAL CHEMISTRY TEACHING LABORATORY



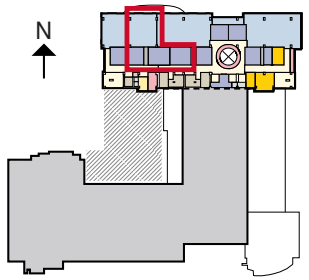

The Analytical Chemistry teaching labs are located on the 7th floor of the New Chemistry Tower. Each of these three labs accommodates two sections of 18 students, and features a Write-up room dedicated to each section. Students are provided with individual benches in groups of 4, with shared instrumentation benches. Each lab includes two accessible workstations.



# PROGRAM SPACE: ANALYTICAL CHEMISTRY SUPPORT




The Analytical Chemistry labs are served by a large main stock room centrally located on the floor to provide chemical distribution to each of the three labs. A TA dispensing room provides distribution of materials to students from a room across from the main stock room, while an adjacent instrumentation area is open to the lab. The Prep and Development Lab has direct access to the labs with close proximity to the lab director's office located directly across the corridor.

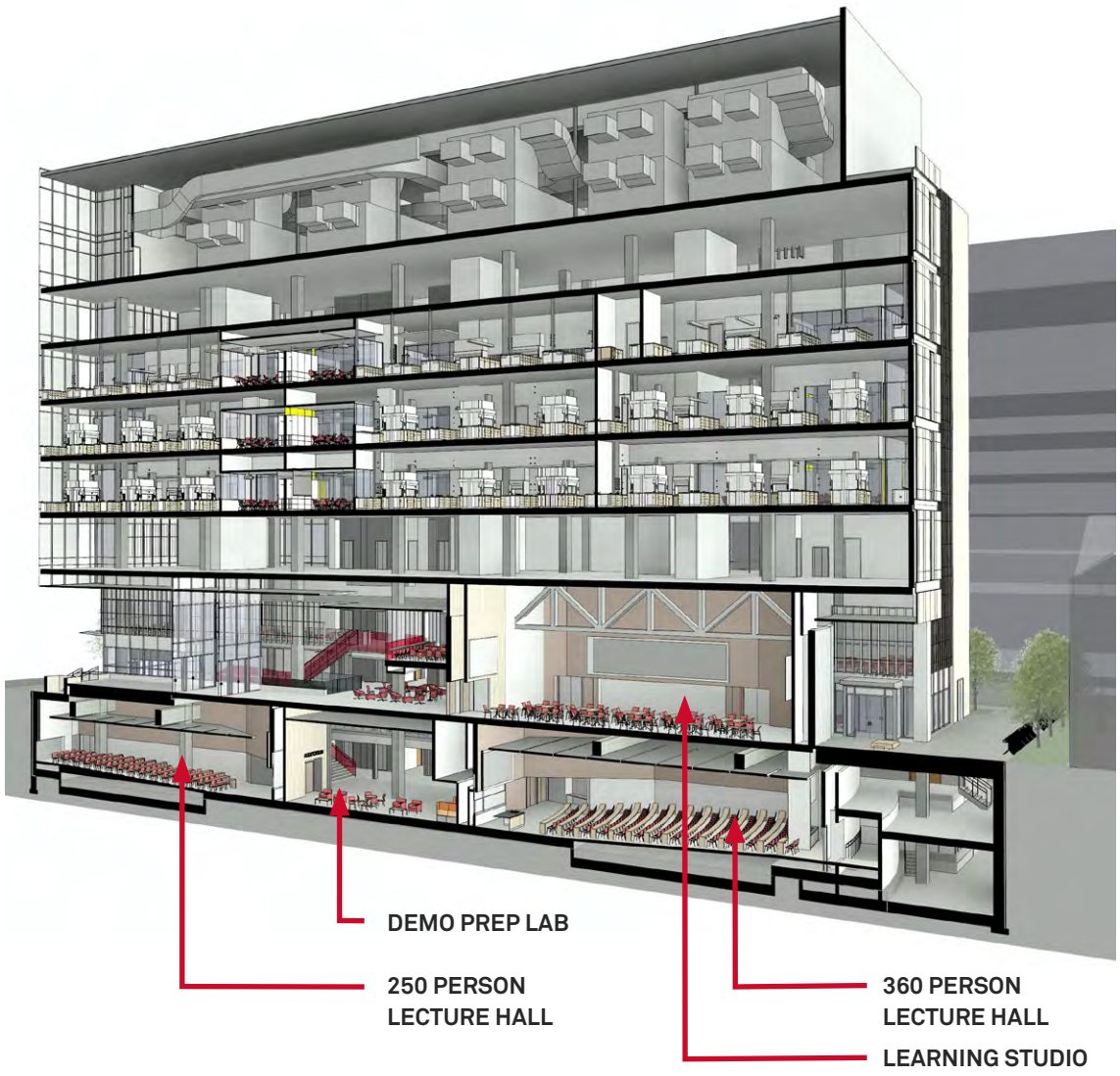


# PROGRAM SPACE: LECTURE HALLS

The Sub-Basement of the New Chemistry Building houses two large undergraduate lecture halls: a 360 student room, and a 250 student room. A monumental staircase provides access to this lowest level from Mills Street to the East and the basement level of Daniels to the south (at grade access from Johnson Street). A shared interaction space located between these two lecture halls provides students with an open area for pre-class queuing and post-class question and answer sessions.

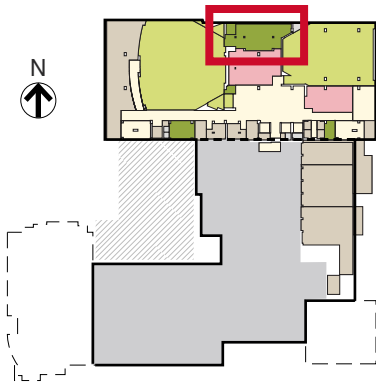
Located on the ground floor directly above the 360 student lecture hall, a 120 student active learning  studio provides the Chemistry Department with an adaptable space for both classes and events, with the potential to spill out into the adjacent lobby for large events.

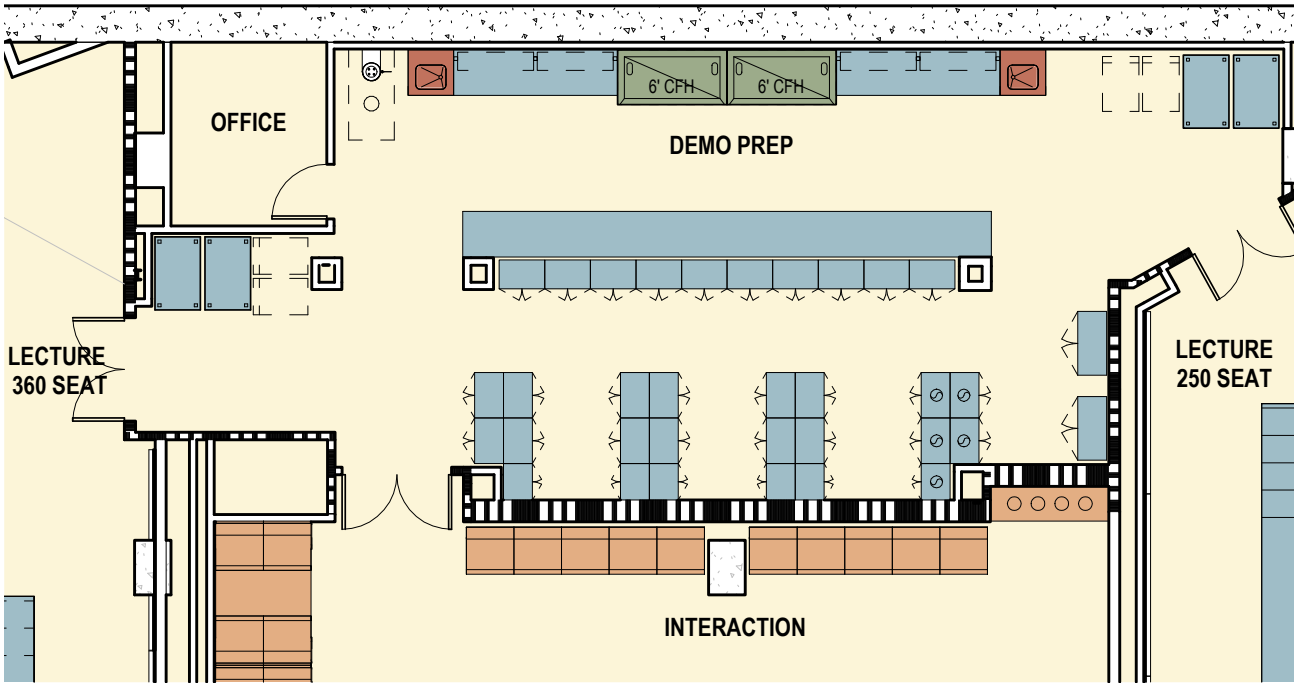
By stacking the 120 and 360-student rooms, columns from the floors above can be transferred through a shared transfer structure, enhancing sight lines through the reduction of columns within both rooms.



# PROGRAM SPACE: DEMONSTRATION PREP LAB

The Demo Prep lab is centrally located on the sub-basement level between the 360 and 250 seat lecture halls. The room features direct access to the demonstration bench of both lecture halls minimizing travel distance between the lab and presentation areas. Ventilated storage for chemicals, fume hoods, sinks and bench space are provided within the lab, as well as a small office for the lab personnel.

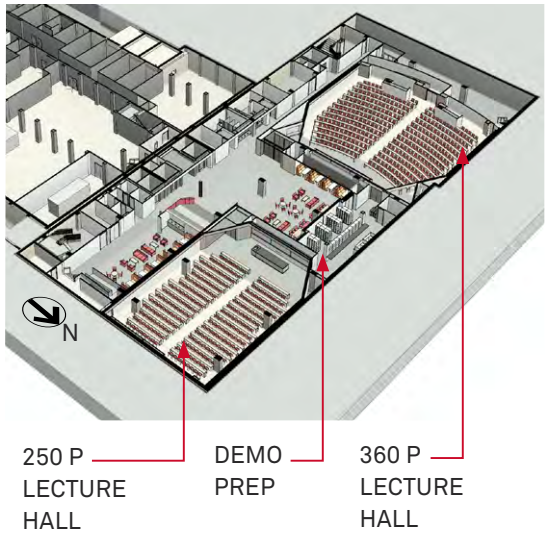


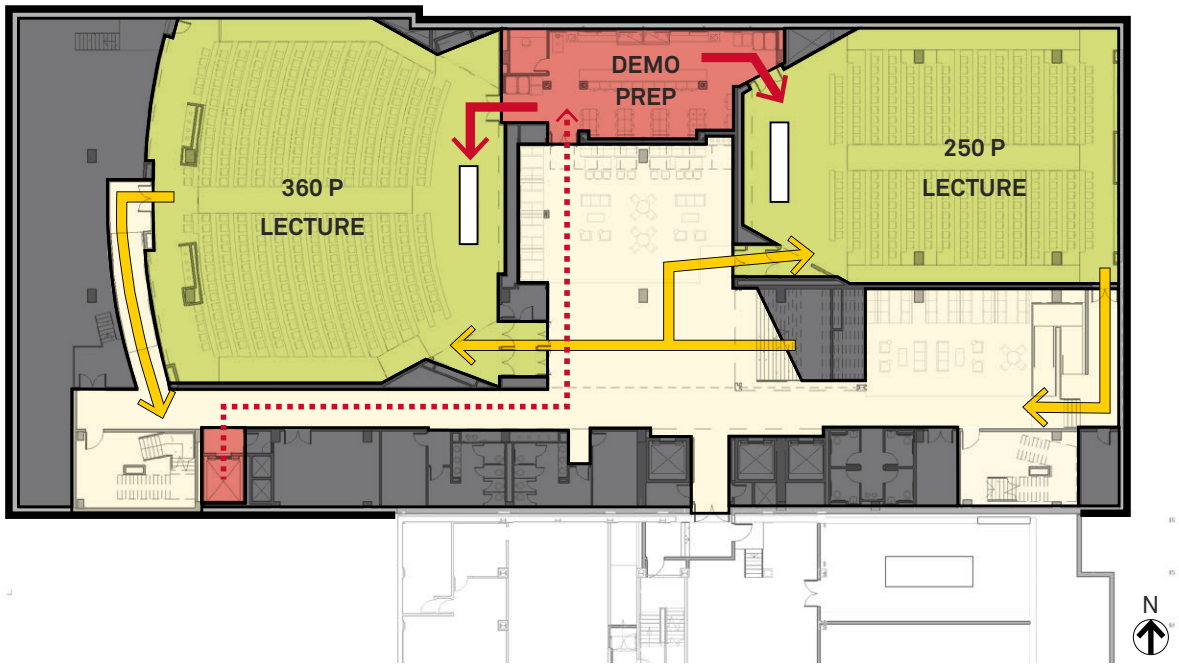



# PROGRAM SPACE: SUB-BASEMENT LECTURE HALL SERVICES

The configuration of the sub-basement floor is driven by the location of structure, proximity of lecture halls to the demo prep lab, and circulation requirements. With a centralized demo prep area, chemicals can be transported to the lecture halls without crossing the path of student circulation. This configuration provides a back-of-house route for chemical travel, allowing the space outside the entrance of the lecture halls to be utilized for student interaction before and after class.

A monumental staircase connects the lower level lecture halls to the basement level of Daniels and a ground floor entrance at Mills Street. Required to accommodate high volumes of student traffic to the halls, this wide stair serves as the primary circulation path to the sub-basement, with additional access provided by the building's elevators and stair towers. Egress from the lecture halls is provided by the stair towers and a horizontal exit into Daniels Sub-basement, with openings to the monumental stair closed by vertical shutters in the event of a fire.



# PROGRAM SPACE: 360 AND 250-SEAT LECTURE HALLS

Both lecture halls within the sub-basement are designed for accessibility and feature low sloped floors. Instead of traditional fixed seating, a combination of tabletops and movable chairs provide flexibility for small group discussions. Located on shallow tiers, chairs are provided with a flat area to freely rotate, fostering interaction between shared tables. Sight lines throughout the lecture hall are free of columns, while raked seating provides unobstructed views to the presenter and projection screens.

Additional technology within each of the two large lecture halls include equipment for the projection of live detailed images of demonstrations and a voice lift system to support student speech. Power will be provided at the fixed tables and available to each seat. A robust WiFi system will be included to support student access to technology.

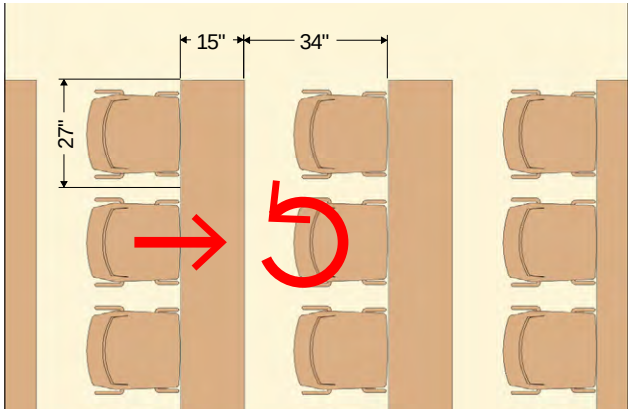
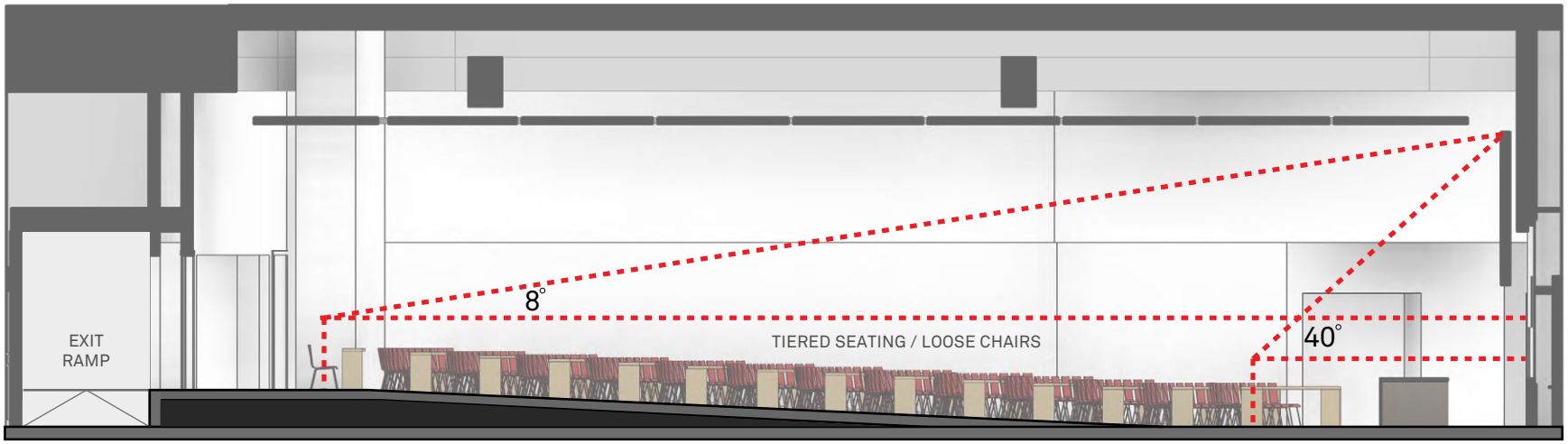
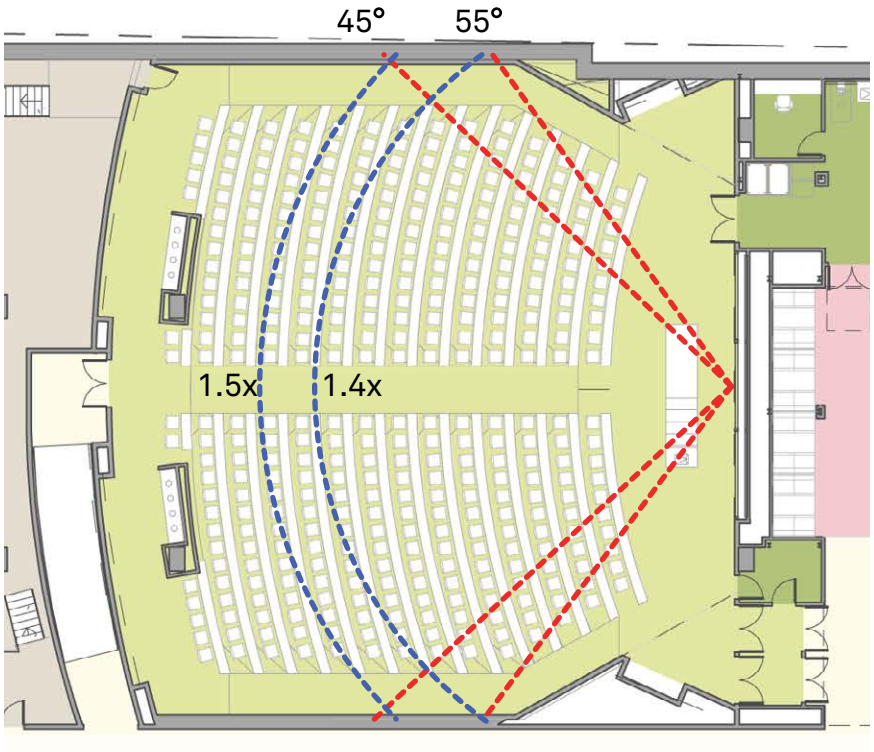



TABLE AND MOVABLE CHAIR SEATING FOR GREATER INTERACTION




360-SEAT LECTURE HALL

# PROGRAM SPACE: 360 SEAT LECTURE HALL

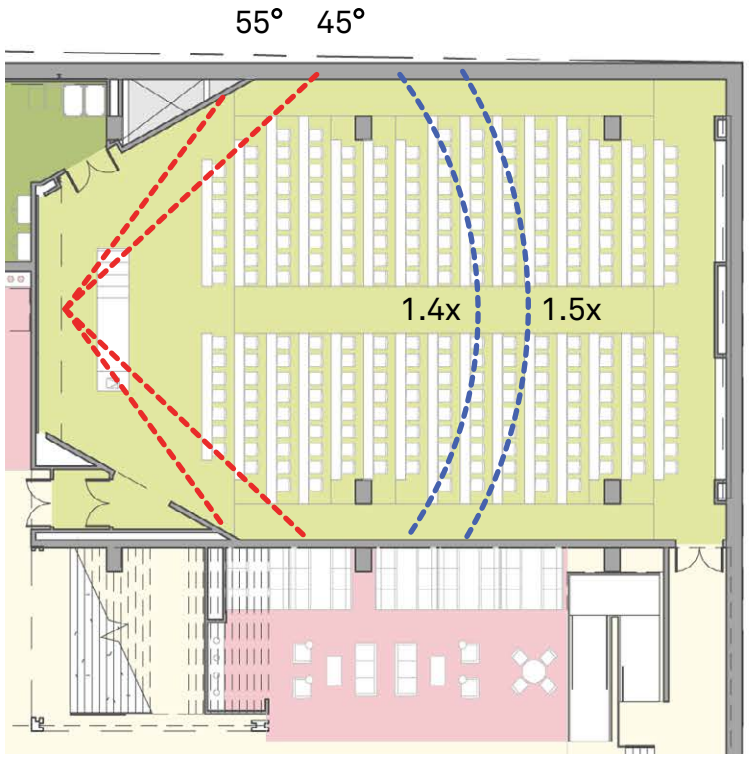



360 SEAT LECTURE HALL: OPTIMAL VIEW ANGLE AND SEAT TO SCREEN DISTANCE

The 360-Seat Lecture Hall features arced rows of built-in tables and loose chair seating for both traditional lectures and small group discussions. Dual projection screens, fixed periodic table charts, and a sliding multi-panel white board system allows for a range of presentation possibilities.

Tower columns are transferred at the 4th floor to the back of the lecture hall, minimizing view obstructions throughout the room. A majority of sightlines to the presentation area fall within a good on-axis viewing sector.

# PROGRAM SPACE: 250-SEAT LECTURE HALL




250 SEAT LECTURE HALL: OPTIMAL VIEW ANGLE AND SEAT TO SCREEN DISTANCE

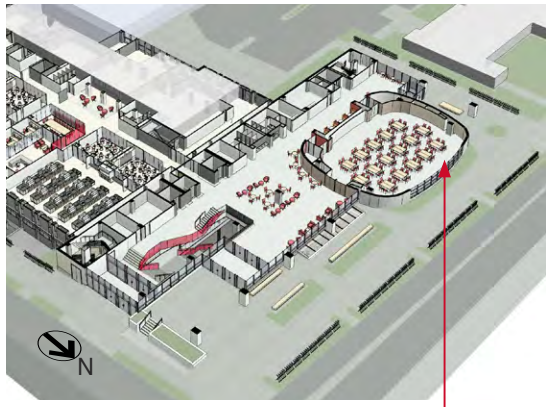
The 250-Seat Lecture Hall features straight rows of built-in tables and loose chair seating for both traditional lectures and small group discussions. Dual projection screens and a sliding multi-panel white board system allows for a range of presentation possibilities.

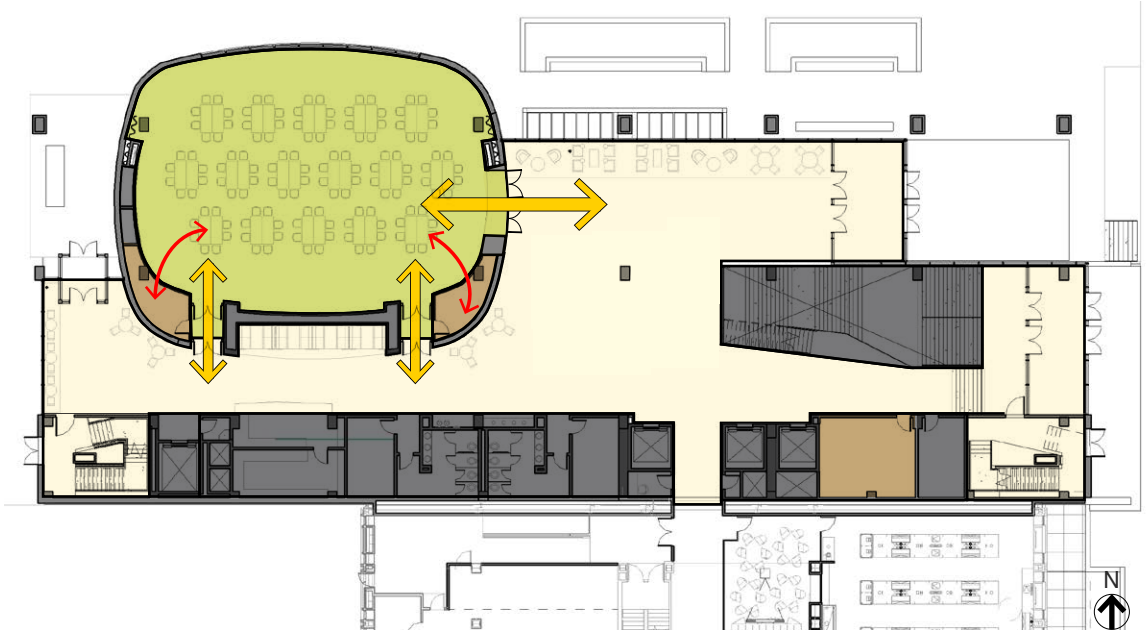
Tower columns are transferred at the ground floor to the perimeter of the lecture hall, minimizing view obstructions throughout the room. A majority of sightlines to the presentation area fall within a good on-axis viewing sector.

# PROGRAM SPACE: LEARNING STUDIO

The ground floor learning studio is a flexible alternative to traditional lecture halls. Designed for 120 student classes, the room features flat floors, multiple points of display and flexible furniture solutions which will enable omni-directional orientation, forward facing instruction, small group/team based learning and smaller venue presentation events. Adjacent locations for audio/visual and table/chair storage are integrated into the edge of the room for rapid reconfiguration.

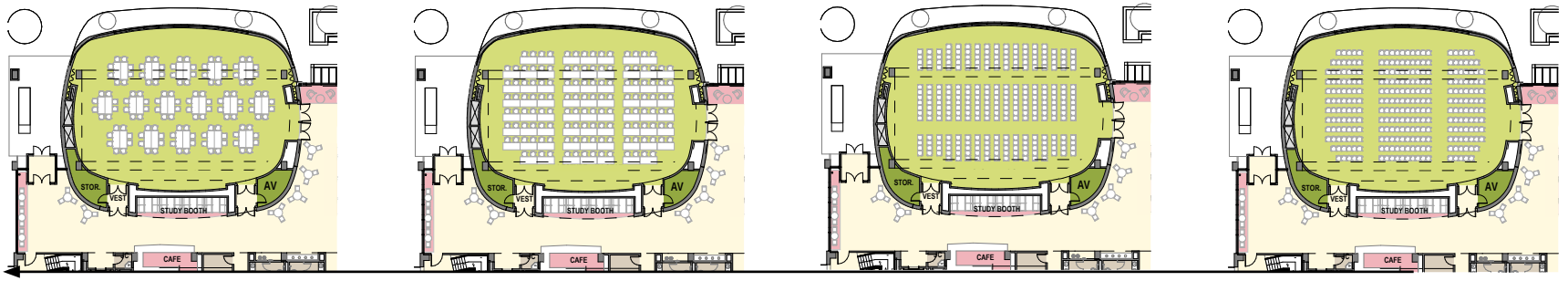
The large, column-free space features exterior glazing and a retractable curtain, allowing both day-lit views to the landscape and full blackout for projection visibility. The Learning Studio's location on the ground floor and projection outboard of the façade toward University Avenue give the room a public presence. Activities within the Learning Studio will spill out into the adjacent lobby during larger events.




THE LEARNING STUDIO IS DIRECTLY CONNECTED TO THE LOBBY FOR LARGE EVENT BREAK-OUT, WITH ADJACENT STORAGE FOR RAPID FURNITURE RECONFIRURATION

# PROGRAM SPACE: LEARNING STUDIO




SEATING 120P
TABLE SIZE: 24” X 72”
SEATS: 15 G OF 8
CHAIR SIZE: 22.3” W
ROW DEPTH: N/A

SEATING 136P
TABLE SIZE: 24” X 72”
SEATS: 8R OF 18
CHAIR SIZE: 22.3” W
ROW DEPTH: 58”

SEATING 243P
TABLE SIZE: N/A
SEATS: 17 R OF 15
CHAIR SIZE: 22.3” W
ROW DEPTH: 3’6”

SEATING 288P
TABLE SIZE: N/A
SEATS: 12R OF 22
CHAIR SIZE: 22.3” W
ROW DEPTH: 3’6”

# SYSTEMS DESCRIPTIONS

## SYSTEMS SUMMARIES

-UTILITIES PLAN / CIVIL
-LANDSCAPE
-STRUCTURAL
-MECHANICAL
-ELECTRICAL
-PLUMBING
-FIRE PROTECTION

# SUMMARY

Given the technical complexity of the project, the design team evolved the systems components more than usual for this phase of a project. The following pages describe the level of solution expected.

## STRUCTURAL

- Several unique dimensions have been explored to make the solution real. Vibration criteria and a desire to maintain an open floor plate drove the 31'6" x 31'6" bay size for the lab block. Using 15' floor to floor and a flat voided slab design will simplify the underside of the structure and create a clear plenum space for MEP systems.
- The biggest challenges in the base had to do with providing column free large span spaces for the two large lecture halls and the learning studio. This has been accomplished with transfer girders over the learning studio and long spans over the two lecture spaces.

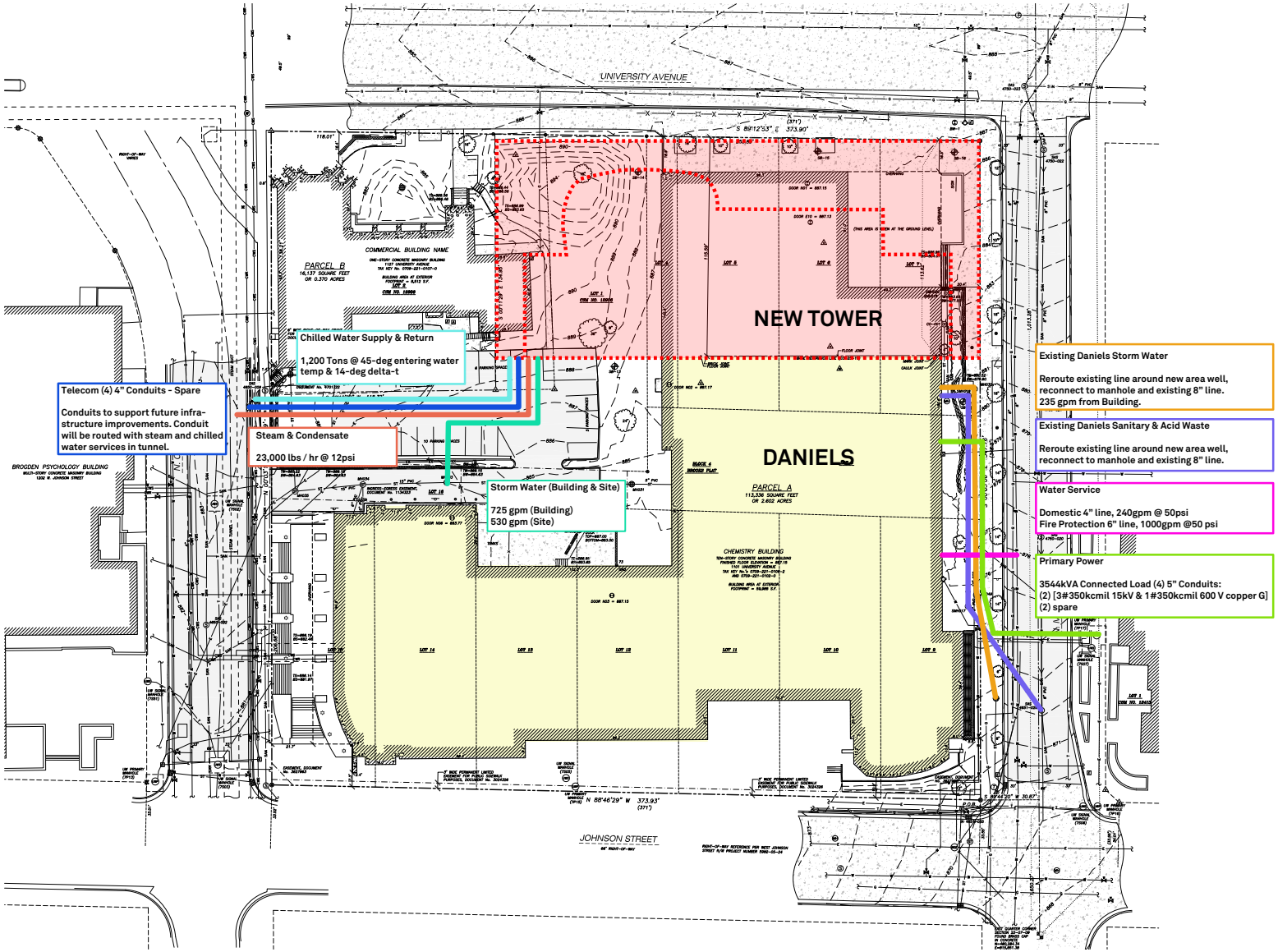
## MECHANICAL / ELECTRICAL PLUMBING

- For a fume hood intensive building like this one, our focus has been on sizing the equipment, the vertical shafts and the penthouses for the new addition. This has led to a tight integration of mechanical with architecture and structure.
- The exhaust system on the roof of Daniels has been tuned up and simplified from the earlier study. This saved money but also simplified the logistics of phasing the connections from the current forest of exhaust stacks covering the Daniels roofscape.
- Electrically, the same effort took place, namely, to size the equipment and insure that the spaces provided are adequate.
- The new addition will be fully sprinklered as will the three floor renovation of Daniels. A future project will be to sprinkler the remainder of Daniels.

## SITE / CIVIL

- A great deal of attention was given to the site and landscape around the base of both the new tower and the existing Daniels Building. Provisions for bike parking along University Avenue and convenient to the multiple entrances at the corners defines the ground plane. Tree planting softens the north sides of the complex. Preliminary meetings were held with the city to test these ideas as well as the zoning decisions described on pg. 61-62.

# UTILITIES PLAN



# CIVIL

## DESIGN PARAMETERS

The following codes and guidelines will be followed.

- Wisconsin Department of Safety and Professional Services Rules and Regulations
- U.S. Department of Justice 2010 ADA Standards for Accessible Design
- Division of Facilities Development Standards and Guidelines
- Wisconsin Department of Natural Resources Rules and Technical Standards
- University of Wisconsin  Madison Recommendations and Campus Standards
- City of Madison Design Guidelines
- Wisconsin Department of Transportation (WisDOT) Standards and Standard Specifications for Highway Construction

## SITE PREPARATION

Prior to commencing construction, sediment and erosion control practices shall be installed per the approved erosion control plan and shall remain throughout all phases of the work.  After these measures are installed, site preparation can begin, including removing all topsoil from proposed improvement areas or where elevation will change.  Remove existing vegetation to the least extent necessary to undertake the work. Site demolition includes a two-story, stone and brick structure on the northeast corner of the construction area.  Site removals also include sanitary sewer lateral, storm sewer lateral, concrete pavement to the extents of the project and existing parking lot pavement.

## SITE EARTHWORK

Excavation will be necessary to remove soils to allow for building construction, utility construction and to grade the site around the building to approved final grades.  Fill required for building, utility and site construction will consist of earth fills, granular fills, structural fills and topsoils.  All fills are defined in the WisDOT Standard Specification for Highway Construction manual.

## SITE DEVELOPMENT

Existing parking lot No. 55 will be removed and replaced to allow for utility construction.  Site amenities will include bicycle parking areas, landscape screenings, benches, landscape lighting and possible retaining walls at the east entrances.

## SITE UTILITIES

All utilities will be constructed per City of Madison standards and specifications.  A new combined water service and fire protection service will be installed from Charter Street.  An 8” sanitary lateral will be installed from Mills Street.  This will require curb and pavement in Mills Street to be removed and replaced to allow for sewer construction.  A new storm sewer and sanitary sewer lateral will be required on the west side of the existing Daniels Tower.

The following utilities will be provided:

From N. Charter Street:

- Steam @ 23,000 lbs/hr (Peak Winter Load)
- Steam @ 2,000 lbs/hr (Minimum Summer Load)
- Chilled Water @1,200 tons/hr
- Storm Water @ 725 gpm

From N. Mills Street:

- Water Service @ 4” line, 240 gpm
- Fire Protection @ 6” line, 1000 gpm
- Storm and Sanitary Sewers @ 8” Each

# LANDSCAPE

## SUMMARY

Landscape Architectural elements associated with this sustainable design will include site planting, site amenities and exterior plaza / gathering spaces to allow for flexible, outdoor program activities while creating a strong physical and visual link to the building and pedestrian/vehicular corridors along University Avenue and Mills Street.

- The following codes and guidelines will be followed.
- Wisconsin Department of Commerce Safety and Buildings Code
- U.S. Department of Justice 2010 ADA Standards for Accessible Design
- Division of Facilities Development Standards and Guidelines
- Wisconsin Department of Natural Resources Rules and Technical Standards
- University of Wisconsin  Madison Recommendations and Campus Standards
- City of Madison  Design Guidelines

## PLANTING

The site plantings will be used to accent the pedestrian entrances, building foundations, plazas, bike parking areas and outdoor common areas.  Landscaping will also be used to direct desirable views, while buffering undesirable views, screening bike parking and mechanical equipment at grade and blending the proposed improvements within the context of the adjacent properties.  These plant materials will be native species and/or preferred cultivars that perform best within the campus and specific project micro-climatic conditions posed by building and site orientation and directional exposure to sunlight, shade and wind.  Two sides of the site are also adjacent to heavily traveled streets whereby the plant selection will need to be hardy enough to survive undesirable effects of salt spray and snow.

## AMENITIES

Site amenities are expected to include planting beds, benches, trash receptacles, bicycle racks and table/chair combinations within the project site.  These amenities will match UW-Madison design standards. As the design develops, other interesting elements may be incorporated into the landscape to complement the architecture.  Sustainable design elements will also be considered i.e. for example, permeable paving.  Site lighting will be integral to the design and will be closely coordinated with architecture and landscape elements to provide a safe and aesthetically pleasing experience.

## IRRIGATION

An automatic irrigation system will be considered for the landscape areas due to many of the planting beds being located over building structure. However, the plant species being selected are for the most part self-sustaining under normal weather conditions once established.

## EXTERIOR PLAZA

Outdoor entry plazas and gathering spaces will be scaled to provide human scale to the space with appropriately sized open areas for circulation and multiple seating and gathering options built into the landscape areas.  These areas will be designed to be flexible in their uses as well as accessible from the main entrance.  The plaza and walkway areas will be constructed of a durable surface to allow for accessibility and easy maintenance.  The plaza spaces will be designed to complement the architectural forms and materials used on the building.  Bike parking areas are being integrated within planting areas wherever possible in order to minimize their overall visual impact while still providing easy access to and from the building and site.

# STRUCTURAL

## DANIELS RENOVATION

### GENERAL STRUCTURAL SCOPE

The renovation of the existing Daniels Tower will be performed to accommodate the New Chemistry Tower to the north.

### DEMOLITION

Other than the demolition of the northern lecture hall wing, the remaining tower will have selective demolition of areas primarily at the basement, first and second floors and roof. Selective demolition will include foundation wall removal for new door and area wells, floor framing and supporting structure demolition and coring and cutting slabs and walls.

### RENOVATION

New structural floor framing will be provided at reconfigured first and second floor areas. Foundation wall reinforcement and footing underpinning will also be provided for the new openings and foundation supports. Miscellaneous lintels and floor and roof infilling will also be needed. The roof of the existing tower will also need to support a new screen wall and mechanical duct system around the perimeter.

## NEW TOWER

### GENERAL STRUCTURAL SCOPE

The proposed New Chemistry Tower is located adjacent to the north side of the Daniels Chemistry Building. Although the new floors will align with the existing Daniels Chemistry Building at a few floors, the structure will be separated with a joint and expansion joints will be provided between the new and existing. A mechanical floor at the main roof level will provide the building with mechanical space. The top of the main roof is approximately 107 feet above University Avenue and the top of the mechanical roof is approximately 139 feet (top of parapet at 142 ft).

The structure will primarily be comprised of a concrete frame supported on spread footings. Steel framing will be used to support the mechanical roof.

### BUILDINGS AND STRUCTURES

The New Chemistry Tower will be built on the site of the current lecture hall wing of the Daniels Building. This building wing will be demolished. The Wesley Foundation building is located to the west at the intersection of Charter Street and University Avenue. A portion of the Wesley Foundation building will be demolished as well. The new tower will front University Avenue and have a main entrance off of Mills Street on the east side. The existing and new towers will have a CMU wall to provide the required fire barrier between buildings. A separation joint between the new and existing towers is anticipated to be at least 6 inches with covers capable of 3 inches of movement.

### FUTURE EXPANSION

The New Chemistry Tower will not be designed for vertical expansion. The floor-to-floor heights of the New Tower do not align with the Shain Tower, requiring ramping in a potential future addition infill to the south. This future horizontal addition would be separated with an expansion joint.

# STRUCTURAL

## FOUNDATION SYSTEM

### Gravity Loads

Based on previous soil borings and geotechnical reports for the adjacent Daniels and Mathews buildings, a foundation system of conventional spread footings can be used to support the New Chemistry Tower. The existing soil, per the previous borings, is predominantly sand and silt.

### Soil Retention

Concrete basement walls will be used. Waterproofing membrane shall be applied to the exterior wall face. Backfill shall be free draining compacted fill with a perimeter perforated drain tile around the perimeter of the basement. During construction, the excavation along the north, east, and west sides of the New Chemistry Tower will require a soil retention system due to the proximity of the excavation to the streets and right of way.

### Slab-On-Grade

Cast-in-place concrete slab thickness is 6 inch and reinforced with steel and or macrofibers. The slab is to be underlain with a waterproofing membrane, mud slab and 12 inches of free draining granular stone with drain tile and sump system. The underdrain system along with the perimeter drain tile system will be installed to collect any ground water and relieve hydrostatic pressures caused by varying ground water elevations.

## FRAMING SYSTEMS

Based on the structural performance characteristics required for laboratories, such as a stringent vibration criterion, a structural concrete frame system is recommended. The proposed system is a cast-in-place voided concrete slab supported by concrete columns. This structural system offers benefits such as economy, floor vibration control, program planning, and utility accommodation. The typical bay spacing of 31’-6” by 31’-6” has been selected to accommodate the proposed laboratory planning module and provides economical spans for the structural system.

### Ground Floor Framing

Three columns will be transferred at this level to create a column free space for the 250 seat lecture hall in the northeast corner of the New Chemistry Tower. These columns will be transferred with a 6 feet deep steel transfer truss spanning 61 feet in the north-south direction. Likewise four 30-inch x 66-inch concrete beams will transfer floor loads from the meeting room in the west. Two of these concrete beams will span 80 feet in the north-south direction and the other two will span 72 feet in the east-west direction. The floor system will also step to create a plaza slab around the east, north and west sides.

### Learning Studio Roof Framing

Wide-flange beams about 12 feet on center hang from the truss above the meeting room in the west. 3-inch metal deck spans east west

### Fourth Floor Framing

Over the Learning Studio, two 12 to 14 foot deep steel transfer trusses each support loads from two columns from above. The trusses span 72 feet in the east-west direction and provide for a column free space for the ground floor and sub-basement lecture halls at the northwest corner of the New Chemistry Tower.

### Mechanical Floor Framing

Four 24 inch by 30 inch concrete beams will transfer steel columns to the main concrete columns below. This allows the Mechanical Floor to hold the large mechanical equipment needed. On the north side of the floor, 8” HSS Square columns at 10’-6” on bear on top of a 5 foot high concrete curb and provide support for louvers.

### Mechanical Roof Framing

Deck: 1 ½” deep metal roof deck.

Beams / Girders: Structural Steel wide-flange shapes

Columns: Structural Steel HSS and wide-flange shapes

# STRUCTURAL

### EXTERIOR CLADDING AND SUPPORT CONCEPT

The New Chemistry Tower will be mainly clad with a combination of curtain wall and insulated glazing and CMU backup and a terracotta facing. The mechanical floor walls are anticipated to be 8 inch or 10 inch cold form framing due to the high floor to floor. In general, the cladding system will be supported at all floor levels. It is anticipated where the floor to floor height exceeds 16 feet, additional structural steel columns and girt framing will be required to back up the curtain wall. This condition is recognized as being needed at the northeast walls on the mechanical floor and at the ground floor perimeter.

### STAIRS

Precast concrete stairs are proposed at the main east and west egress stair cores. Whereas exposed structural steel is proposed for the main entry grand stair.

### FIRE RATING

3–hour rating of the structural frame and 2-hour rating of floor systems is anticipated. The appropriate concrete cover to the steel reinforcement will be selected to satisfy this required fire rating.

Typical Structural System Framing

Floor Slab: Two-Way 16 inch Voided Slab

Columns: 24 inch by 24 inch and 36 inch by 24 inch cast-in-place concrete columns (typical).

Shear Walls: 12 inch thick cast-in-place concrete walls at selected locations (primarily near elevator and stair cores).

### LATERAL LOAD RESISTING SYSTEM

Wind and Seismic forces impart lateral loads on the building structure. To allow openness and future flexibility in the architecture plan, the proposed typical lateral bracing system is concrete shear walls and a combination of steel braced frame and shear walls at the upper most floor and roof. Concrete shear walls will be strategically placed in areas along the south portion of the building in locations where walls continue from the foundation to the roof.

### FLOOR VIBRATION CRITERIA

The vibrational velocity limit of 2,000 μ in/sec. which meets VC-A criterion and is adequate in most instances for optical microscopes to 400x, microbalances, optical balances, proximity and projection aligners, etc. will be the goal. A vibration consultant will need to be retained during the DD phase to review criteria and confirm conformance.

# MECHANICAL

## SUMMARY

Campus steam and chilled water will be extended to the new tower to serve the heating and cooling loads in the building. Steam will be taken through a pressure reducing station and delivered through the building at two separate pressures to serve heating loads and process loads. Chilled water pumps will be provided at the building to distribute the chilled water through the building when campus pressure is not adequate.

A heating hot water system, with steam-to-water convertors, distribution pumps and accessories will be provided to serve reheat coils, terminal heating devices, finned tube radiation, reheat coils, etc.

A glycol run around system with pump and accessories will be provided to circulate water between the heat recovery units and air handling units.

The existing process cooling water system in the Shain Tower will be extended to the new tower to serve the process cooling loads.

A dedicated outside air handling unit with heat recovery wheel will be provided to supply outside air to the three air handling units serving the large lecture halls in the lower levels of the tower. Each air handling unit with associated return fan will serve an individual lecture hall.

The remaining portions of the new tower will be served by three air handling units in a combined supply air system. The system will be a single duct, capable of 100% outside air, variable air volume, reheat system, providing heating, cooling and humidification to the spaces. The air to the office and general spaces will either be transferred to the laboratory spaces, toilet exhaust, or be returned to the air handling units. A return fan will be provided to return the air from the non-laboratory spaces.

The upper levels of Daniels Building will have the existing air handling units located on Level 9 demolished and two new air handling units to replace these units will be installed in the penthouse of the New Tower to serve the existing Daniels and Mathews Buildings upper levels. The discharges of the air handling units will be combined and the system will be a single duct, 100% outside air, variable air volume, reheat system, providing heating, cooling and humidification to the spaces.

The existing air handling located in the Basement level of Daniels Building will be demolished and replaced with a new unit. The system will be a single duct, capable of 100% outside air, variable air volume (operating in constant volume mode), reheat system, providing heating, cooling and humidification to the spaces.

A new laboratory exhaust system shall be provided on the roof of the New Tower to serve the combined exhaust system serving the New Tower. The system will consist of multiple exhaust fans and heat recovery plenums.

The existing laboratory exhaust system (fans/coils/etc) on the upper and lower roofs of the Daniels and Mathews Buildings will be demolished. A new laboratory exhaust system to serve the Daniels and Mathews Buildings will be located on the New Tower. The system will consist of multiple exhaust fans and heat recovery plenums.

# ELECTRICAL

## SUMMARY

The normal power electrical system will consist of two substations transformers and distribution equipment, and be located in the Tower Penthouse. The system will receive power from the UW campus 13.8kV power grid. The system will serve the new tower but will also serve some specific mechanical loads in the existing Mathews and Daniels buildings.

The emergency power electrical system, located in Daniels Sub-basement, will include a new diesel generator, transfer switches and distribution equipment. The system will serve the new tower but will also serve some specific mechanical loads in the existing Mathews and Daniels buildings. A low impedance ground system will be provided and tied to the ground system in existing facilities.

Lighting to provide general illumination and to accent architectural features will be provided. The system will consist of LED fixtures with other light sources being used sparingly and only for very specific purposes where required. Lighting controls will consist of occupancy and time of day devices to conserve energy. Emergency lighting will be provided along egress paths throughout the facility.

A fire alarm system to provide early detection and notify building occupants will be provided. The system will be tied into existing systems within the Chemistry campus. A fire command center will be included in the new tower to house fire alarm, elevator annunciation, smoke control, area of rescue assistance and other life safety system control panels.

An area of rescue assistance system will be provided in accordance with campus standards. The system will allow building occupants to communicate with rescue operations personnel from a fire and smoke protected location.

A security system (access control) will be provided (pathways, cabling, devices, hook-up) at exterior doors and select interior doors. Rough-ins and cabling for cameras will be provided. Cameras and head-end equipment will be provided and installed by the University.

Audio visual systems will be provided to meet program needs in the auditoriums and selected meeting spaces. The systems will be coordinated with campus standards.

Telecommunications will be sourced from the existing Daniels facility. All backbone, station, fiber optic and patch cabling will meet campus standards. Wireless connectivity will be provided by access points as determined by DoIT.

# PLUMBING

## SUMMARY

Design a new plumbing system for the new tower and remodeled areas of Daniels. The construction of the new system will be done in phases to minimize disruption to classes during construction.

## DESIGN PARAMETERS

The following codes and guidelines will be followed:

- Wisconsin Department of Commerce Safety and Buildings Code
- Division of Facilities Development (DFD) Standards and Guidelines
- University of Wisconsin Madison Recommendations and Campus Standards
- National Fire Protection Standards 54 and 99

## SYSTEM DESCRIPTION

The plumbing design will include the following systems:

- Exterior foundation drain tile system
- Sanitary, Acid Waste and Clear Water drain waste and vent systems
- Roof conductors
- Domestic Potable, Laboratory and Tempered water systems
- Natural gas for laboratory areas
- Reagent grade water for laboratory areas
- Laboratory specialty gas piping

## MATERIALS

Materials, fixtures and equipment will follow DFD design guide lines and peer review comments and will generally include:

- Corrugated polypropylene perforated drain tile piping
- PVC waste and clear water piping
- CPVC waste piping
- Type L copper water and specialty gas piping
- Piping insulation
- Valves with stainless steel trim
- Low flow plumbing fixtures
- Triplex water softeners
- Clear water and sanitary duplex sumps and pumps
- Duplex containment backflow preventers to isolate laboratory

## WATER

- Stainless steel water heaters
- Modular pure water plant for future expansion to Daniels

# FIRE PROTECTION

## SUMMARY

Design a new fire suppression system for the new tower and the remodeled areas in Daniels. The system design will interface with the existing suppression system and be designed to be extended for future sprinkler protection for the remainder of Daniels. The fire pump will be located within the Tower at the Basement level.

## DESIGN PARAMETERS

The following codes and guidelines will be followed:

- Wisconsin Department of Commerce Safety and Buildings Code
- Division of Facilities Development (DFD) Standards and Guidelines
- University of Wisconsin Madison Recommendations and Campus Standards
- National Fire Protection Association Standards 13, 14 and 20

## SYSTEM DESCRIPTION

The fire suppression system will provide protection per the following design classifications as described per NFPA 13.

- General Offices — Light Hazard
- Classrooms — Light Hazard
- Laboratories — Ordinary Hazard – Group 1
- Laboratories (Flammable) — Ordinary Hazard – Group 2
- Mechanical Rooms — Ordinary Hazard – Group 1

The fire protection design will include the following systems.

- Fire and jockey pumps to increase the water pressure to supply a minimum of 100 psi to the roof automatic standpipes.
- Automatic standpipe system in stairs.
- A combination automatic standpipe/riser in one stair to provide sprinkler distribution to each floor or zone.
- Zoned wet fire suppression to each floor.
- A wet suppression sprinkler system in the Daniels remodeled areas with capped connections for future extension.

## MATERIALS

Materials will follow DFD design guide lines and peer review comments and will generally include:

- Schedule 10 and 40 black steel pipe and ductile iron fittings.
- Flexible sprinkler drops
- Color coordinated concealed sprinkler heads

# ZONING, BUILDING CODE, & WEPA

## SUMMARY

In this early (10%) stage of design, we have assessed the codes and zoning by first absorbing their intent and then reviewing our findings both on campus and with the City. Each topic yielded some important headlines.

**Zoning: Governs height and setbacks**

1. No mandatory setbacks required; design provides 15' from the west property line, 5' on the east and 15' (G-2nd floors) / 23' (4th-8th floors) from the north line.
2. Acquisition of The Crossing parcel and consolidation into a new parcel for development. The existing house attached to the church will be demolished and a new lot line struck 10' from the east side of the church (see parcel A + B)
3. The proposed addition falls outside the State Capitol one mile viewing corridor. The proposed height (142') is comperable to the Shain Tower onsite and the apartment buildings along University Avenue.

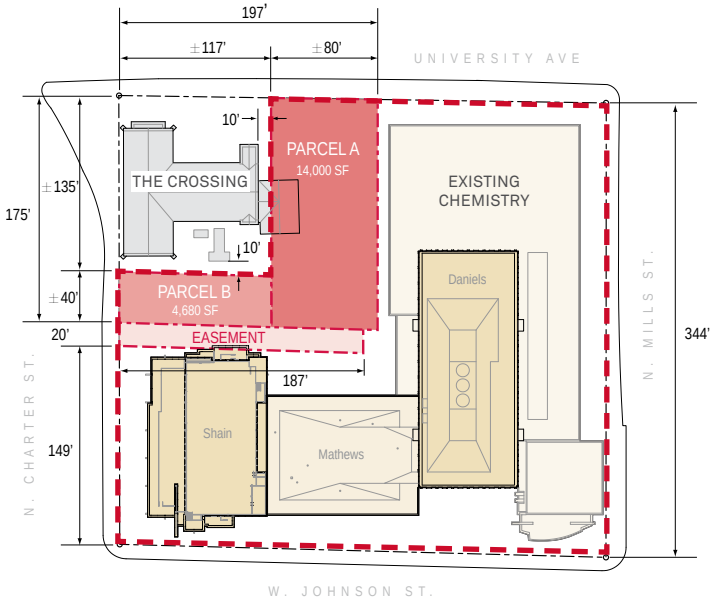
**Building Codes: Governs fire safety and construction fire resistance**

1. The new tower and the three renovated floors of Daniels will be fully sprinklereed.
2. The new tower will be separated by a three hour fire barrier from Daniels
3. The high volume user spaces are concentrated in the base with the multiple exits from the new tower: East, west and south through Daniels.
4. Each lab floor is separated into two control zones. The higher quantity chemical users are kept lower in the tower: Research + Organic Chemistry. The less intensive users are up top (Analytical & Physical Chemistry).

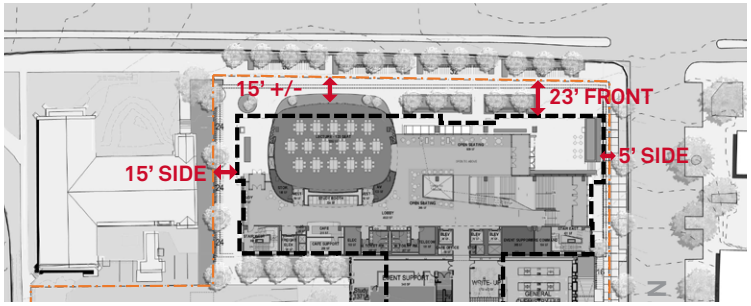
**WEPA: Governs Environmental Impact**

In compliance with the Wisconsin Environmental Protection Act (WEPA) this project will require that a WEPA Type I action, an Environmental Impact Statement (EIS), be completed. At a minimum, the Draft EIS public hearing needs to have occurred prior to receiving authority to construct from the BOR and the SBC, so that any issues that could affect the project scope and budget have been identified.

# ZONING




SITE AQUISITION DIAGRAM




SITE SETBACKS

The Chemistry Department properties are considered a conditional use in the Campus Institutional (CI) District. Established in 2013, the CI District recognizes the unique needs of the university in the coordination of the campus masterplan with the city's plans, policies and zoning standards.

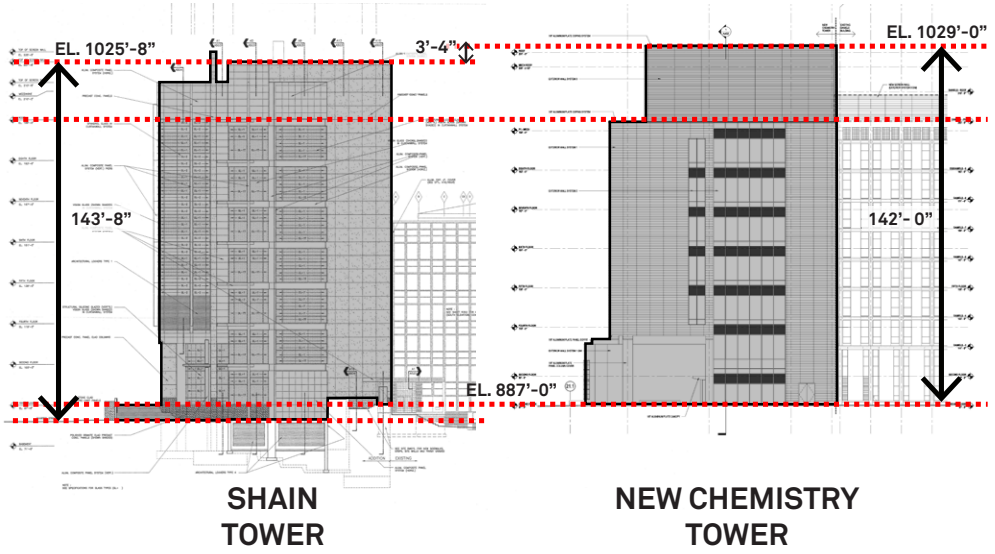
The site of the New Chemistry building consists of the existing property as well as adjacent parcels (A + B) to be acquired from The Crossing (currently zoned R6) and consolidated into a single parcel for development of the project. The Crossing and attached house on the northwest corner of the block are not considered landmarks, and therefore review by the Landmarks commission is not anticipated at this time. The project requires demolitions of the house that is attached to The Crossing and a new Certified Survey Map submitted and approved by the city for the new lot line that would run through the current location of the house. The line is to be 10' from the façade of the church, and this line will demarcate the point from which the side yard setback is determined.

As part of a Madison Campus Institutional District, the site has no mandatory setbacks. A 15FT side yard setback is provided along the west side of the site between the property line and the exterior face of the tower. At University Avenue and public sidewalk to the North, the Learning Studio is located approximately 15FT from the property line on the ground floor, and the exterior face of the labs is approximately 23FT from the property line on the upper floors. Along Mills Street, a 5FT setback is maintained from the property line to the exterior face of the tower curtain wall above.

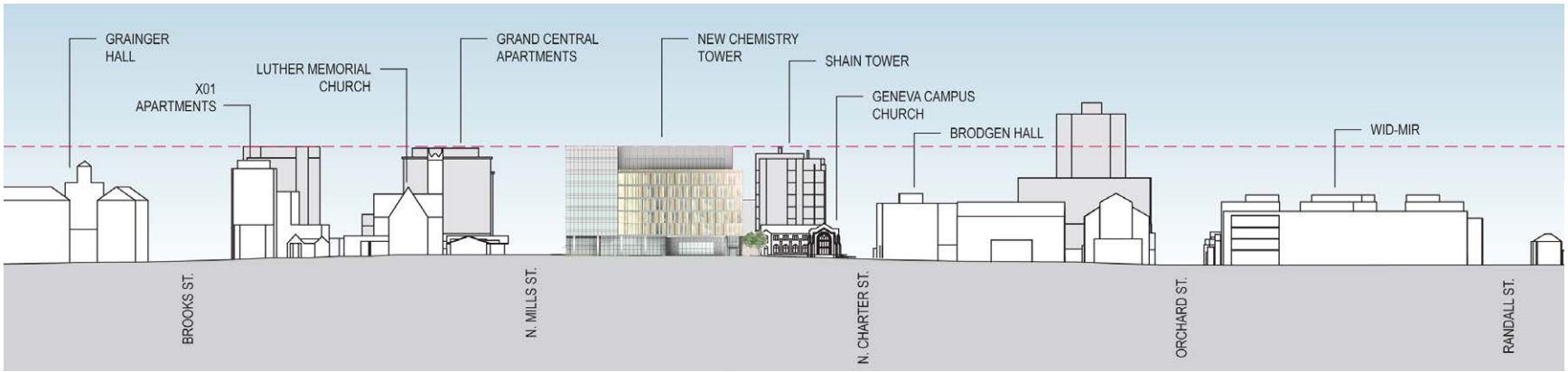
# ZONING

At 142FT from sidewalk level at University Avenue, the overall height of the New Tower is comparable to that of Shain Tower at 143'-8". The height of the New Tower is also comparable to other high-rise buildings in the vicinity, including the X01 and Grand Central apartment buildings located one block to the west.

The site has no zoning mandated height limitations. Located just outside the State Capitol view preservation district (1-mile radius around the capitol), the building is not required to fall within the 1032.8FT elevation cap. Parapet elevation in the design is currently 1029FT above sea level (sidewalk is at 887FT), with mechanical exhaust stacks projecting beyond that elevation. While the ultimate height of exhaust stacks will depend upon the results of a yet to be conducted wind analysis, the design team will work to reduce the height of these elements to the greatest degree possible.




THE OVERALL BUILDING HEIGHT OF THE NEW CHEMISTRY BUILDING IS COMPERABLE TO THE SHAIN TOWER



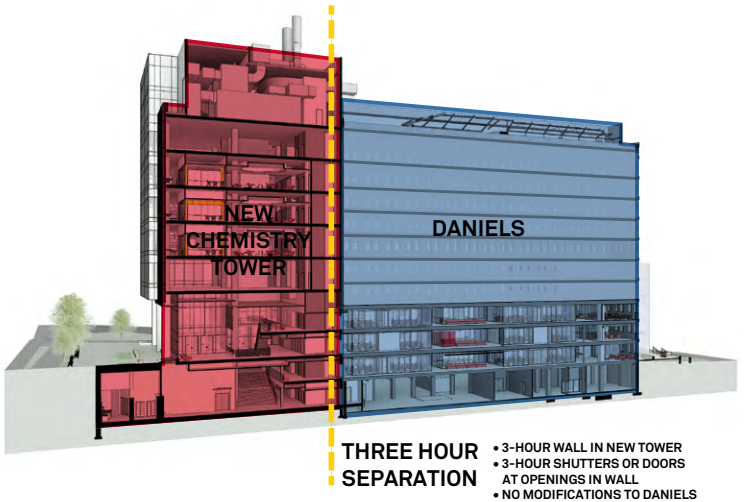

CONTEXT ELEVATIONS COMPARISON

# BUILDING CODE

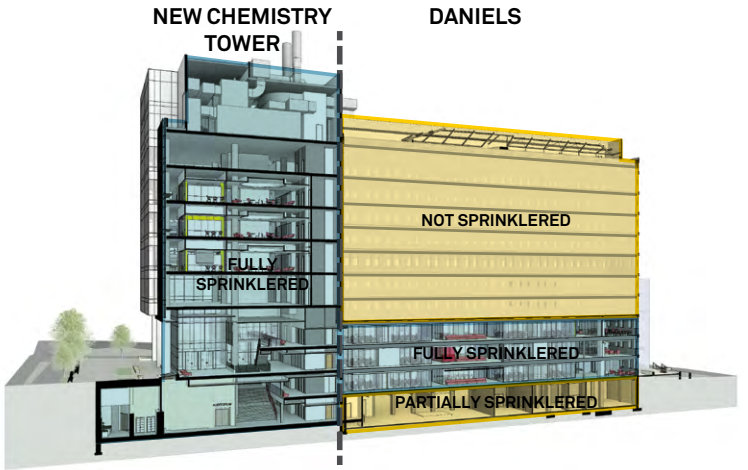
The Authorities Having Jurisdiction (AHJs) for fire and life safety code compliance are the State of Wisconsin Department of Safety and Professional Services and the Madison Fire Department. The design must comply with the 2011 Wisconsin Commercial Building Code (WCBC) which is based on the 2009 International Building Code (IBC) and 2009 International Existing Building Code (IEBC). In addition the WCBC references National Fire Protection Association (NFPA) 45, Fire Protection for Laboratories Using Chemicals. The State of Wisconsin has also adopted the 2009 NFPA 1, Fire Code. The City of Madison also adopts and amends the IFC as its Fire Prevention Code.

The New Tower will be separated from the Daniels building by a 3-hr fire barrier wall, with 3-hr fire rated doors and coiling shutters at openings within the wall. This approach to building separation, with a single fire barrier wall structured directly to the new tower, allows Daniels existing precast facade to remain in place, avoiding costly demolition, minimizing disruption to existing labs within Daniels, and reducing overall construction time.  A variance will be required for this approach to building separation. The design team will continue to work with Madison Fire Department and Wisconsin Department of Safety and Professional Services to assure expectations are fully understood throughout variance process.

The new Tower will be a fully sprinklered high-rise building and include a new fire pump to be installed in the Tower basement. A sprinkler system will also be installed at the basement through second floors of Daniels where extensive renovations are occurring, as well as portions of the sub-basement in areas of new work. On floors where no renovations are occurring, Daniels will remain an unsprinklered building. The new fire pump and risers will be sized to accommodate the new Tower as well as a future project to install a full sprinkler system within Daniels and Mathews.




BUILDING SEPARATION

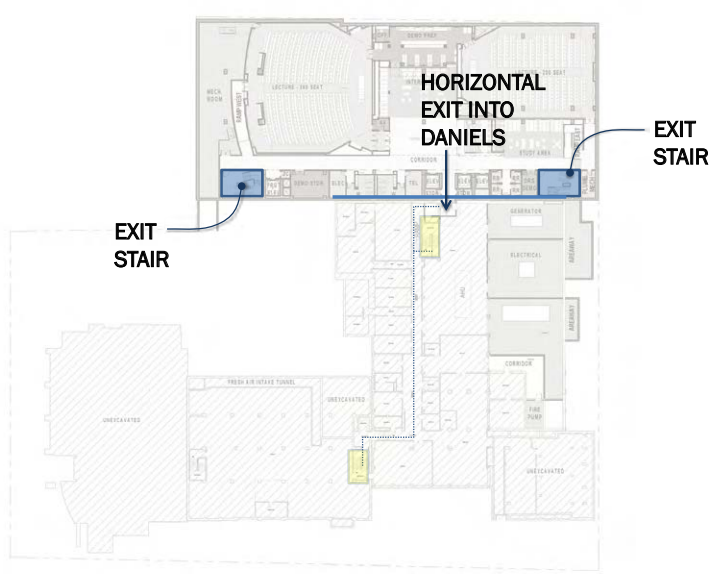



FIRE SUPRESSION

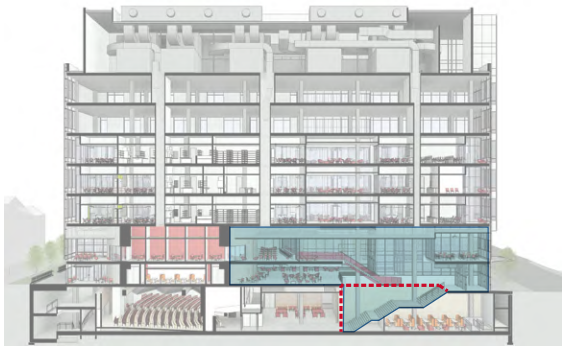
# BUILDING CODE

Egress will be provided through two stair towers located on the south west, and south east corners of the building. Stairs will be sized to handle peak occupancy loads at the lower level lecture halls, with additional egress capacity provided by a horizontal exit that discharges directly into the existing north stair tower of Daniels at the sub-basement level. Egress throughout Daniels will utilize the existing towers and rated corridors, with the exception of the south stair tower which will be relocated to a new location at the south exterior wall. The relocation of this stair, currently serving the basement, ground and second floors of the building, will shift the main corridor in Daniels and reduce the transport of chemicals in public hall by consolidating labs and stockrooms into a single area.

Utilizing mechanical fire separation in lieu of a smoke evacuation system, the new tower will be compartmentalized through a series of vertical fire shutters and pocketed fire-rated sliding doors. A series of overhead vertical fire shutters will separate the sub-basement and basement levels from the open monumental stair and ground floor above, with egress from these levels provided by the two stair towers and a horizontal exit into Daniels. At each lab floor within the Tower, chemical control areas are separated by pocketed fire-rated sliding doors.




SUB-BASEMENT EGRESS

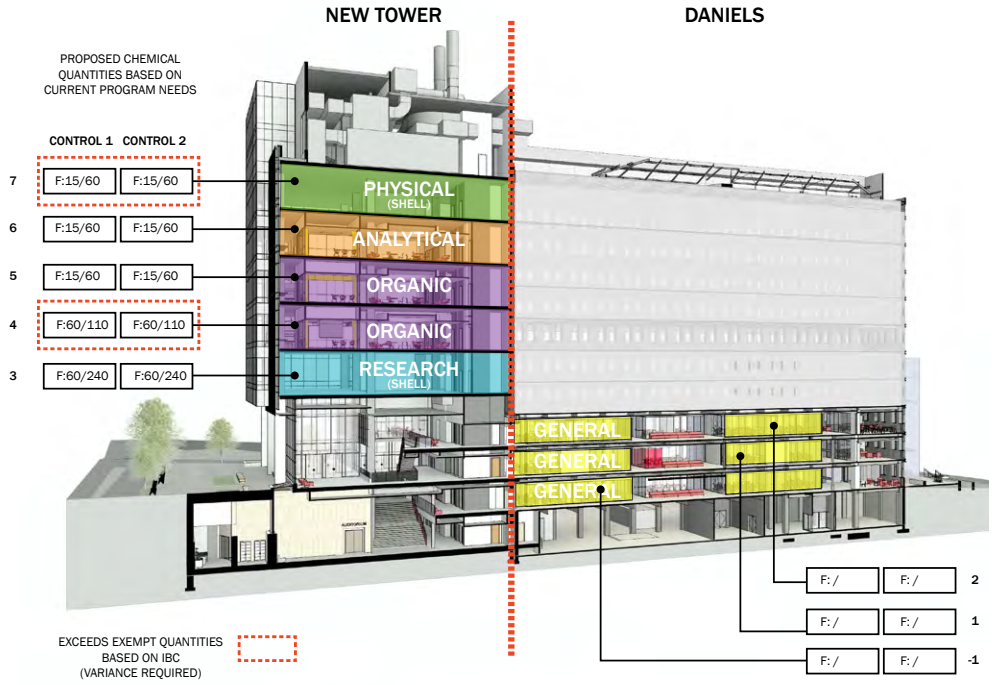


LOWER LEVEL FIRE SHUTTERS

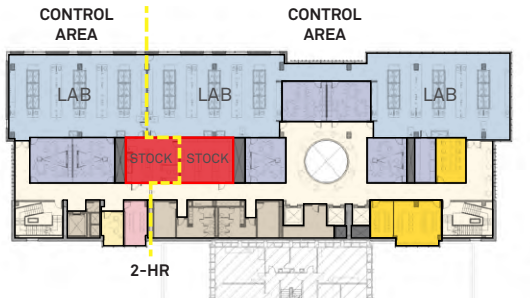
# BUILDING CODE

Each lab floor within the New Tower will be compartmentalized into two control areas with adjacency to a central chemical stock room. Chemicals within the control areas will be limited to maximum allowable quantities per IBC 414.2 on the 3rd, 5th and 7th levels (4th, 6th and 8th floors), with variances likely to meet program chemical needs on the 4th and 7th level (5th and 8th floor).

The authorities having jurisdiction will be actively engaged throughout the design process to assure that any compensatory fire protection features are included in the design and expectations about maximum allowable chemical quantities are fully understood and addressed.




CHEMICAL CONTROL AREAS




CHEMICAL CONTROL AREAS

# SUSTAINABILITY

## SUMMARY

The University of Wisconsin-Madison has a sustainability goal of LEED Silver for most of their projects, and the Chemistry Addition will comply with this goal. LEED certification will be pursued for the new tower portion of the project only. Combining the new construction and renovated areas confuses the certification process as LEED has different criteria for new construction and renovated spaces. Additionally, the renovation of Daniels is likely to be completed too late to submit paper work for certification under the current LEED v.3 (2009) criteria.

An initial review of the LEED criteria and the project opportunities identifies 35 out of 110 points as probable to highly probable with another 22 points as possible or questionable. The remaining 47 points are either not possible or improbable. LEED Certification requires 40 points minimum with LEED Silver Certification requiring a minimum of 50 points. LEED silver is possible; however the project team will need to utilize most of the questionable credits and look toward some of the other credits. Our goal will be to identify 55 to 60 credits to carry through the Preliminary Design phase. Historically, some credits will get rejected by the USGBC, the project needs to bank a few extra sustainable credits to assure the goal is reached.

The adjacent chart identifies sustainable credits that are easily obtained by the scope and the general nature of the project. At this phase, LEED credits are not driving design decisions. A project team workshop dedicated to sustainability is warranted early in the preliminary design phase to identify additional potential credits with minimal impact on the project budget or design. Further work sessions and analysis will likely be required to identify the additional credits needed for LEED Silver certification.

# SUSTAINABILITY GOALS

## LEED 2009 for New Construction and Major Renovations

Project Checklist

UW Chemistry

### Sustainable Sites — Possible Points: 26

| Y | ? | N | | | |
|---|---|---|---|---|---|
| Y | | | Prereq 1 | Construction Activity Pollution Prevention | |
| 1 | | | Credit 1 | Site Selection | 1 |
| 5 | | | Credit 2 | Development Density and Community Connectivity | 5 |
| | | 1 | Credit 3 | Brownfield Redevelopment | 1 |
| 6 | | | Credit 4.1 | Alternative Transportation—Public Transportation Access | 6 |
| | | 1 | Credit 4.2 | Alternative Transportation—Bicycle Storage and Changing Rooms | 1 |
| | | 1 | Credit 4.3 | Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles | 3 |
| | 1 | | Credit 4.4 | Alternative Transportation—Parking Capacity | 2 |
| | | 1 | Credit 5.1 | Site Development—Protect or Restore Habitat | 1 |
| | | 1 | Credit 5.2 | Site Development—Maximize Open Space | 1 |
| | | 1 | Credit 6.1 | Stormwater Design—Quantity Control | 1 |
| | 1 | | Credit 6.2 | Stormwater Design—Quality Control | 1 |
| | | 1 | Credit 7.1 | Heat Island Effect—Non-roof | 1 |
| | | 1 | Credit 7.2 | Heat Island Effect—Roof | 1 |
| | | 1 | Credit 8 | Light Pollution Reduction | 1 |

### Water Efficiency — Possible Points: 10

| | | | | | |
|---|---|---|---|---|---|
| Y | | | Prereq 1 | Water Use Reduction—20% Reduction | |
| | 1 | | Credit 1 | Water Efficient Landscaping | 2 to 4 |
| | 2 | | Credit 2 | Innovative Wastewater Technologies | 2 |
| | 2 | 2 | Credit 3 | Water Use Reduction | 2 to 4 |

### Energy and Atmosphere — Possible Points: 35

| | | | | | |
|---|---|---|---|---|---|
| Y | | | Prereq 1 | Fundamental Commissioning of Building Energy Systems | |
| Y | | | Prereq 2 | Minimum Energy Performance | |
| Y | | | Prereq 3 | Fundamental Refrigerant Management | |
| 5 | 5 | 9 | Credit 1 | Optimize Energy Performance | 1 to 19 |
| | | 7 | Credit 2 | On-Site Renewable Energy | 1 to 7 |
| 2 | | | Credit 3 | Enhanced Commissioning | 2 |
| 2 | | | Credit 4 | Enhanced Refrigerant Management | 2 |
| | | 3 | Credit 5 | Measurement and Verification | 3 |
| | 2 | | Credit 6 | Green Power | 2 |

### Materials and Resources — Possible Points: 14

| | | | | | |
|---|---|---|---|---|---|
| Y | | | Prereq 1 | Storage and Collection of Recyclables | |
| | | 3 | Credit 1.1 | Building Reuse—Maintain Existing Walls, Floors, and Roof | 1 to 3 |
| | | 1 | Credit 1.2 | Building Reuse—Maintain 50% of Interior Non-Structural Elements | 1 |
| 2 | | | Credit 2 | Construction Waste Management | 1 to 2 |
| | | 2 | Credit 3 | Materials Reuse | 1 to 2 |

### Materials and Resources, Continued

| Y | ? | N | | | |
|---|---|---|---|---|---|
| | | 2 | Credit 4 | Recycled Content | 1 to 2 |
| | 1 | 1 | Credit 5 | Regional Materials | 1 to 2 |
| | | 1 | Credit 6 | Rapidly Renewable Materials | 1 |
| | 1 | | Credit 7 | Certified Wood | 1 |

### Indoor Environmental Quality — Possible Points: 15

| | | | | | |
|---|---|---|---|---|---|
| Y | | | Prereq 1 | Minimum Indoor Air Quality Performance | |
| Y | | | Prereq 2 | Environmental Tobacco Smoke (ETS) Control | |
| 1 | | | Credit 1 | Outdoor Air Delivery Monitoring | 1 |
| | 1 | | Credit 2 | Increased Ventilation | 1 |
| 1 | | | Credit 3.1 | Construction IAQ Management Plan—During Construction | 1 |
| 1 | | | Credit 3.2 | Construction IAQ Management Plan—Before Occupancy | 1 |
| | 1 | | Credit 4.1 | Low-Emitting Materials—Adhesives and Sealants | 1 |
| 1 | | | Credit 4.2 | Low-Emitting Materials—Paints and Coatings | 1 |
| 1 | | | Credit 4.3 | Low-Emitting Materials—Flooring Systems | 1 |
| | 1 | | Credit 4.4 | Low-Emitting Materials—Composite Wood and Agrifiber Products | 1 |
| 1 | | | Credit 5 | Indoor Chemical and Pollutant Source Control | 1 |
| 1 | | | Credit 6.1 | Controllability of Systems—Lighting | 1 |
| | | 1 | Credit 6.2 | Controllability of Systems—Thermal Comfort | 1 |
| 1 | | | Credit 7.1 | Thermal Comfort—Design | 1 |
| 1 | | | Credit 7.2 | Thermal Comfort—Verification | 1 |
| | | 1 | Credit 8.1 | Daylight and Views—Daylight | 1 |
| | | 1 | Credit 8.2 | Daylight and Views—Views | 1 |

### Innovation and Design Process — Possible Points: 6

| | | | | | |
|---|---|---|---|---|---|
| 1 | | | Credit 1.1 | Innovation in Design: Specific Title | 1 |
| | 1 | | Credit 1.2 | Innovation in Design: Specific Title | 1 |
| | 1 | | Credit 1.3 | Innovation in Design: Specific Title | 1 |
| | | 1 | Credit 1.4 | Innovation in Design: Specific Title | 1 |
| | | 1 | Credit 1.5 | Innovation in Design: Specific Title | 1 |
| 1 | | | Credit 2 | LEED Accredited Professional | 1 |

### Regional Priority Credits — Possible Points: 4

| | | | | | |
|---|---|---|---|---|---|
| 1 | | | Credit 1.1 | Regional Priority: Specific Credit | 1 |
| | | 1 | Credit 1.2 | Regional Priority: Specific Credit | 1 |
| | 1 | | Credit 1.3 | Regional Priority: Specific Credit | 1 |
| | | 1 | Credit 1.4 | Regional Priority: Specific Credit | 1 |

### Total — Possible Points: 110

| 35 | 22 | 47 |
|---|---|---|

Certified 40 to 49 points  Silver 50 to 59 points  Gold 60 to 79 points  Platinum 80 to 110

# SCHEDULE

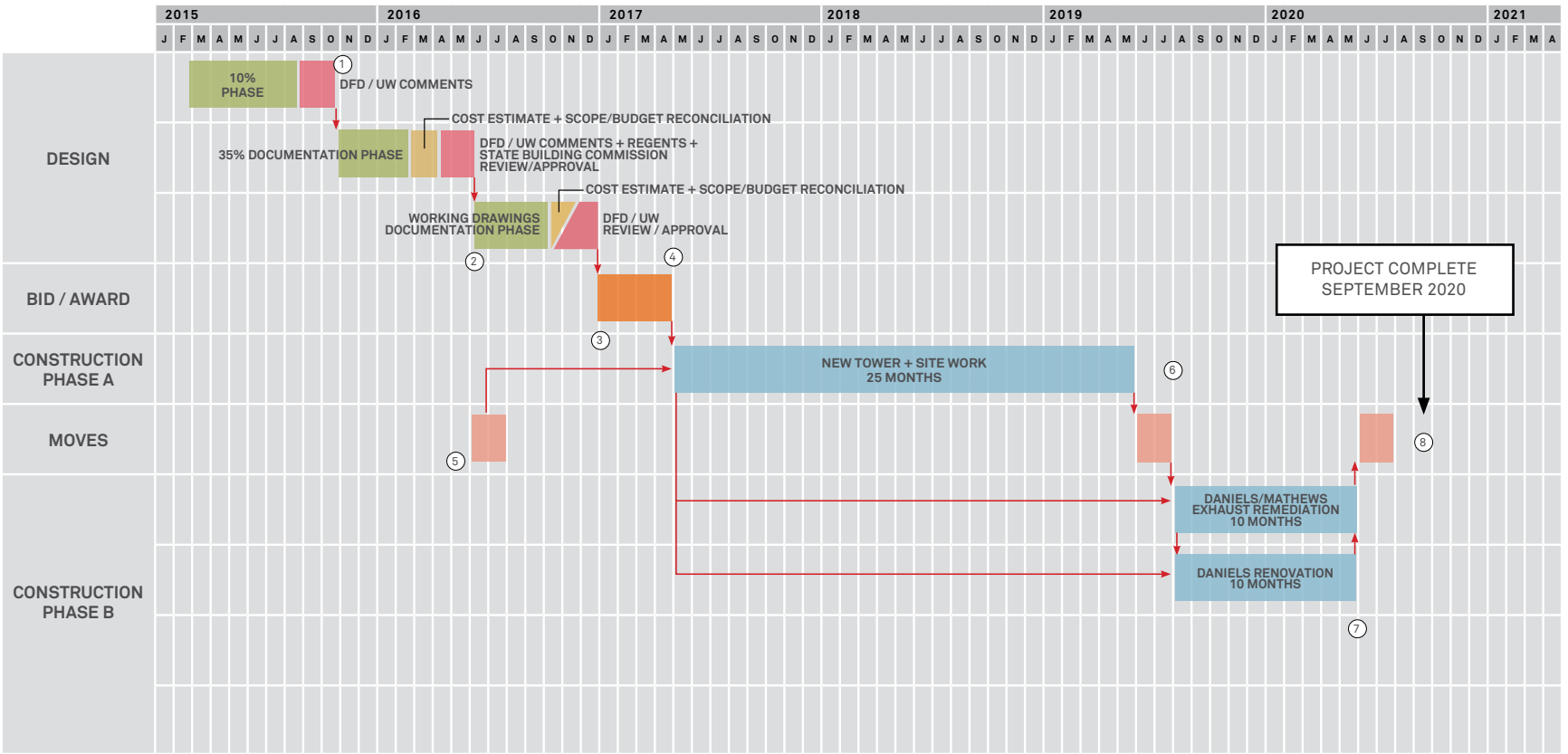
## SUMMARY

The accompanying chart reflects an overall Design / Bid / Build Process to accomplish the addition and renovation project by mid-year 2020. Crucial to that outcome is continued progress with the Design and Documentation Stages. The headlines:

1. Completion of 10% + review in October 2015; start 35% phase on November 2
2. Completion of 35% + review and approval by June 2016
3. Completion of contract documents + final review by December 2016
4. Bid / award by April 2017
5. Chemistry department moves into and out-of swing spaces are planned to occur during summer months. Mid-semester moves present prohibitive challenges.
6. New tower addition completed by June 2019
7. Renovation of Daniels completed by June 2020
8. Move in to start school year 2020-21

Given the complexity of the effort, this is an ambitious schedule. The preliminary efforts to pin down the codes and zoning with the city of Madison will bear fruit in the next stages: 35%

# DESIGN AND CONSTRUCTION SCHEDULE



# COST SUMMARY

## BUDGET PLAN

With the overall project funding still unresolved, we are proceeding with the expectation that the necessary funding will be available by the end of the 35% stage to allow for a construction start date of April 2017. Several options were modeled in the 10% Phase and are reflected in the accompanying chart.

1. Design efforts commenced in March 2015 working with a target budget of $111.9M (column 2)
2. During the 10% Phase, the State of Wisconsin approved $86.208 M (GFSB) toward this project, with an additional University share (gift / grant) as $21.552 M for a total authorized budget of $107.76 M.
3. A complete schematic design estimate was created in August 2015 showing a significant overage of $12.774M compared to the $111.9M budget. (column 3 – column 2)
4. The team collaborated with the University and DFD to create a set of choices exceeding the short fall. Through an interactive process, $14.31M in deductions were selected with a potential of an additional $725,000 in reserve.

Given the detailed cost investigations that occurred in August and September, the project has good alignment between the scope and budget.

# PROJECT COST SUMMARY

## COST SUMMARY

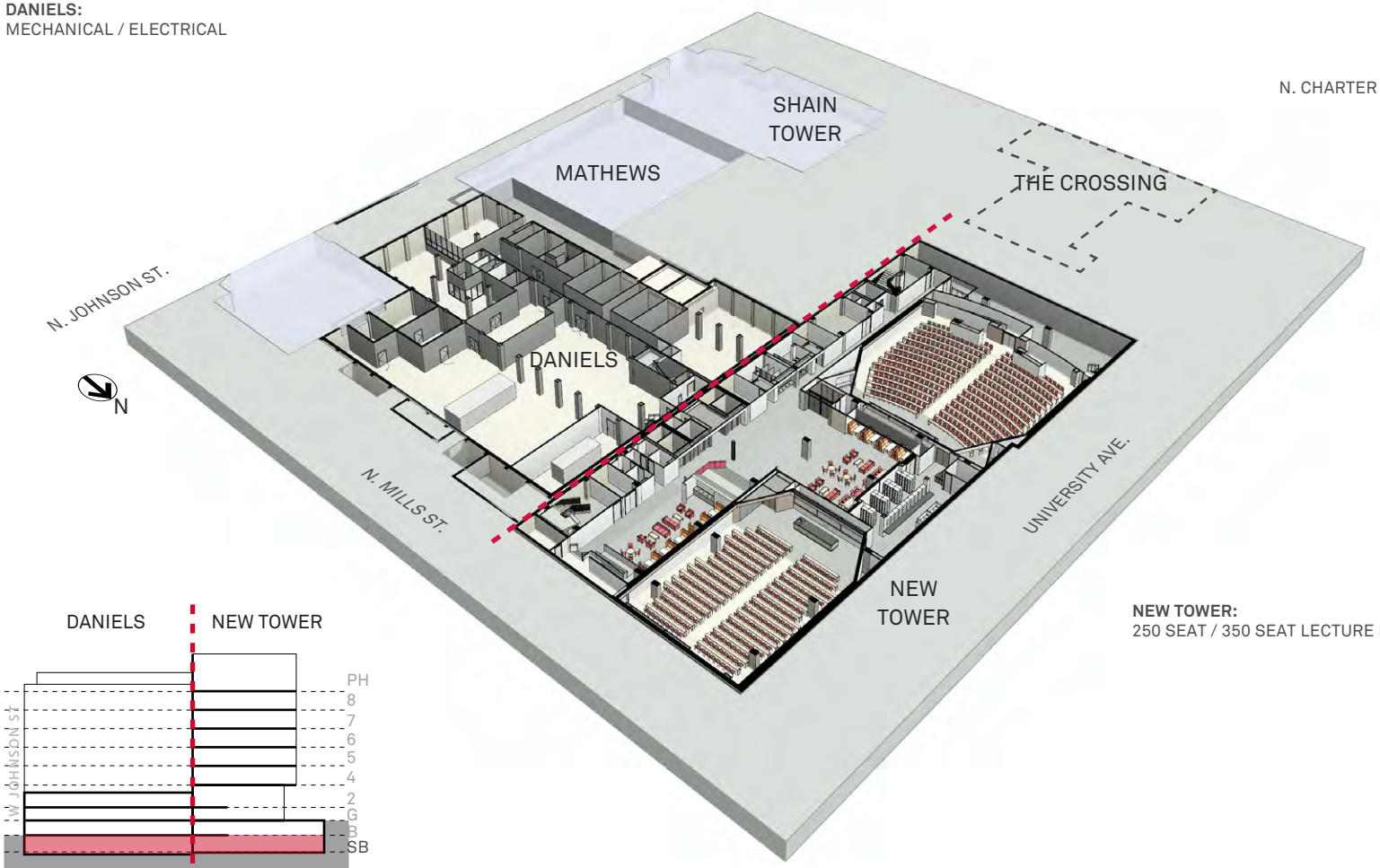
| | 1. PER CONTRACT (RFP MARCH 2014) | 2. SEPARATION STUDY (FEBRUARY 2015) | 3. INITIAL COST ESTIMATE (AUGUST 2015) | 4. *PROGRAM REVISED TO BUDGET (OCTOBER 2015)* |
|---|---|---|---|---|
| ***CONSTRUCTION*** | | | | |
| *CONSTRUCTION* | $85,130,000 | $93,200,000 | $63,489,000 | $55,852,000 |
| *DEMOLITION* | $912,000 | $912,000 | $796,000 | $778,100 |
| *CONVEYING* | | | $64,000 | $62,000 |
| *PLUMBING* | | | $6,610,000 | $6,440,000 |
| *FIRE PROTECTION* | | | $874,000 | $846,000 |
| *HVAC* | | | $15,986,000 | $14,906,000 |
| *ELECTRICAL* | | | $10,495,000 | $9,304,000 |
| *AUDIO/VISUAL EQUIPMENT* | | | $1,000,000 | $999,800 |
| *UTILITY EXTENSIONS* | | | $600,000 | $587,000 |
| *SITE IMPROVEMENTS* | | | $1,116,000 | $565,000 |
| *HAZARDOUS MATERIAL ABATEMENT* | $200,000 | $200,000 | $500,000 | $500,000 |
| *SCOPE & TIME ADJUSTMENT* | | | | *(INCLUDED IN LINE ITEMS ABOVE)* |
| *CONSTRUCTION SUBTOTAL* | $86,242,000 | $94,312,000 | $101,530,000 | $90,839,900 |
| *CONSTRUCTION CONTINGENCY* | $4,550,000 | $4,890,000 | $8,122,500 | $6,854,641 |
| ***CONSTRUCTION TOTAL*** | $90,792,000 | $99,202,000 | $109,652,500 | **$97,694,541** |
| | | | | |
| ***DESIGN & SUPERVISION*** | | | | |
| ***DFD MANAGEMENT FEE*** | $3,632,000 | $3,632,000 | $4,061,200 | $3,633,600 |
| *COMMISSIONING* | | | | $650,000 |
| *EIA CONSULTANT* | | | | $15,000 |
| *HAZARDOUS MATERIALS SURVEY & DOC.* | | | | $30,000 |
| ***A/E FEES*** | $6,270,000 | $6,270,000 | $7,614,750 | $6,844,092 |
| ***OTHER PRIME CONSULTANTS' FEES*** | $628,000 | $628,000 | $628,000 | |
| *LEED - DESIGN CHARRETTE & APPLICATION* | | | | $120,430 |
| *GEOTECHNICAL INVESTIGATION* | | | | $20,000 |
| *SITE SURVEY* | | | | $25,000 |
| *ACOUSTICS / VIBRATION ANALYSIS* | | | | $53,204 |
| *SITE AIR FLOW ANALYSIS* | | | | $13,200 |
| *CODE ANALYSIS* | | | | $35,950 |
| *COST ESTIMATING* | | | | $78,635 |
| *PLAN REVIEW FEES* | | | | $35,000 |
| ***DESIGN & SUPERVISION SUBTOTAL*** | $10,530,000 | $10,530,000 | $12,303,950 | **$11,487,111** |
| *A/V EQUIPMENT* | | | | $1,178,848 |
| *LABORATORY EQUIPMENT* | | | | |
| *MOVABLE FURNITURE* | | | | $1,539,500 |
| ***EQUIPMENT SUBTOTAL*** | $2,168,000 | $2,168,000 | $2,718,375 | **$2,718,348** |
| | | | | |
| ***TOTAL ESTIMATED PROJECT COST*** | $103,490,000 | $111,900,000 | $124,674,825 | ***$111,900,000*** |

# DRAWINGS

-FLOOR PLANS (SB-PH)
-AXONOMETRIC RENDERINGS (SB-PH)

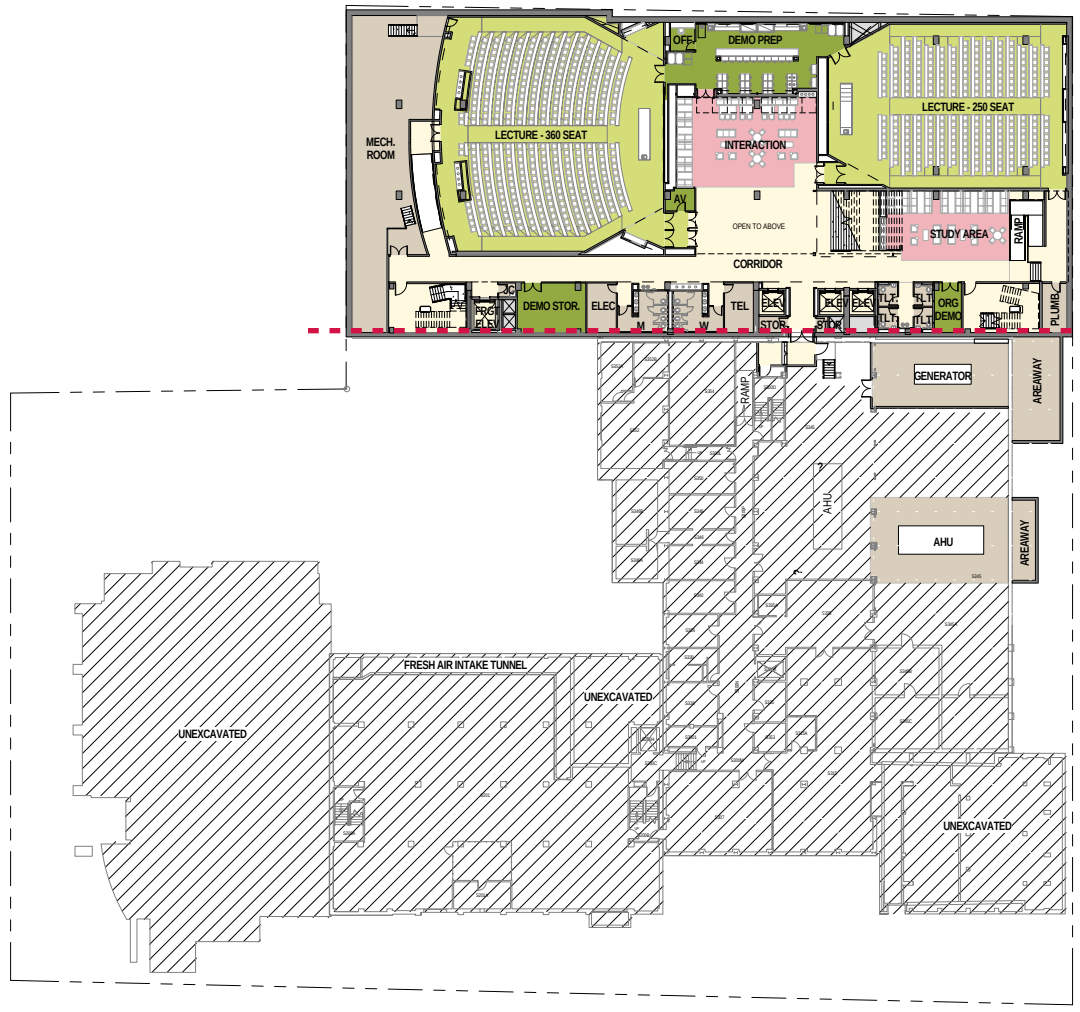
# FLOOR PLANS: SUB-BASEMENT

**DANIELS:**
MECHANICAL / ELECTRICAL




**NEW TOWER:**
250 SEAT / 350 SEAT LECTURE HALLS

# FLOOR PLANS: SUB-BASEMENT

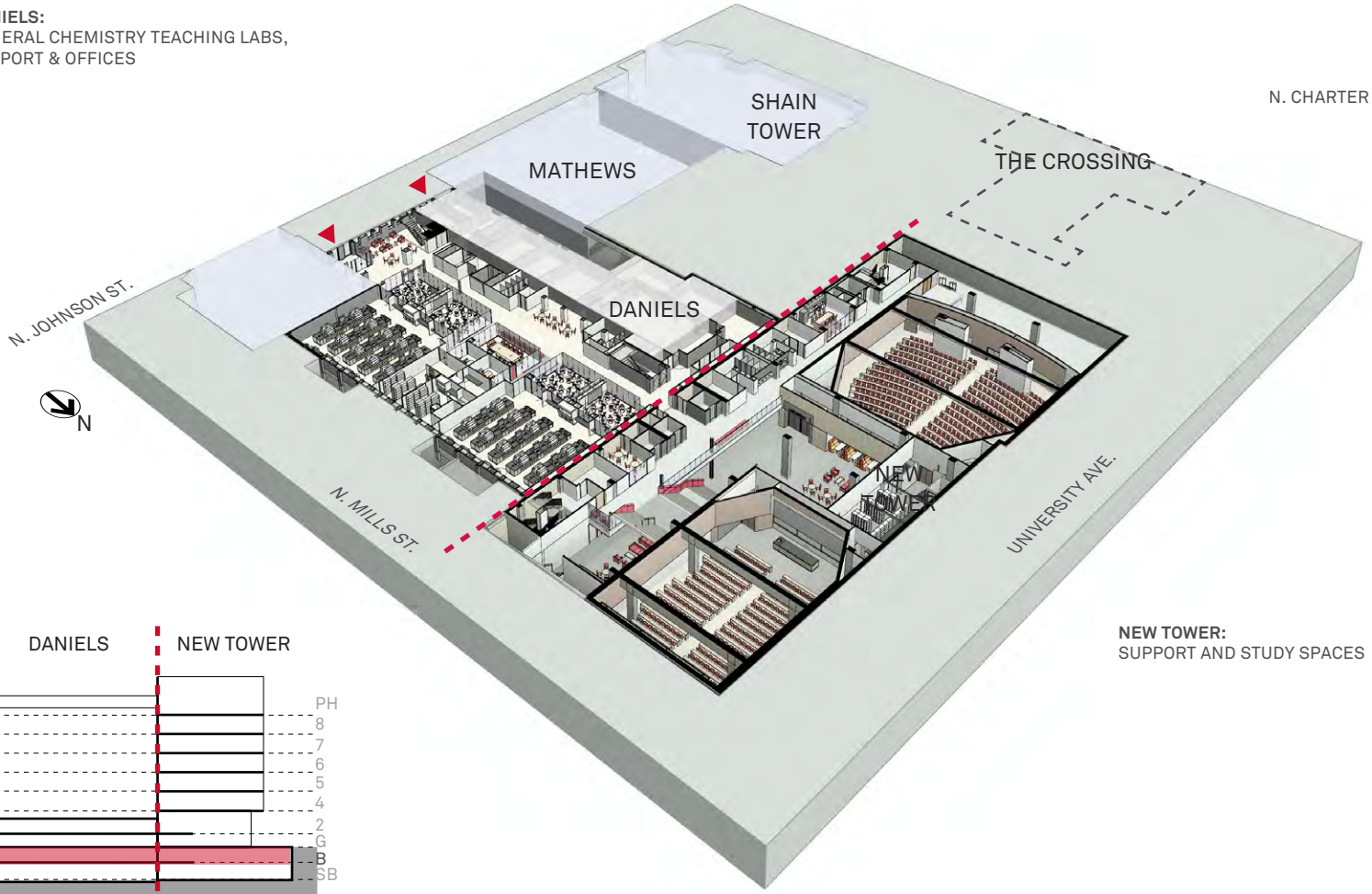



FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: BASEMENT

**DANIELS:**
GENERAL CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

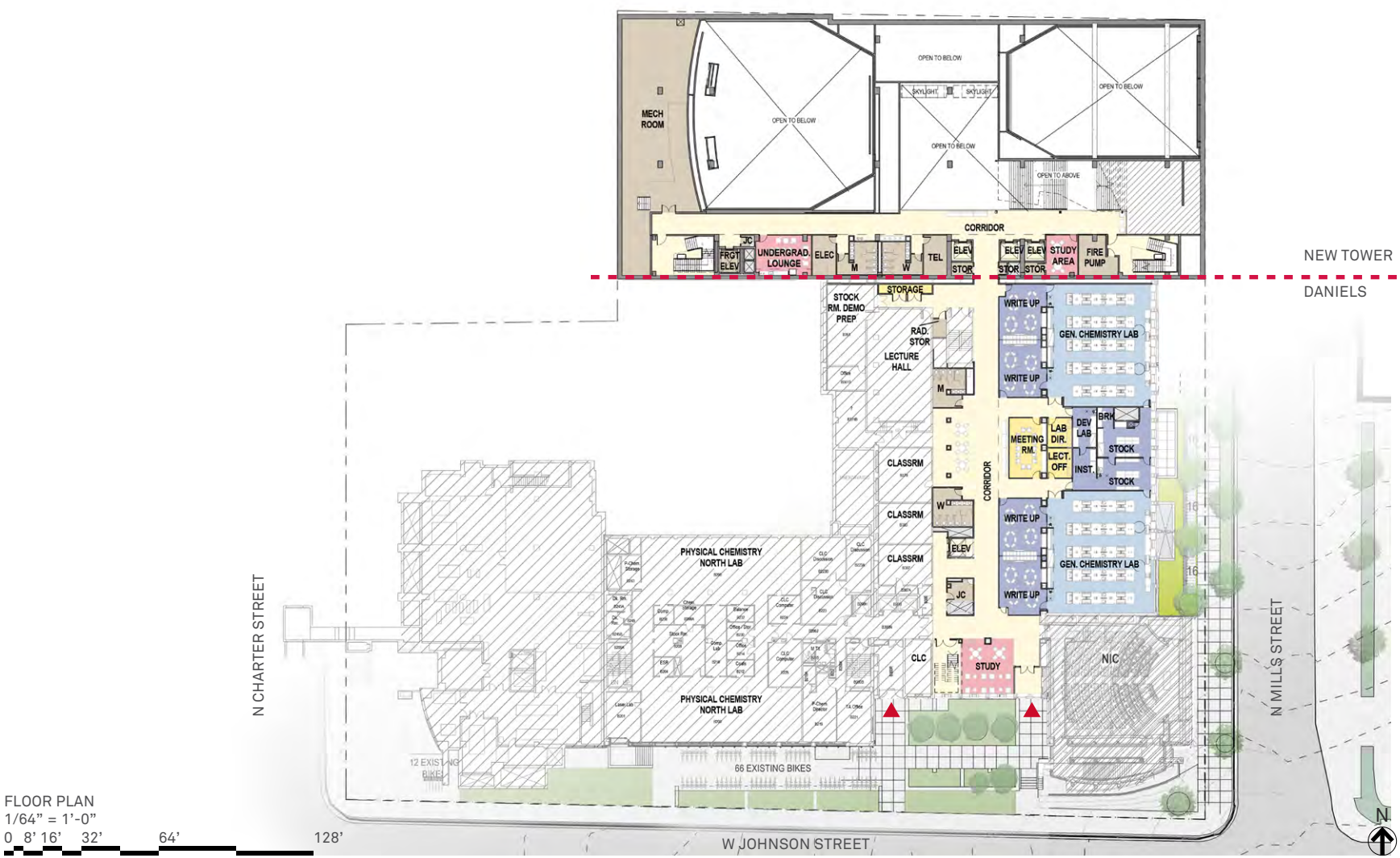






**NEW TOWER:**
SUPPORT AND STUDY SPACES

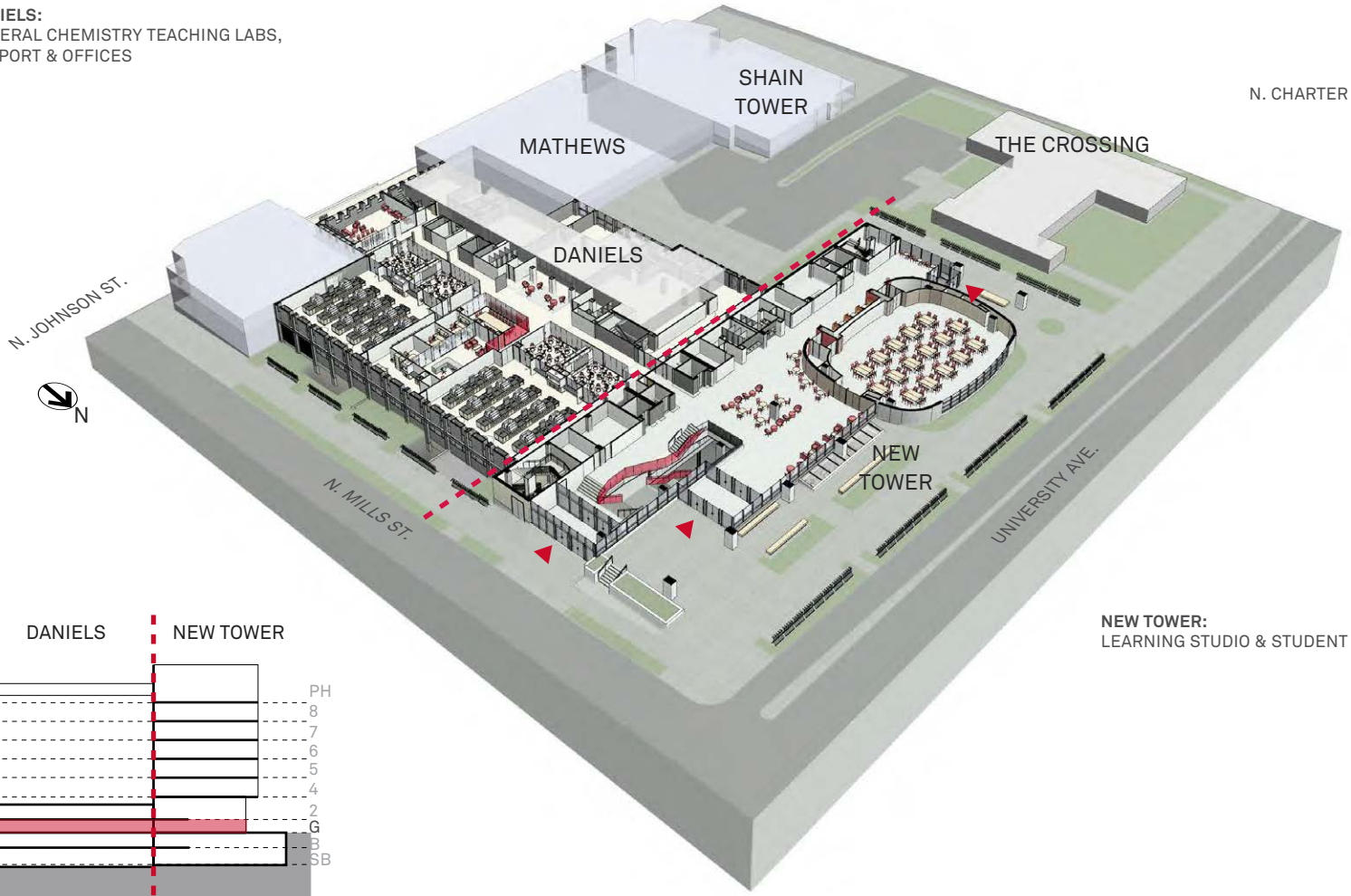
# FLOOR PLANS: BASEMENT




FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

# FLOOR PLANS: GROUND FLOOR

**DANIELS:**
GENERAL CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

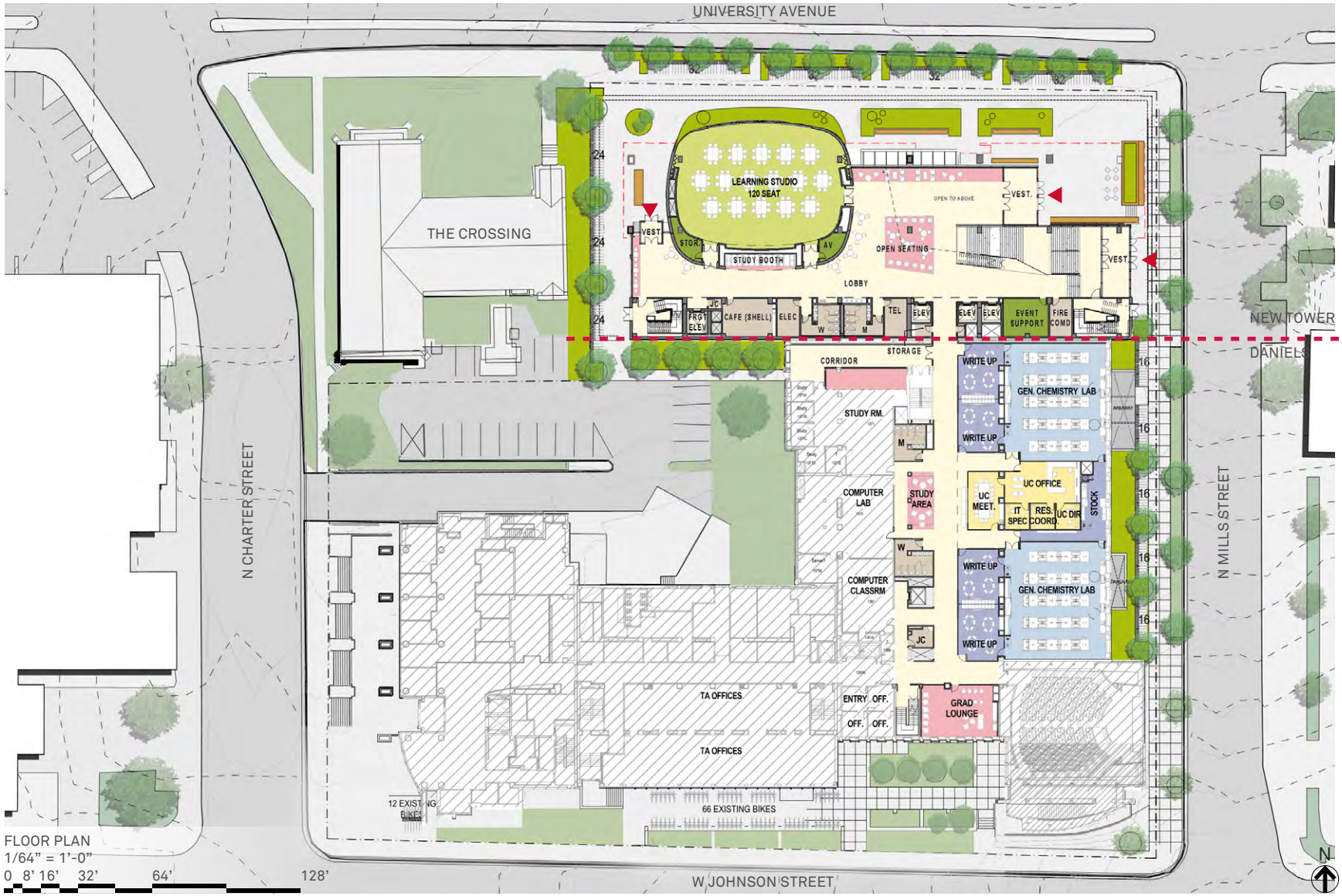






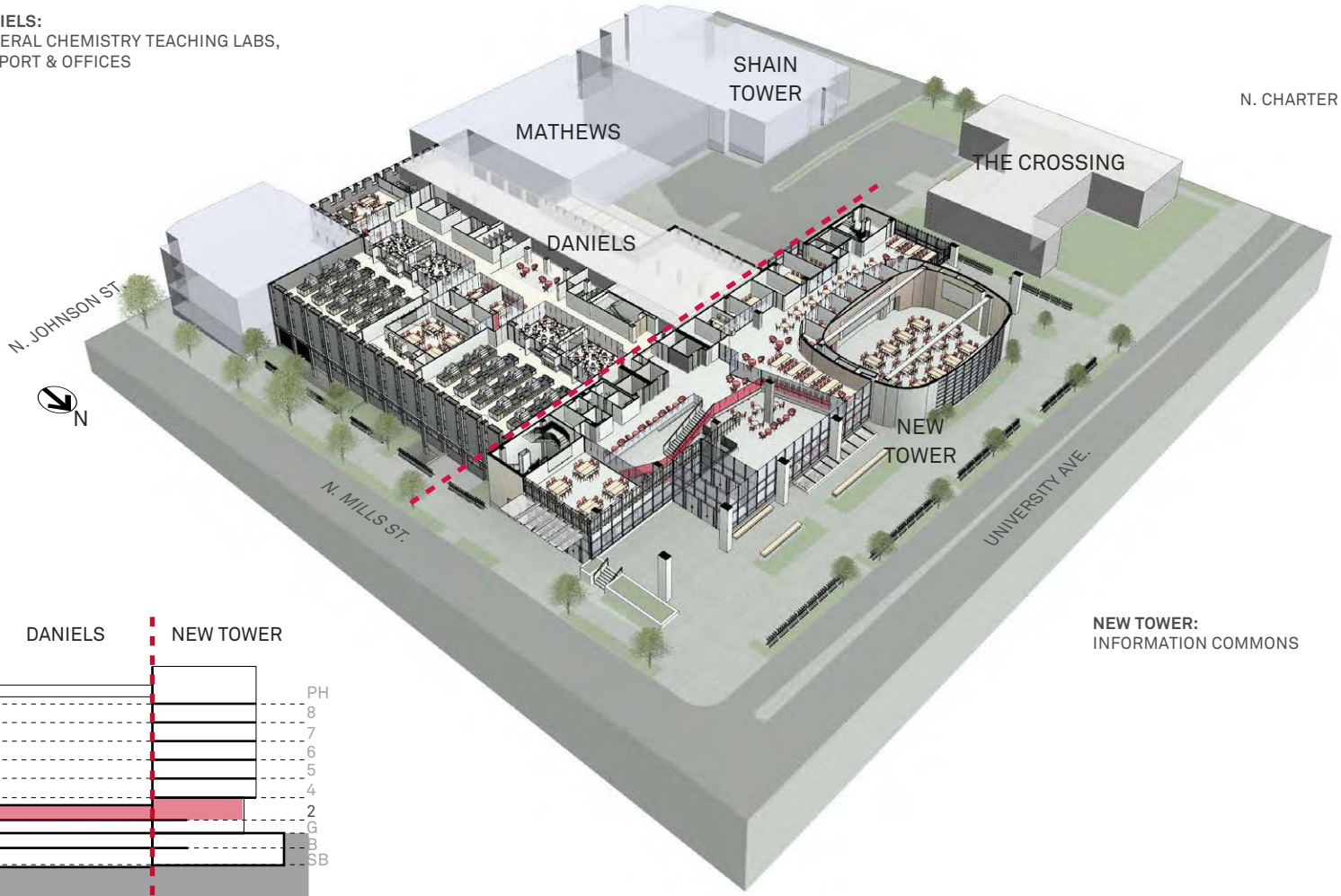
**NEW TOWER:**
LEARNING STUDIO & STUDENT COMMONS

# FLOOR PLANS: GROUND FLOOR



# FLOOR PLANS: SECOND FLOOR

**DANIELS:**
GENERAL CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

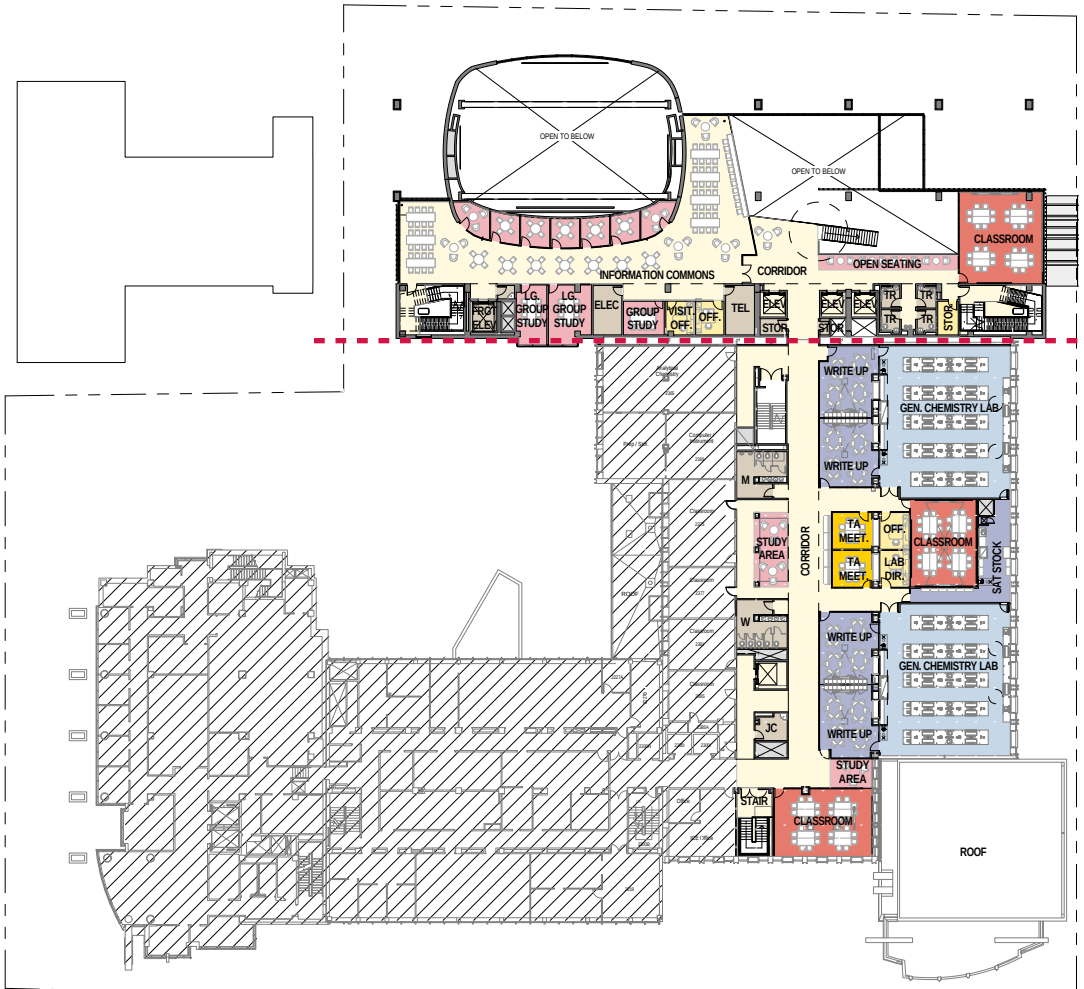






**NEW TOWER:**
INFORMATION COMMONS

# FLOOR PLANS: SECOND FLOOR

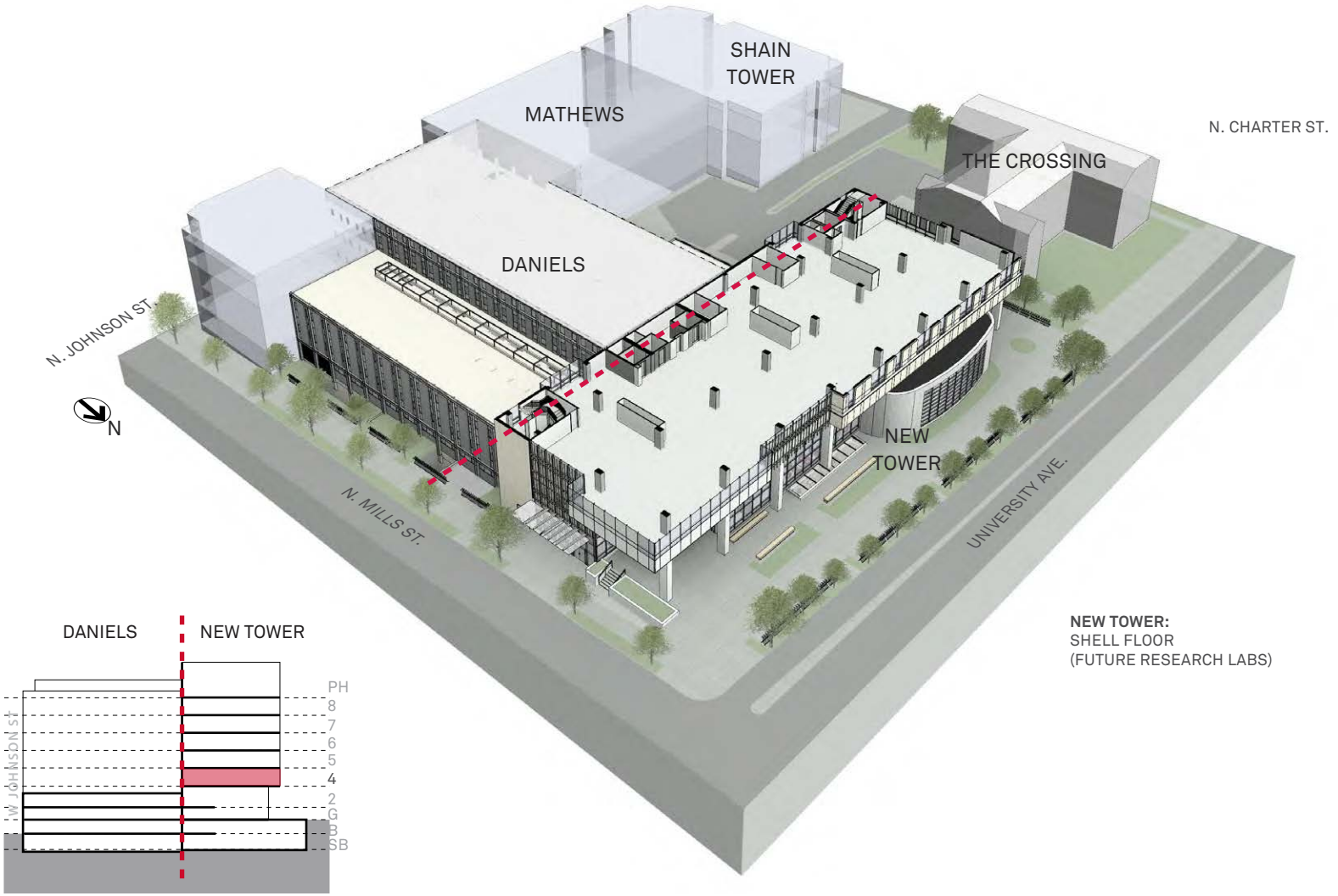



FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

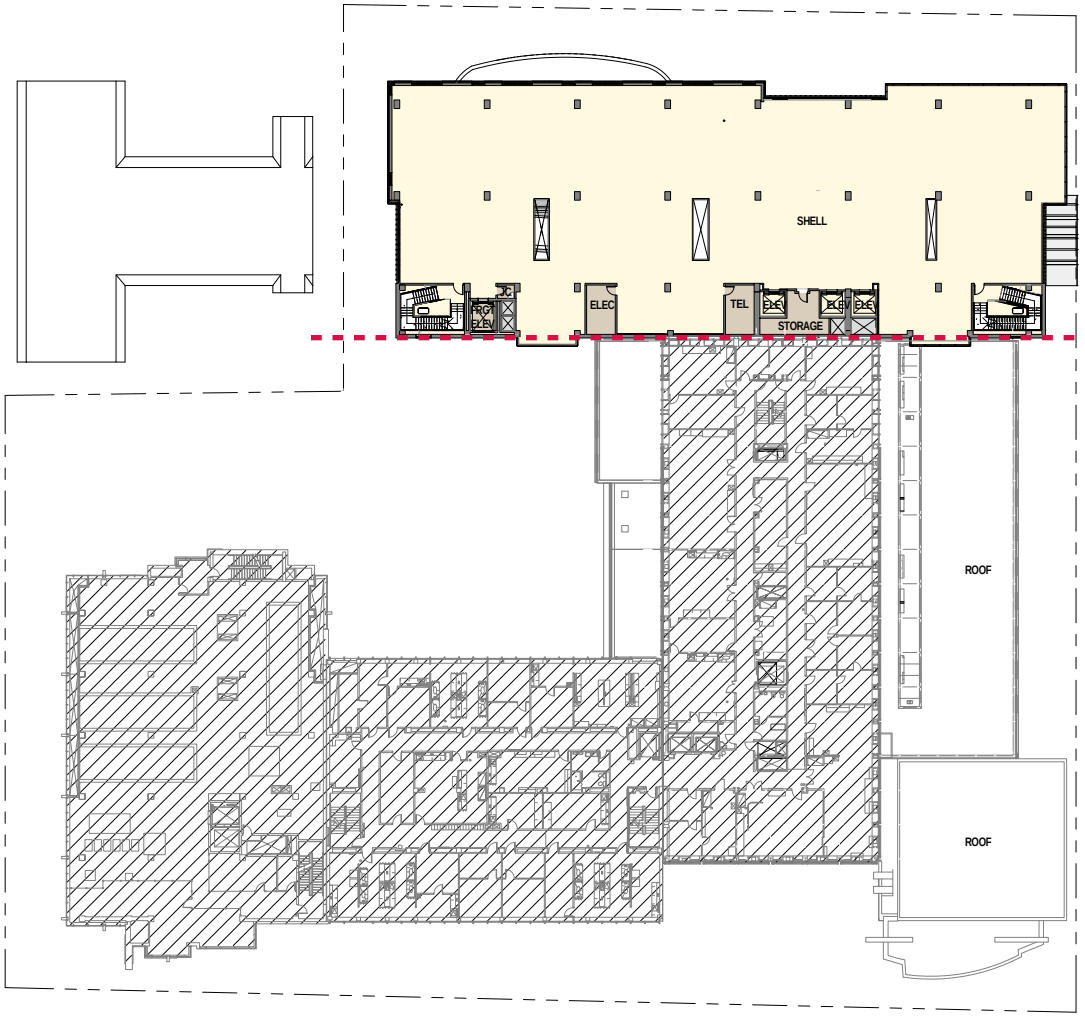
# FLOOR PLANS: FOURTH FLOOR

**[SHELL]**




**NEW TOWER:**
SHELL FLOOR
(FUTURE RESEARCH LABS)

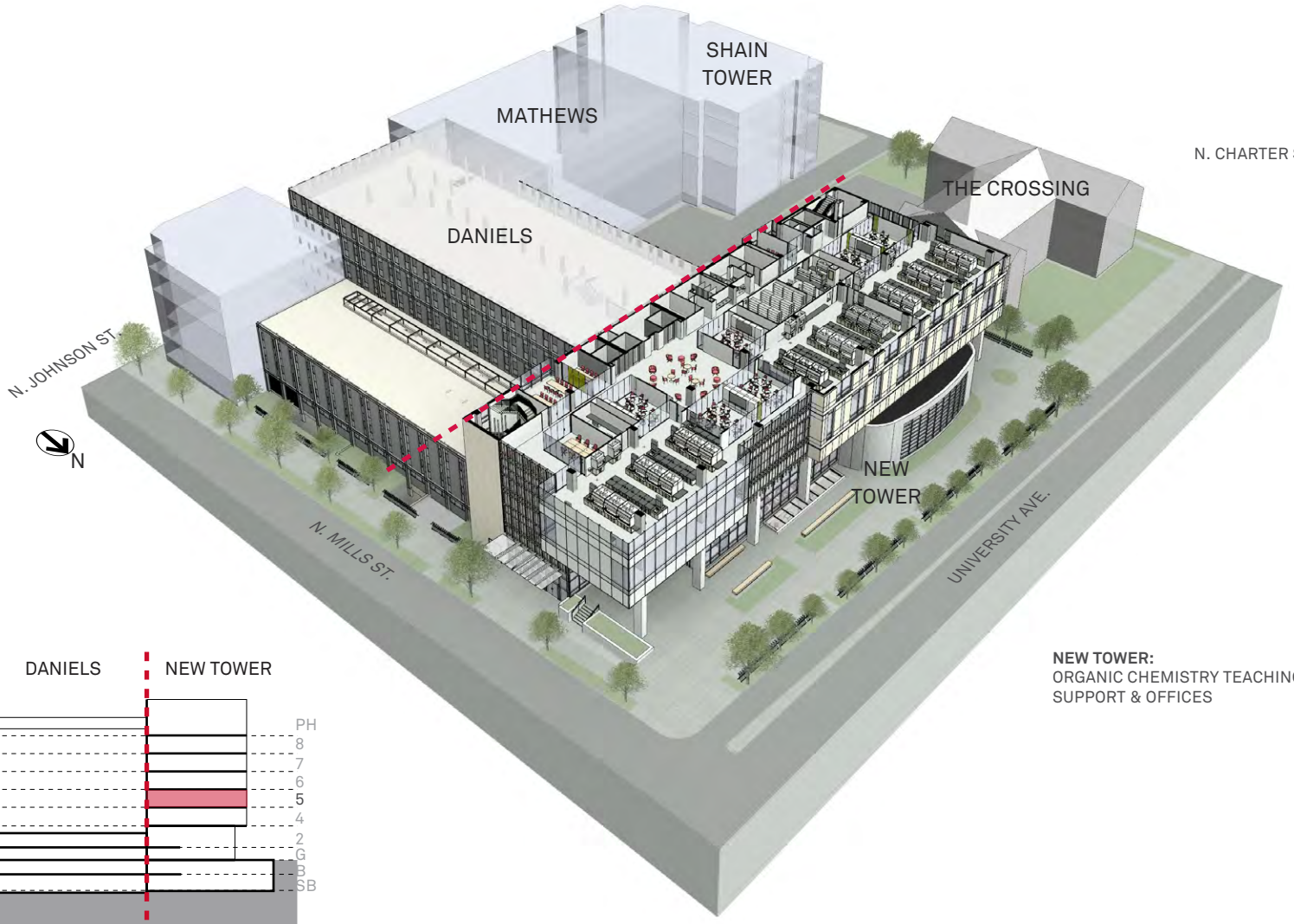
# FLOOR PLANS: FOURTH FLOOR




FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: FIFTH FLOOR







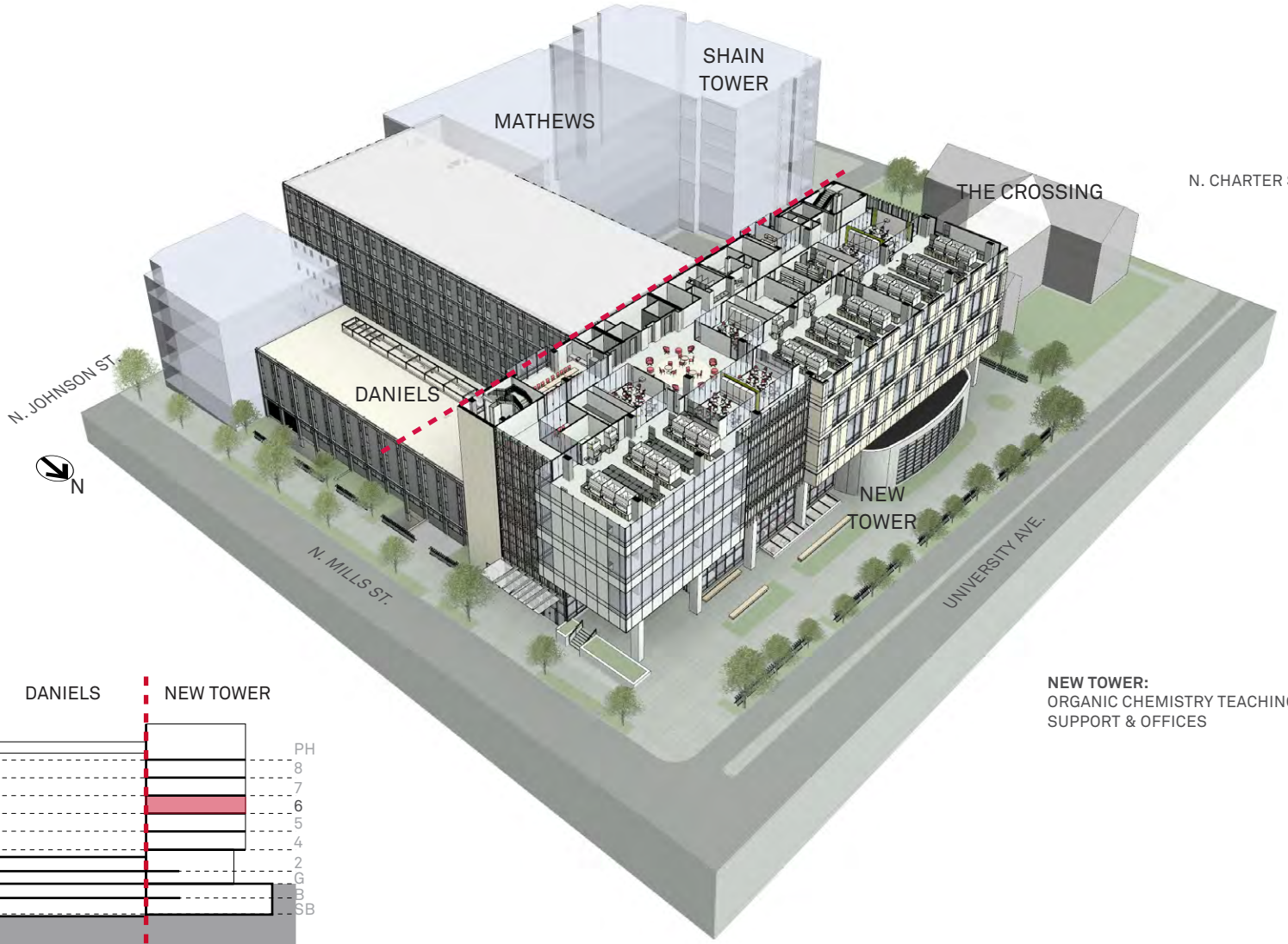
**NEW TOWER:**
ORGANIC CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

# FLOOR PLANS: FIFTH FLOOR


FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: SIXTH FLOOR







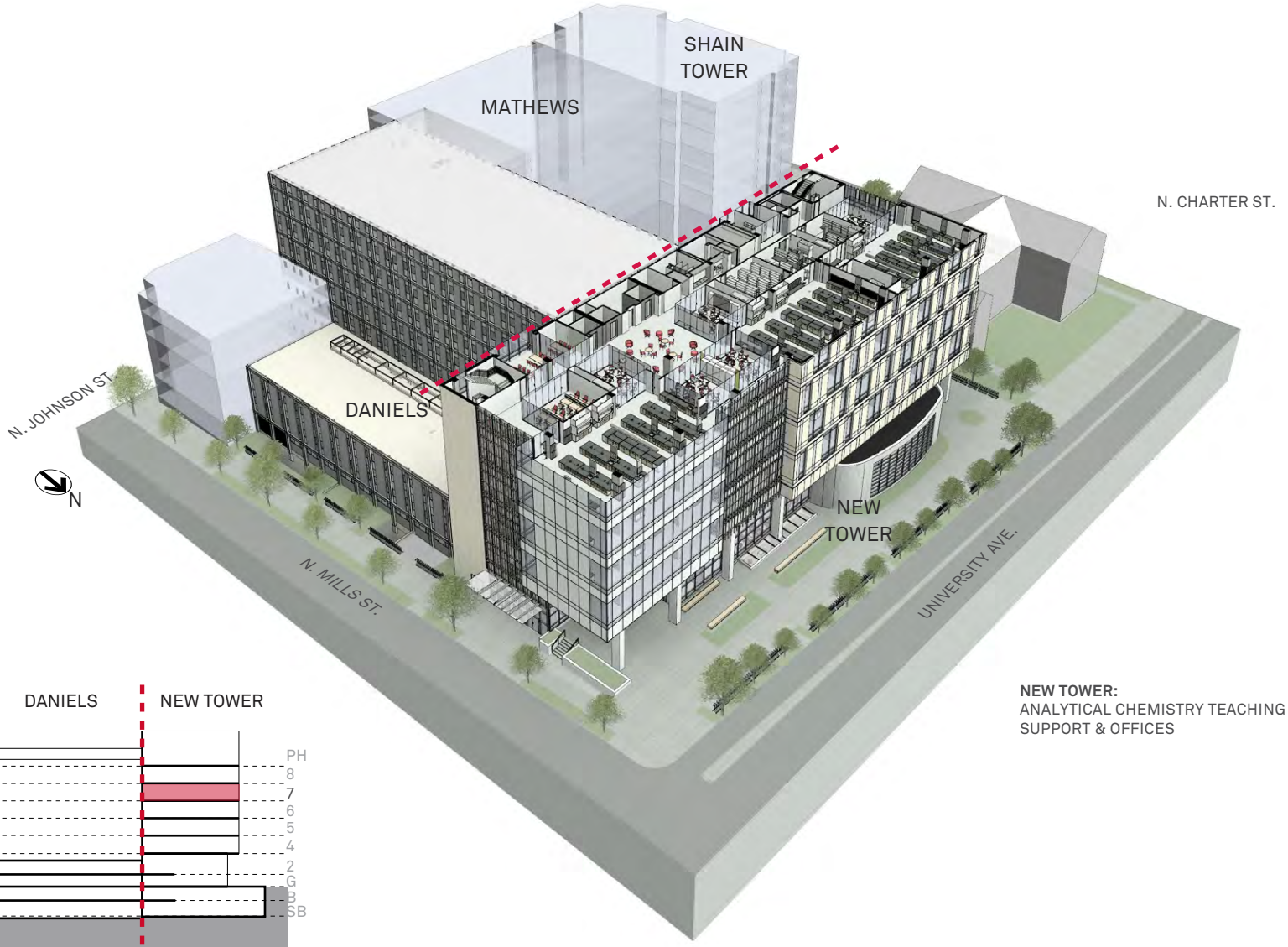
**NEW TOWER:**
ORGANIC CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

# FLOOR PLANS: SIXTH FLOOR


FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: SEVENTH FLOOR

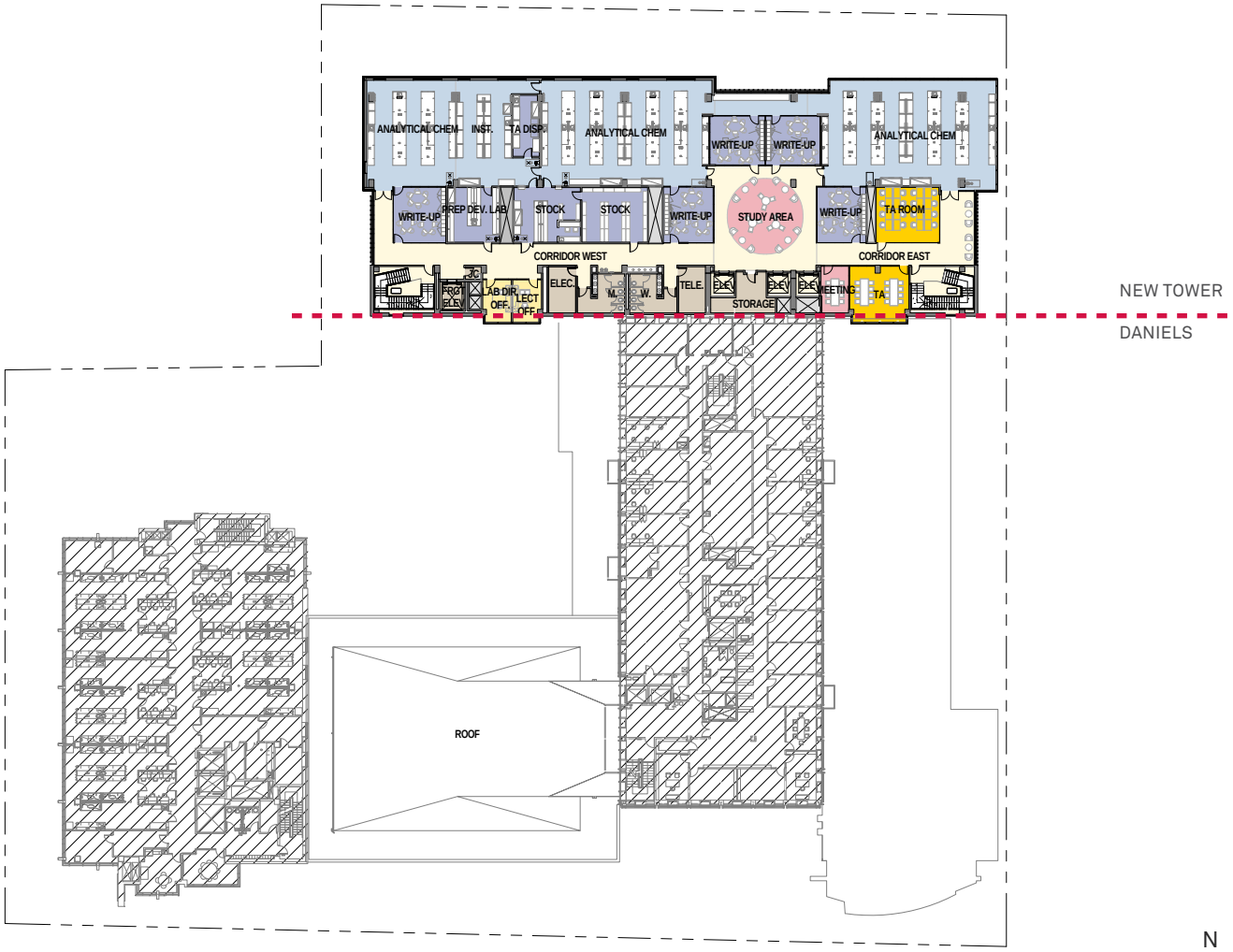






**NEW TOWER:**
ANALYTICAL CHEMISTRY TEACHING LABS,
SUPPORT & OFFICES

# FLOOR PLANS: SEVENTH FLOOR




FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: EIGHTH FLOOR

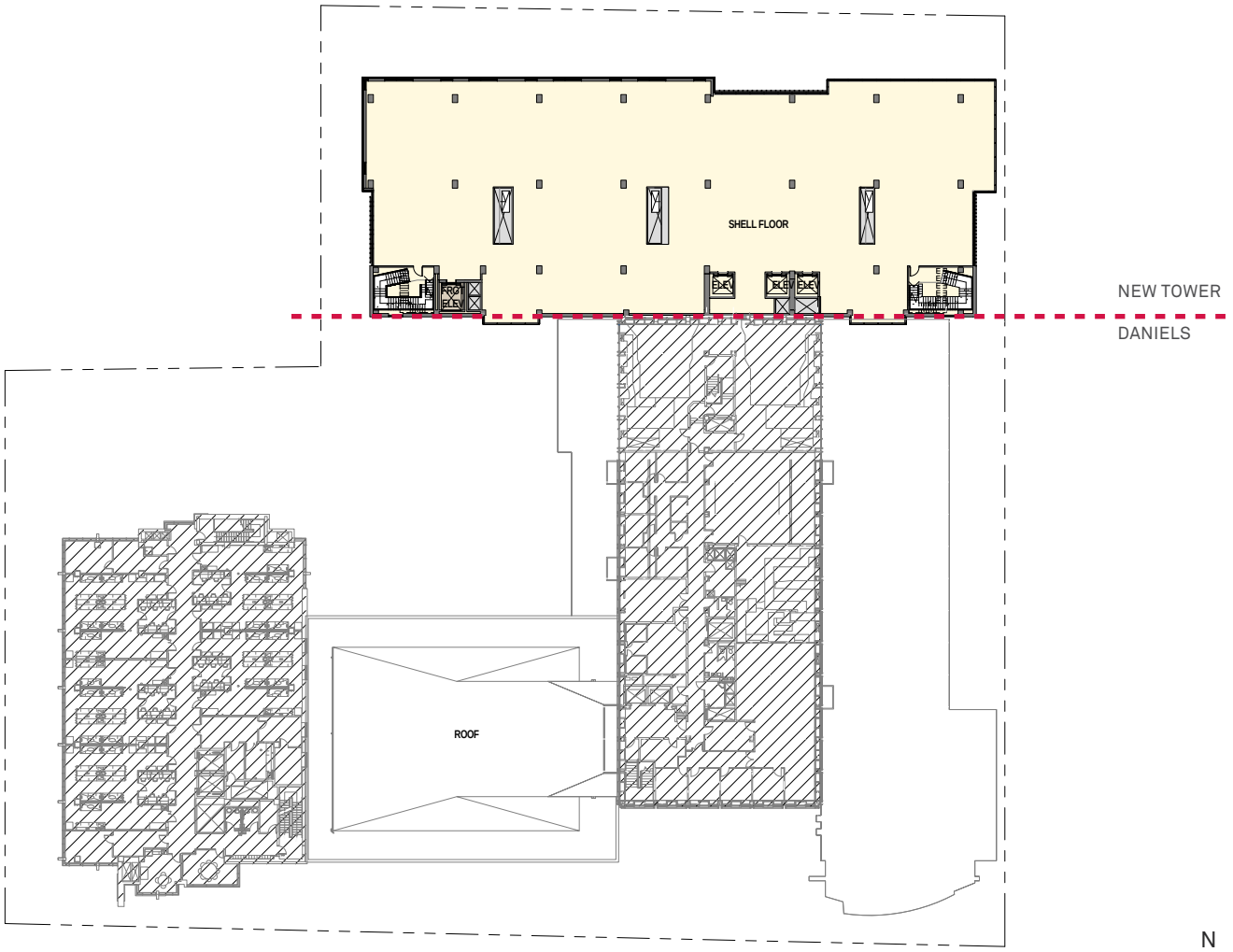
**[SHELL]**





**NEW TOWER:**
SHELL FLOOR
(FUTURE PHYSICAL CHEMISTRY TEACHING LABS)

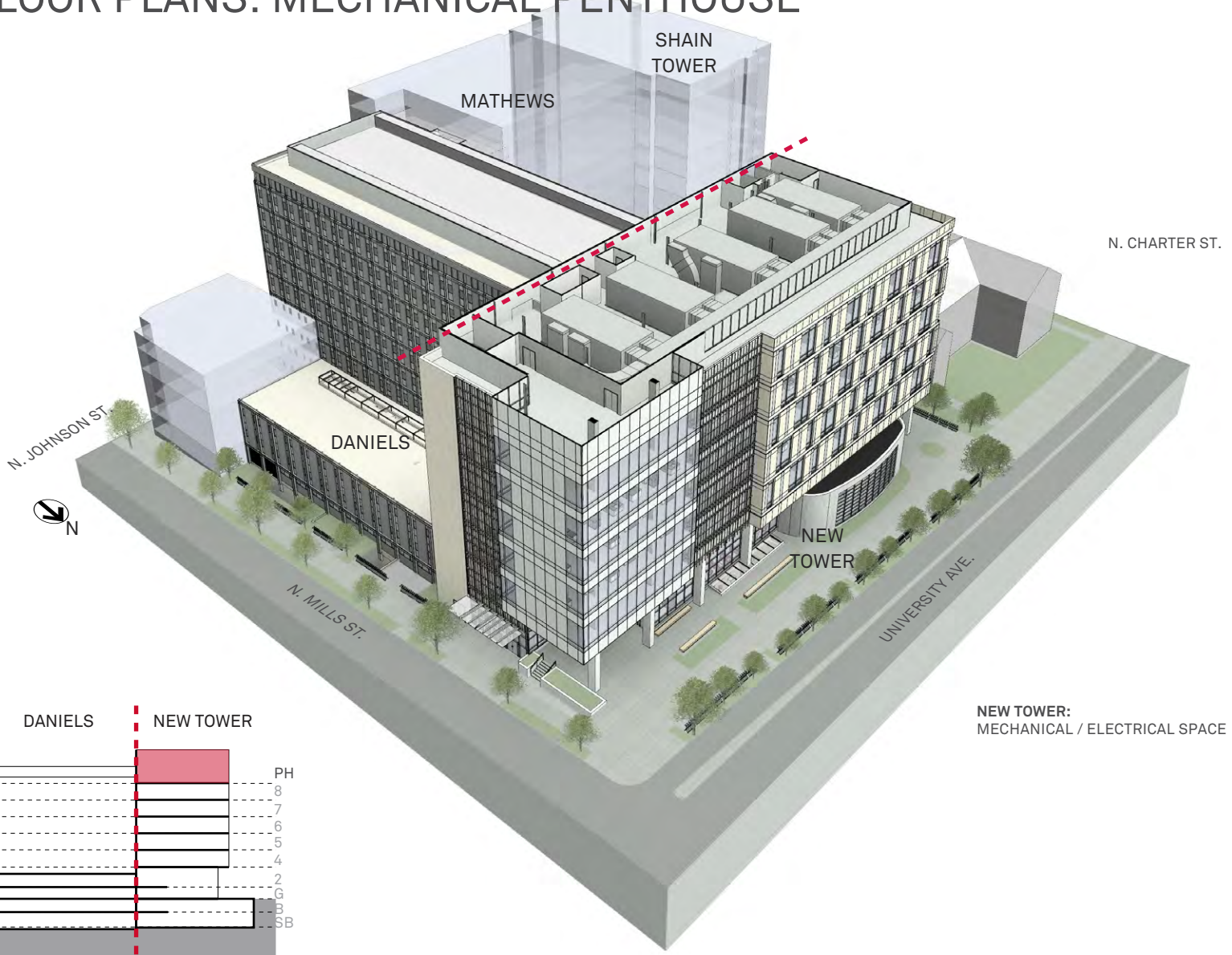
# FLOOR PLANS: EIGHTH FLOOR




FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

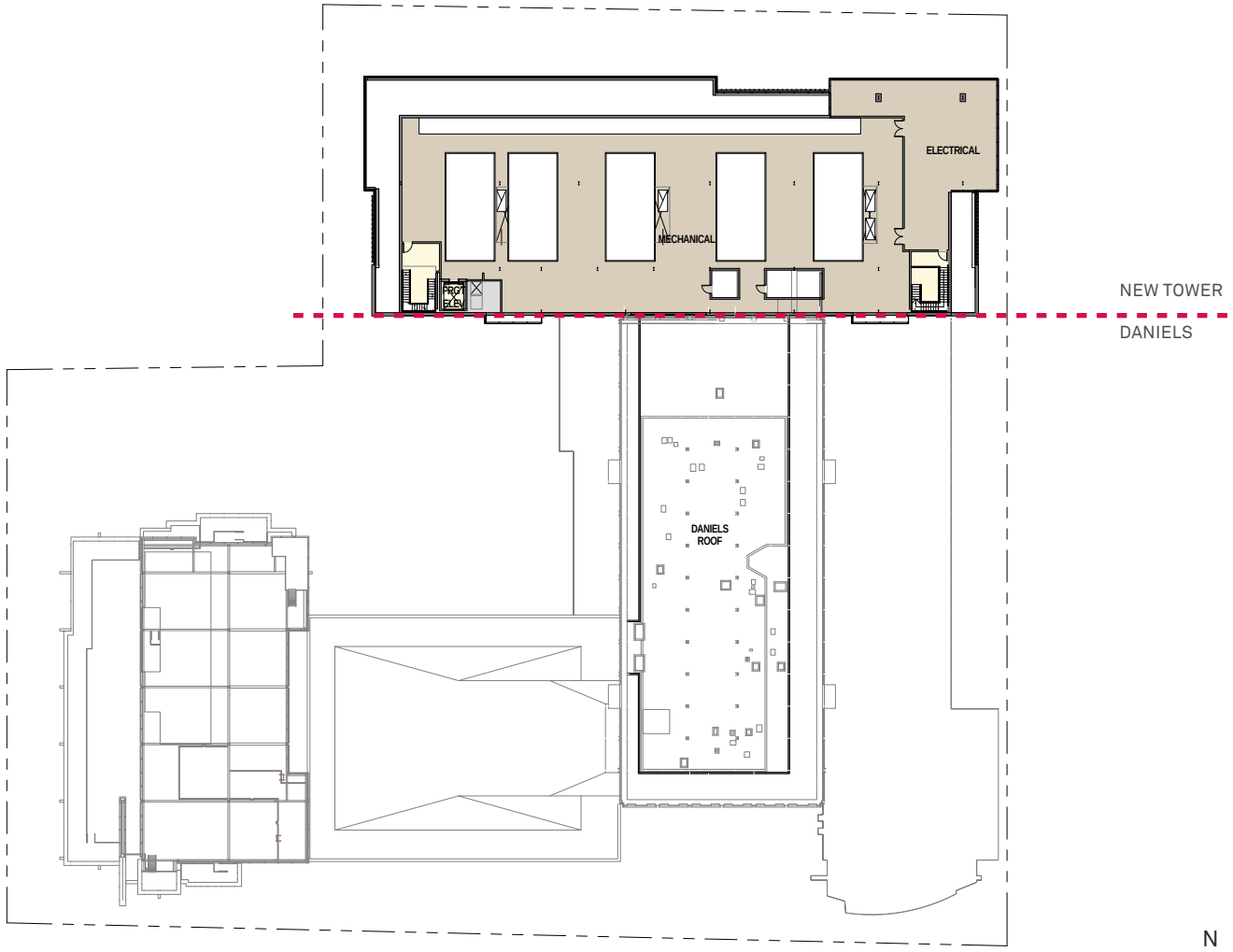
N

# FLOOR PLANS: MECHANICAL PENTHOUSE




**NEW TOWER:**
MECHANICAL / ELECTRICAL SPACE

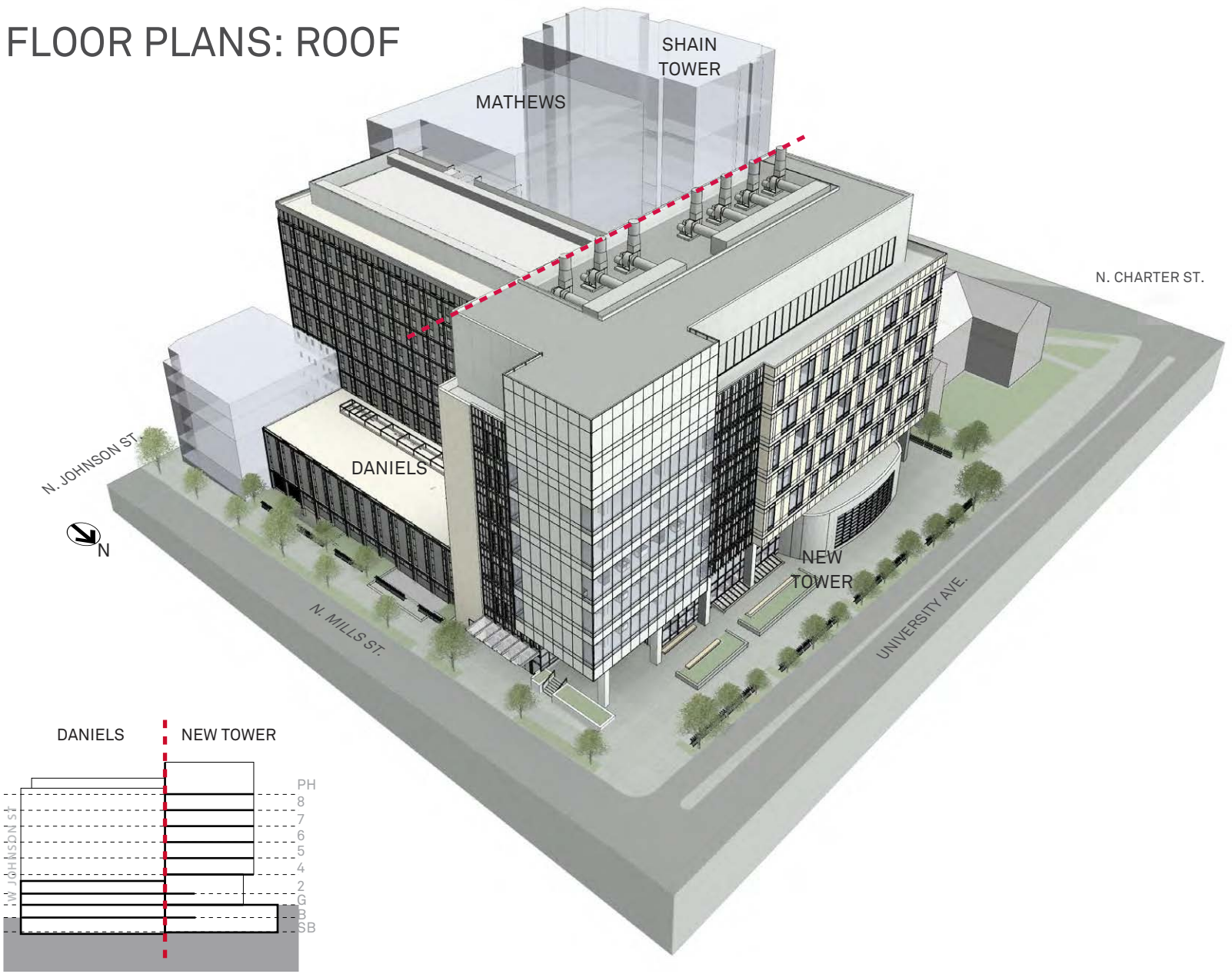
# FLOOR PLANS: MECHANICAL PENTHOUSE



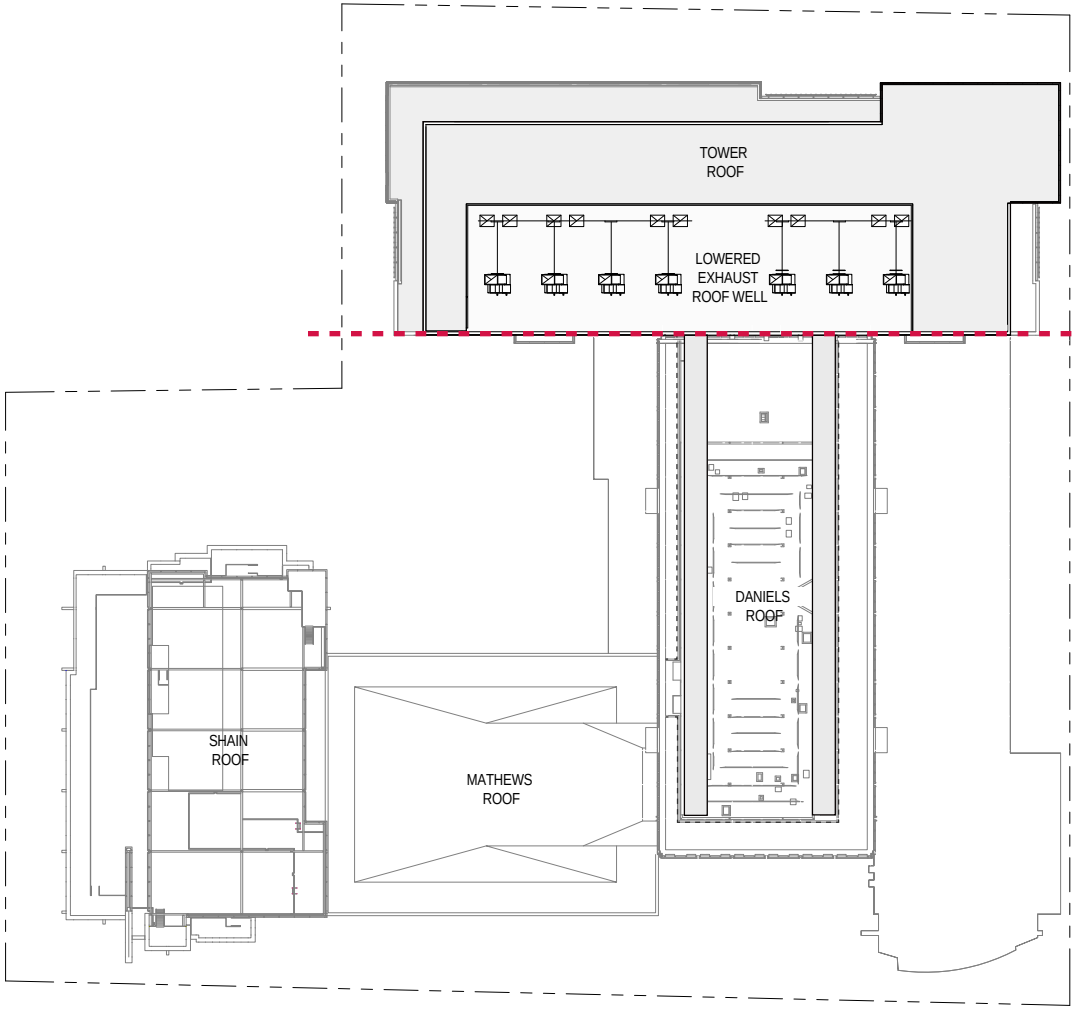

FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# FLOOR PLANS: ROOF



# FLOOR PLANS: ROOF




FLOOR PLAN
1/64" = 1'-0"
0 8' 16' 32' 64' 128'

N

# ACKNOWLEDGEMENTS


**WISCONSIN DEPARTMENT OF ADMINISTRATION**

**Division of Facilities Development (DFD)**

David Bartelt, Roofing

Ron Bristol, Controls

Jon Jensen, Architecture & Lab Design

Kathy Kalscheur, Site/Civil/Utilities

Abe Kheraz, Fire Alarm

Owen Landsverk, Exterior Envelope

Paul Lippitt, Plumbing & Fire Protection

Robert Lux, Teledata

Cleven McChesney, Electrical

Lisa Pearson, Landscape

Doug Schorr, HVAC

Tim Stratton, Hazardous Materials Abatement

Russ Van Gilder, Project Manager

**UNIVERSITY OF WISCONSIN MADISON**

**Facilities Planning & Management**

**Campus Planning + Landscape Architecture**

Jonathan Bronk, Landscape Architecture / Master Plan

Gary Brown, Director, Campus Planning and Landscape Architecture

Bill Elvey, Associate Vice Chancellor

Randy Hager, Physical Plant, Sustainability

Peter Heaslett, Architecture / Engineering Supervisor

Dan Okoli, UW Campus Architect

Jeff Schiller, Fire & Life Safety

Brent Wallace, EH&S, Chemical Safety, Bio Safety

Aaron Williams, PLA, ASLA, Assistant Planner and Zoning Coordinator

Jeff Zebrowski, EH&S, Chemical Safety, Bio Safety

**UNIVERSITY OF WISCONSIN MADISON | Department of Chemistry**

Ariel Andrea – Librarian

Rachel Bain, IT / AV Representative

Pam Doolittle, Lab Director, Analytical Chemistry

Jeanne Hamers, Undergraduate Director (Non-Lab Rep.)

Nick Hill, Lab Director, Organic (Lab Rep.)

Clark Landis, Professor, Inorganic (Non-Lab Rep.)

Jim Maynard, IT/AV Representative

Rob McClain, Lab Director, Advanced Analytical (Lab Rep.)

Robert McMahon, Chair, Chemistry Department

John Moore, Chair, Building Committee

Gil Nathanson, Chair, General Chemistry Division (Lab Rep.)

Jeff Nielsen, Chemistry Building Manager

Matt Sanders, Executive Director, Chemistry Department

Alan Silver, IT/AV Representative

Chad Wilkinson, Lab Director, General Chemistry

Tehshik Yoon, Professor, Organic (Non-Lab Rep.)

**UNIVERSITY OF WISCONSIN | System Administration**

Office of Capital Planning and Budget

Jeff Kosloske, Senior Architect

**STRANG | Architecture**
Dan Hale, Senior Project Manager
Mindie Nauman, Project Architect
Erica Ostendorf, Interior Designer
Scott Shepler, BIM Manager
Peter Tan, Design Principal / Sustainability
Wayne Whiting, Principal in Charge

**BALLINGER | Architecture**
Mark Chadwick, Project Manager
Todd Drake, Design Principal
Bill Gustafson, Principal in Charge
Tom Mistretta, Lab Planner
Emily Perrotta, Interior Designer
Craig Spangler, Lead Design Principal
Dustin Tobias, Project Architect
Rob Voss, Lead Architect

**ARO EBERLE | Architecture**
Michael Eberle, Principal
Shannon Miller, BIM Manager, Project Architect

**AEI | Mechanical and Electrical Engineering**
Jason Atkinson, Project Manager
Mike Broge, Principal in Charge
Neil Gammon, Lead Electrical Engineer
Jim Gardener, BIM Manager
Jeff Kaehny, Lead Mechanical Engineer
Joe Limke, Lead Technology Engineer
Jackie Hanson, Coordinator

**Graef | Structural Engineering, Civil Engineering, Landscaping**
Fred Groth, Structural Engineer, Principal in Charge
Joseph Pepitone, Landscape Architect
Tyler Smith, Civil Engineer
Bryant Stempski , Project Manager

**Thunderbird Engineering| Plumbing Engineering, Fire Protection**
Jim Mickowski, Principal
Jack Peterson, Piping + Fire Protection

**Jensen Hughes | Building Code Consultant**
Tony Jondo, Fire Safety Engineer
Ajay Prasad, Fire Safety Engineer

**JSD Professional Services | Surveyor**
Todd Buhr, Survey Department Manager
John Krebs, Project Surveyor

**Middleton Construction Consulting | Cost Estimating**
Josh Houston, Vice President, Lead Cost Estimator

GRĀEF

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# APPENDIX C

# WDNR Endangered Resource Review Letter

**State of Wisconsin \ DEPARTMENT OF NATURAL RESOURCES**

**Scott Walker, Governor**
**Cathy Stepp, Secretary**

**101 S. Webster St.**
**Box 7921**
**Madison, Wisconsin 53707-7921**
**Telephone 608-266-2621**
**FAX 608-267-3579**
**TTY 608-267-6897**

January 22, 2016

Mike Al-wathiqui
125 South 84th St.
Milwaukee, WI 53214

SUBJECT: Notice of Broad Incidental Take Permit/Authorization Coverage
Proposed Chemistry Building Instructional Addition and Renovation, City of Madison, Dane County, WI (T07N R09E Section 22)

Dear Mr. Al-wathiqui:

This letter serves as notice that the proposed project as described in your Endangered Resources (ER) Review Request dated January 22, 2016, is covered under Table 2 of the Broad Incidental Take Permit/Authorization for No/Low Impact Activities (No/Low BITP/A). *Please note, Table 2 is only for use by DNR Staff and ER Certified Reviewers, therefore, the table is not available online.* Due to this coverage under the No/Low BITP/A, a formal review letter is not needed. This BITP/A covers projects that the DNR has determined will have no impact or a minimal impact to endangered and threatened species in the state. Because of this, **there are no actions that need to be taken to comply with state endangered species laws**, **any take that may result from the proposed project is permitted/authorized.**

Attached is an ER Review Verification Form for you to keep on file and submit with any other necessary DNR permit applications to indicate that the ER requirements have been met.

In the future, we recommend running your project area through the NHI Public Portal, prior to requesting an ER Review, in order to ensure that a review is necessary. If the Endangered Resources Preliminary Assessment you receive from the Public Portal indicates that no further actions are necessary, you can submit that ER Preliminary Assessment report with other DNR permit applications to indicate that ER issues have been addressed. If the ER Preliminary Assessment indicates further actions are recommended or required, the next step would be to complete the ER Review Request Form. Also, if you include your ER Preliminary Assessment Report with your ER Review Request the ER Reviewer will be able to call up the project area from the Portal ensuring that the project area is drawn accurately and reducing the time needed to complete the review.

**This notice only addresses endangered resources issues. This notice does not constitute DNR authorization of the proposed project and does not exempt the project from securing necessary permits and approvals from the DNR and/or other permitting authorities.**

Please contact me at (608) 267-0862 or via email at Melissa.tumbleson@wisconsin.gov if you have any questions about this notice.

Sincerely,

Melissa Tumbleson
Endangered Resources Review Program

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# APPENDIX D

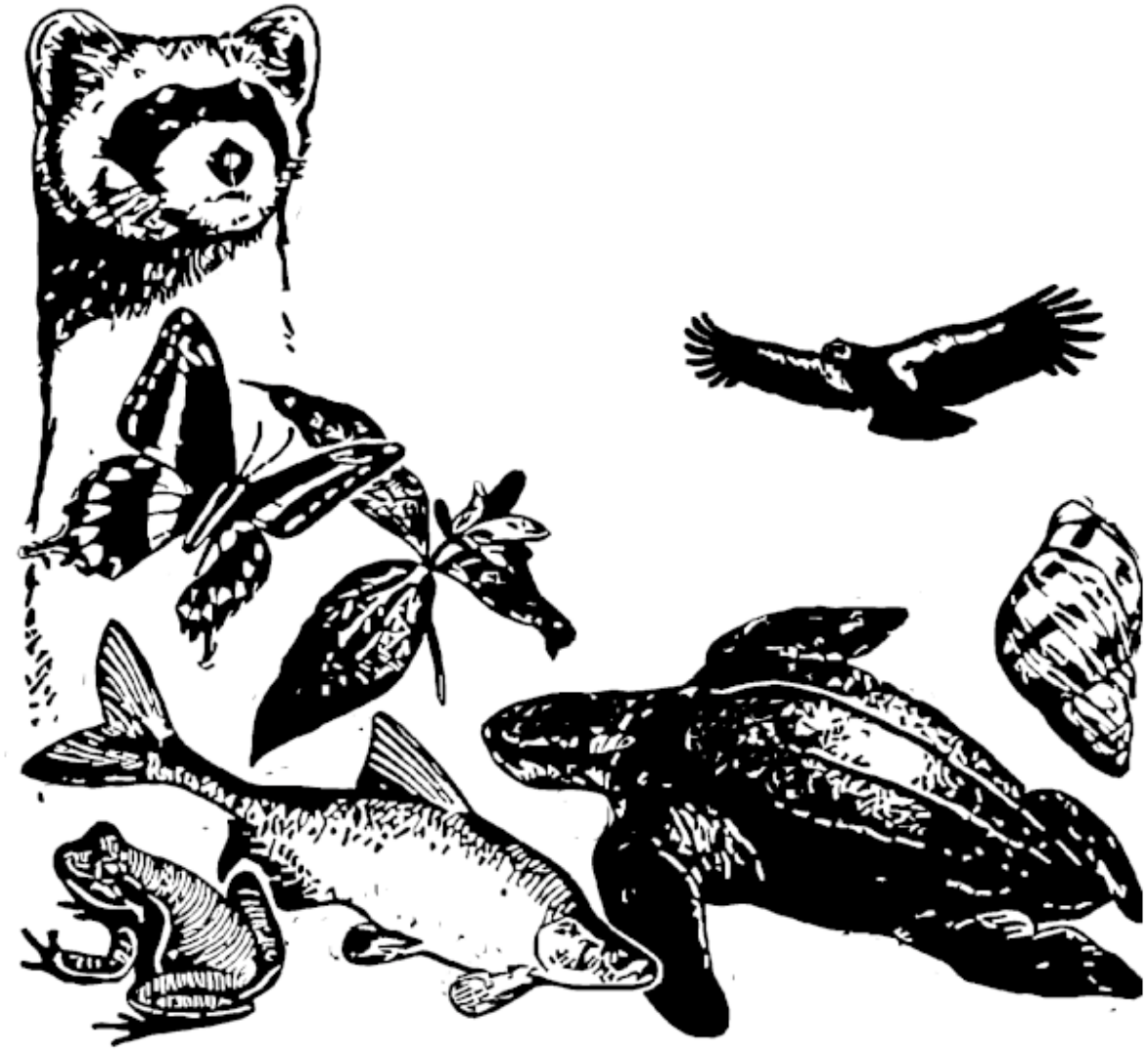
# USFWS IPaC Trust Resource Report

# Chemistry Building Instructional Addition & Renovation

## *IPaC Trust Resource Report*

Generated January 21, 2016 02:23 PM MST, IPaC v2.3.2

This report is for informational purposes only and should not be used for planning or analyzing project level impacts. For project reviews that require U.S. Fish & Wildlife Service review or concurrence, please return to the IPaC website and request an official species list from the Regulatory Documents page.



IPaC - Information for Planning and Conservation (https://ecos.fws.gov/ipac/): A project planning tool to help streamline the U.S. Fish & Wildlife Service environmental review process.

US Fish & Wildlife Service

# IPaC Trust Resource Report

NAME

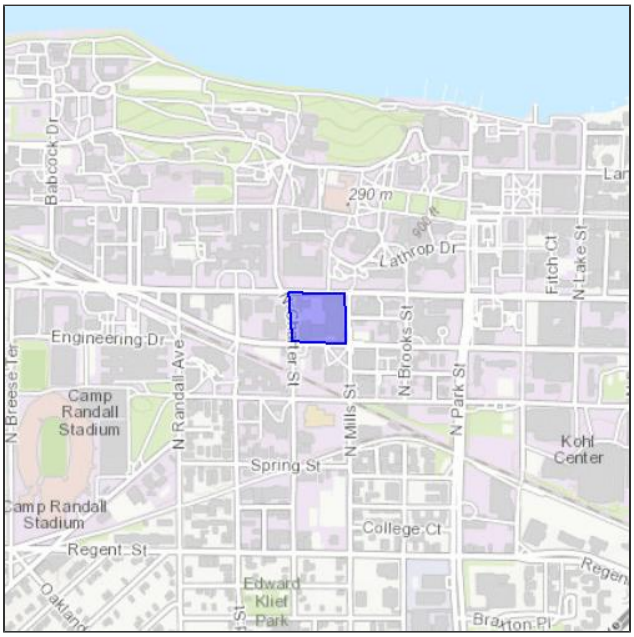
Chemistry Building Instructional Addition & Renovation

LOCATION

Dane County, Wisconsin

IPAC LINK

https://ecos.fws.gov/ipac/project/XHTGJ-KIYQR-FC3DK-QYVNE-HLXLBQ




## U.S. Fish & Wildlife Contact Information

Trust resources in this location are managed by:

**Green Bay Ecological Services Field Office**
2661 Scott Tower Drive
New Franken, WI 54229-9565
(920) 866-1717

# Endangered Species

Proposed, candidate, threatened, and endangered species are managed by the Endangered Species Program of the U.S. Fish & Wildlife Service.

**This USFWS trust resource report is for informational purposes only and should not be used for planning or analyzing project level impacts.**

For project evaluations that require FWS concurrence/review, please return to the IPaC website and request an official species list from the Regulatory Documents section.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency.

**A letter from the local office and a species list which fulfills this requirement can only be obtained by requesting an official species list from the Regulatory Documents section in IPaC.**

The list of species below are those that may occur or could potentially be affected by activities in this location:

## Birds

**Whooping Crane** Grus americana — Experimental Population, Non-Essential

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B003

## Clams

**Higgins Eye (pearlymussel)** Lampsilis higginsii — Endangered

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=F009

# Flowering Plants

**Eastern Prairie Fringed Orchid** Platanthera leucophaea — Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2GG

**Mead's Milkweed** Asclepias meadii — Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q1T6

**Prairie Bush-clover** Lespedeza leptostachya — Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=Q2CB

# Mammals

**Northern Long-eared Bat** Myotis septentrionalis — Threatened

CRITICAL HABITAT

**No critical habitat** has been designated for this species.

https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=A0JE

# Critical Habitats

**There are no critical habitats in this location**

# Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures.

Additional information can be found using the following links:

- Birds of Conservation Concern
  http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Conservation measures for birds
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Year-round bird occurrence data
  http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/akn-histogram-tools.php

The following species of migratory birds could potentially be affected by activities in this location:

**American Bittern** Botaurus lentiginosus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F3

**Bald Eagle** Haliaeetus leucocephalus — Bird of conservation concern
Year-round
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B008

**Black Tern** Chlidonias niger — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09F

**Black-billed Cuckoo** Coccyzus erythropthalmus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HI

**Blue-winged Warbler** Vermivora pinus — Bird of conservation concern
Season: Breeding

**Bobolink** Dolichonyx oryzivorus — Bird of conservation concern
Season: Breeding

**Brown Thrasher** Toxostoma rufum — Bird of conservation concern
Season: Breeding

**Cerulean Warbler** Dendroica cerulea — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09I

**Common Tern** Sterna hirundo — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09G

**Dickcissel** Spiza americana — Bird of conservation concern
Season: Breeding

**Henslow's Sparrow** Ammodramus henslowii — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B09D

**Kentucky Warbler** Oporornis formosus — Bird of conservation concern
Season: Breeding

**Least Bittern** Ixobrychus exilis — Bird of conservation concern
Season: Breeding

**Loggerhead Shrike** Lanius ludovicianus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0FY

**Marsh Wren** Cistothorus palustris — Bird of conservation concern
Season: Breeding

**Pied-billed Grebe** Podilymbus podiceps — Bird of conservation concern
Season: Breeding

**Red-headed Woodpecker** Melanerpes erythrocephalus — Bird of conservation concern
Season: Breeding

**Rusty Blackbird** Euphagus carolinus — Bird of conservation concern
Season: Wintering

**Short-eared Owl** Asio flammeus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HD

**Upland Sandpiper** Bartramia longicauda — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0HC

**Willow Flycatcher** Empidonax traillii — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/tess_public/profile/speciesProfile.action?spcode=B0F6

**Wood Thrush** Hylocichla mustelina — Bird of conservation concern
Season: Breeding

# Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

**There are no refuges in this location**

# Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

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# APPENDIX E

# Wisconsin State Historical Societies Inventory of Significance

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# APPENDIX F

# Kickoff Meeting Minutes

One Honey Creek Corporate Center
125 South 84th Street, Suite 401
Milwaukee, WI 53214-1470
Telephone (414) 259-1500 • FAX (414) 259-0037

# MEMORANDUM

**TO:** EIA Team

**FROM:** Mike Al-wathiqui and Brian Schneider

**DATE:** 12/18/15

**SUBJECT:** Kickoff Meeting Minutes
UW Madison – Chemistry Building Instructional Addition & Renovation
Environmental Impact Assessment (EIA)
DSF Project #13B3G
Friday, December 18, 2015 10:00 to 11:00

## Kickoff Meeting Notes

1. Introduce participants and discuss roles

    - Russ Van Gilder – DSF Project Manager
    - Gary Brown – Director of Campus Planning, UW-Madison
    - Pete Heaslett – Project Manager, UW-Madison
    - Dan Hale – Strang, Architect
    - Wayne Whiting – Strang, Architect
    - MikeAl-wathiqui – GRAEF
    - Brian Schneider – GRAEF
    - Not Present: Alexandra Roe – Architect, UW System Administration

2. EIS Schedule Review

    - Tentative Project Schedule
        - May 2016 – Authority to Construct
        - January 2017 – Bid Date (New Tower)
        - April 2017 – Start Construction (New Tower)
        - May 2019 – Substantial completion
        - August 2019 – Occupancy

    - Tentative EIS Schedule
        - Kickoff meeting 12/18/15
        - Scoping/Data Analysis/Evaluation Process 12/28/15 – 3/10/16
        - Release Draft EIA for Internal Review 3/11/16

- Release Draft EIA for Public Review 3/30/16
- Public Meeting on Draft EIA 4/14/16
- Closing Date for Public Comment Period 4/14/16 (15 days)
- Release Final EIA and Record of Decision 5/6/16
  (Spring Break is from March 19 thru March 27)

3. Communications

   - Scoping Distribution List – GRAEF will send a draft scoping list to Russ Van Gilder and Gary Brown

   - Local Media – Wisconsin State Journal and campus newspapers, if available

   - Location of Meeting – WARF

4. Project Overview

   - Project Description and Scope
     - Remove 2- story portion and basement of Daniels Chemistry Building
     - Remove house at 1121 University Avenue and repair east face of Wellesley Foundation Chapel
     - Construct new chemistry building with 2 – subgrade floors, 8 floors above grade, and a penthouse
     - Renovate the lower three floors of the existing Daniels Building
     - Rehabilitate mechanical systems
     - Site improvements
     - Project will pursue LEED certification
     - A design report will be provided by UW

   - Project Budget – the project budget is $107,760,000.

   - Effects of construction

     - Relocation of functions during construction
       1. Labs primarily at Medical Science Center
       2. Classes at various locations
       3. Offices will also be temporarily relocated
     - Temporary closure of streets and sidewalks
       1. West parking lane and west sidewalk on Mill Street will be closed during construction with the loss of metered parking and one bus stop – bus stop to be relocated temporarily.
       2. Potential loss of up to ½ of the 27 parking stalls in Lot 55, some of the stalls may be lost permanently.

3. The east bound bike lane on University Avenue may be temporarily closed and the sidewalk covered.
4. The east side of Charter Street may experience short term lane and sidewalk closure for utility trenching with plates used over trenches, as needed.
5. It is not anticipated that Johnson Street will be significantly affected by the construction.

- Environmental, Archeological, or Historical Concerns
    - The Wellesley Foundation Chapel is eligible for historic listing and the repairs to the chapel will be made to match the existing.
    - Excavated soils for foundations will leave the site and dewatering will be needed. UW does not know of any potential environmental contaminants on site. The boring logs will be reviewed for indications of fill material.
    - UW Department of Environment and Safety will manage chemical containers in labs, as needed.

- Alternatives
    - Permanently move some chemistry functions to the Medical Science Center – there are significant physical constraints with this building.
    - Do Nothing – this would not provide sufficient space for the current and future needs of the chemistry department and operating costs would likely increase.

- Campus/Community Concerns
    - A shading study should be conducted by the design team to evaluate the potential shading impacts on the new campus center building on the northwest corner of Mill and University.
    - The owners of the Lutheran church and Christian Scientist facility should be included on the scooping list.

- Action Items
    - DFD (Russ Van Gilder) will provide E-Mails for additional team members (Strang Architects).
    - DFD will provide the overall building height and design report.
    - GRAEF will prepare a draft Scoping Distribution list for submittal to Gary Brown and Russ Van Gilder for updates and additions.
    - DFD will provide geotechnical boring logs.
    - DFD will provide cost data on the alternatives, as available.
    - GRAEF will prepare a list of questions regarding project specifics to be distributed amongst the team as the EIA progresses.

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# APPENDIX G

# Public Notice Proof of Publication Affidavits

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# APPENDIX H

# Distribution List

**Attachment B – Distribution List**

**Environmental Impact Assessment (EIA) Document Distribution List**
**Chemistry Building Instructional Addition & Renovation**
**University of Wisconsin - Madison**
**DFD Project #13B3G**

**M** - mailed a hard copy; **E** - emailed an electronic copy or website notice; **ND** - not distributed

Revised 1/29/2016

| Contact Name | Organization | Address Line 1 | Address Line 2 | City | State | Zip | Email Address | Document Distribution: Scoping | Draft EIA | Final EIA |
|---|---|---|---|---|---|---|---|---|---|---|
| **University of Wisconsin System** | | | | | | | | | | |
| Alexandra Roe | UW System Administration | Suite 245 | 780 Regent St. | Madison | WI | 53715 | aroe@uwsa.edu | E | M/E | M/E |
| **University of Wisconsin - Madison** | | | | | | | | | | |
| Gary Brown | Director, Campus Planning and Landscape | | 610 Walnut St | Madison | WI | 53726 | gbrown@fpm.wisc.edu | E | M/E | M/E |
| Pete Heaslett | UW-Madison Project Manager | 474 30 N. Mills | | Madison | WI | 53715 | peter.heaslett@wisc.edu | E | M/E | M/E |
| Prof. Robert J. McMahon | UW-Madison, Dept. of Chemistry | 1101 University Avenue | | Madison | WI | 53706-1396 | mcmahon@chem.wisc.edu | E | M/E | M/E |
| **Division of Facilities Development** | | | | | | | | | | |
| Russ Van Glider | DFD Project Manager | 7th floor | 101 E Wilson | Madison | WI | 53703 | russ.vangilder@wisconsin.gov | E | M/E | M/E |
| **Federal Government Agencies** | | | | | | | | | | |
| Louise Clemency | U.S. Fish and Wildlife | 2661 Scott Tower Drive | | New Franken | WI | 54229 | GreenBay@fws.gov | E | | |
| **State Government Agency Contacts** | | | | | | | | | | |
| Russ Anderson | Wisconsin Department of Natural Resources | 3911 Fish Hatchery Road | | Fitchburg | WI | 53711 | Russell.Anderson@Wisconsin.gov | E | | |
| Chip Brown | Wisconsin Historical Society | 816 State St. | | Madison | WI | 53706-1482 | chip.brown@wisconsinhistory.org | E | | |
| **Dane County** | | | | | | | | | | |
| Joe Parisi | Dane County Executive | City County Building Room 421 | 210 Martin Lut | Madison | WI | 53703 | parisi@countyofdane.com | E | | |
| Mike Willett | Dane County Supervisor, District 32 | 7715 Midtown Road | | Verona | WI | 53593 | willett@countyofdane.com | E | | |
| **City of Madison** | | | | | | | | | | |
| Tim Troester | City of Madison Engineering | 210 Martin Luther King Jr Blvd | Room 115 | Madison | WI | 53703 | ttroester@cityofmadison.com | E | | |
| Zach Wood | City of Madison alder, district 8 | 661 Mendota Court #304 | | Madison | WI | 53703 | District8@cityofmadison.com | E | | |
| **State Elected Officials** | | | | | | | | | | |
| Governor Scott Walker | Office of the Governor | 115 East Capitol | | Madison | WI | 53702 | govgeneral@wisconsin.gov | E | | |
| Representative Janis Ringhand | 80th Assembly District | Room 418 North, State Capitol | PO Box 8952 | Madison | WI | 53708 | Rep.Ringhand@legis.wi.gov | E | | |
| Senator Jon Erpenbach | 27th Senate District | Room 104 South, State Capitol | PO Box 7882 | Madison | WI | 53707-7882 | Sen.Erpenbach@legis.wisconsin.gov | E | | |
| Representative Tammy Baldwin | U.S. Representative | 10 East Doty St, Suite 405 | | Madison | WI | 53703 | Daniel_McCarthy@baldwin.senate.gov | E | | |
| Senator Ron Johnson | U.S. Senate | 2 Russell Courtyard | | Washington | DC | 20510 | Scheduling@ronjohnson.senate.gov | E | | |
| **AE Design Team** | | | | | | | | | | |
| Dan Hale | Strang, Architect | 6411 Mineral Point Road | | Madison | WI | 53705 | dhale@strang-inc.com | E | M/E | M/E |
| Wayne Whiting | Strang, Architect | 6411 Mineral Point Road | | Madison | WI | 53705 | whiting@strang-inc.com | E | M/E | M/E |
| **Other Local** | | | | | | | | | | |
| **Joint Southeast Campus Area Committe** | | | | | | | | | | |
| Aaron Crandall | Ped/Bike/Motor Vehicle Representative | | | | | | Aaron.crandall@yahoo.com | | | |
| Bradley Cantrell | Plan Commission Representative | | | | | | bacantrell@charter.net | | | |
| Everett Mitchell | UW-Chancellor Special | | | | | | edmitchell@wisc.edu | | | |
| Jason King | UW-Athletics Division Representative | | | | | | jwk@athletics.wisc.edu | | | |
| John Perkins | Greenbush Neighborhood Associate Representative | | | | | | Perkinsj71@gmail.com | | | |
| Larry Warman | Capital Neighbrohoods Representative | | | | | | ljwarman@juno.com | | | |
| Ledell Zellers | Alder, District 2 | | | | | | District2@cityofmadison.com | | | |
| Margaret Bergamini | Transit and Parking Commission representative | | | | | | mmbergamini@wisc.edu | | | |
| Mark Guthier | UW-Wisconsin Union Representative | | | | | | mark.c.guthier@wisc.edu | | | |
| Mary Agard | Brittingham Area Representative | | | | | | marya@globaldialog.com | | | |
| Michael Verveer | Alder, District 4 | | | | | | District4@cityofmadison.com | | | |
| Mike Kinderman | UW-Housing Division Representative | | | | | | Mike.kinderman@housing.wisc.edu | | | |
| Norma Saldivar | UW-Madison Arts Institute Representative | | | | | | nsaldivar@wisc.edu | | | |
| Rob Kennedy | UW-Transportation Comm. | | | | | | rkennedy@fpm.wisc.edu | | | |
| Sandra Torkildson | State Street Organization Representative | | | | | | room@chorus.net | | | |
| Sara Eskrich | Alder, District 13 | | | | | | District13@cityofmadison.com | | | |
| Sara Neibart | State-Langdon Neighborhood Representative | | | | | | neibart@wisc.edu | | | |
| Tobin McGilligan | UW-ASM Representative | | | | | | Mcgilligan2@wisc.edu | | | |

| **Local Libraries** | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Helen C. White University Library | General Reference Desk | 600 North Park Street | | Madison | WI | 53706 | libraries@library.wisc.edu | | | |
| City of Madison Public Library | General Reference Desk | 201 W. Mifflin Street | | Madison | WI | 53703 | reference@madisonpubliclibrary.org | | | |
| | | | | | | | | | | |
| The Badger Herald | | 326 W. Gorham Street | | Madison | WI | 53703 | opinion@badgerherald.com | | | |
| Wisconsin State Journal | | 1901 Fish Hatchery Road | P.O. Box 8056 | Madison | WI | 53708 | wsjcity@madison.com | | | |
| The Daily Cardinal | | 2142 Vilas Hall, 821 University Avenue | | Madison | WI | 53706-1497 | editor@dailycardinal.com | | | |